

## Training for Heavy Vehicle Drivers in India: Challenges

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### Abstract

India is among the top 7% of those nations where the deaths and injuries due to road accidents are extremely high. As per the statistics available, 78% (TRW, Ministry of Road Transport, and India 2001-13) of the road accidents in India happen due to the fault of the driver. In that, roughly 50% (TRW, 2008-13) of the accidents involve heavy vehicles and result in fatalities. Road safety can be improved substantially by enhancing the effectiveness of driver training programs. Taking the example of the USA and EU, where road safety conditions are substantially better, Indian driver training programs may be modified.

In this working paper, the author's endeavour is to bring out the following:-

- a) Differences between Indian road conditions from that in the developed world
- b) Driver training methods in India
- c) Role of simulators in the training of drivers
- d) Importance of trainers, instructors and refresher training
- e) Training philosophy for operators and drivers of equipment
- f) Initiating an India specific heavy vehicle driver training regime

The author visited several private and state run driver training facilities in Karnataka, Tamil Nadu and Maharashtra as well as the Central Institute of Road Transport (CIRT), Pune as part of his doctoral research and has referred to several journals and research papers related to the specific training designs and effectiveness of driver training in this paper. Environmental aspects of driver training in India create unique challenges for designing effective training programs for heavy vehicle drivers and these are discussed and analysed in this paper.

**Keywords:** Road Accidents, Private and state run drive, Driver training in India, Vehicle drivers

### Introduction

India as a Nation has the dubious distinction for belonging to those nations where maximum number of road accidents occurs as a ratio of the number of vehicles present in the last several years (WHO data on Road Safety, 2001-13). Consequently, the number of human deaths, injuries also is higher. The statistics available are alarming and in all travel advisories of developed nations, the road conditions and the uncertainty of road safety are mentioned for travellers going to India.

Several studies have been conducted by the Central Institute of Road Transport, Pune (CIRT) on the road conditions and road safety in Indian urban, rural and highway roads. Transport Research Wing (TRW) of the Ministry of Surface Transport annually releases statistical data on road accidents as well as comparative analysis vis a vis previous years. It is noteworthy that several contributory factors from a varied set of sources cause the road safety issues in India in addition to the road conditions. The nature of these challenges may be technical, social, socio-psychological, infrastructure related, policy related and finance related. However, human error being responsible for over 78% (TRW data, Ministry of Road Transport 2001-13) of the road accidents in India, driver training becomes a focus area in addressing the road safety issue. This paper examines each issue and concentrates on the general direction of training required for Indian heavy vehicle drivers.

### Driving Environment in India: The Everyday Scene in India

The researcher has travelled across 14 states of India and has travelled in the European Union visiting 6 EU nations. Apart from the poor state of the usable roads and poor quality of maintenance, there are several factors, which characterise the Indian traffic conditions. Each of these factors contributes to the increase in the number of road accidents in India. The researcher, over a period of several years, could make a list of the peculiar and India specific road conditions as under

- a) **Presence of pedestrians and animals on the motor able part of the roads.** This can be observed in most Tier 1,2,3 cities as well as in the rural areas. Few parts of Metro city roads are free from cattle not because of any Govt or civic action but because of the absence of cattle in those areas of the cities.
- b) **Very high percentage share of two wheelers** as part of all motor vehicles on the roads. In fact it is between 73-79% according to the Govt of India State Road Authority published data in the past 10 years.
- c) **Narrow roads** even among those, which have been built recently, and those which are under planning. That is, civic authorities for various reasons including such like difficulty in land acquisition, lack of sufficient funds and poor perspective planning allow new but narrow roads to be built which start creating traffic issues from day 1 of operation.
- d) **Non co-ordination between various civic agencies**, which have a stake in maintaining a good road. E.g., Sewerage board, City /town corporation/authority, Electricity board, cable laying authorities, repair/maintenance contractors, property owners/tenants, road transport authorities, traffic police. Example: A recently built road is dug up for laying cables/water pipe lines/sewerage lines and the pits dug may not be refilled and repaired or the repaired pits result in depressions or undulations on that road.
- e) **Licencing of new vehicles without consideration to the road capacities** and availability of space for usage and parking. Municipal authorities, which build and maintain the roads may not conduct surveys and studies to determine chronic traffic jam sites, total number of vehicles in the town/city, volume of weekend/holiday traffic patterns. Further, officially, the people are not aware about whether the Road Transport Offices (RTO) allows new vehicle registrations based on the road space available or whether the RTO formally collects information from vehicle buyers as to where the vehicle will be used mostly in its lifetime.
- f) **Poor road maintenance and repair.** Normally, road resurfacing contracts are awarded once in 3-4 years in most cities and towns and patch work and repairs of seasonal damage are supposed to be done continuously. However, pot holes, pits are left without repairs for very long for various reasons including lack of funds, difference of opinions in civic bodies or considered as low priority work by municipal authorities.
- g) **Non segregation of vehicular traffic** based on speed of movement leading to frequent traffic congestions and jams. As mentioned earlier, two wheelers being the majority are also involved in a large percentage of road accidents. Over 50% of road accidents involve two wheelers in India directly or indirectly (TRW data 2001-13) Still, very few cities or towns have separate two wheeler spaces where larger vehicles may not ply.
- h) **Poor vehicle maintenance by Govt owned public transport vehicles** and Govt departmental vehicles, evident by the number of breakdowns, repairs and stoppages experienced by the users. In India, Govt buses carry more than 4.5 million passengers every day ( Ministry of Road Transport) Breakdowns and unintended stoppages due to technical reasons by these cause road blocks and bottle necks which may lead to local accidents in addition to inconvenience to a large number of passengers.
- i) **Lack of designated space for boarding and alighting** of public transport passengers leading to frequent blockages in traffic. It is common on Indian roads to see Govt or private buses (public transport) stopping suddenly on the road at places where there are no authorised bus stops. These stops lead to traffic congestion, local road safety issues.

- j) **Unregulated or illegal modifications made on load carrier vehicles** leading to increased width /length/height of the vehicle. Presence of rods and hooks, etc. protruding from vehicles. Example: The normal width of a truck which is not a licenced special purpose vehicle is 9' or up to 110 ". However, in most places, it is common to see modified trucks which are more than 9.5-10' wide being used for carrying tractors from the factory, two wheelers from the factory etc. Further, in the relevant season, trucks and other commercial vehicles carry loads of tall grass, sugar cane and other farm produce, which protrudes outside the body of the vehicle to such an extent that the entire road width is consumed by this one vehicle. In this context, agricultural tractors with loaded trailers are the most dangerous vehicles plying on the road. It is normal to see long steel rods used for building construction carried on commercial vehicles, which are less than half the length of those rods with or without a red rag tied to warn the public that the load projects outside the vehicle space. Sometimes, these agri-trailers are loaded with people attending a marriage or a family function. It may be of interest to the reader that these agri-tractor-trailers are highly accident prone and scores of people die every year.
- k) **Lack of traffic policing at key locations.** Due to the chronic shortage of manpower in the Indian police forces, many crucial road junctions function without the presence of traffic police. These unmanned junctions lead to chaotic traffic conditions, altercations, road safety issues. As per the Govt released data in Jul 2014, Police-public ratio in India is 136.42 per one lakh population. New Delhi: The sanctioned and actual strength of police personnel at all-India level per one lakh population is 181.47 and 136.42 respectively. This was stated by the concerned minister in the Lok Sabha on 14 Jul 2014.
- l) **Presence of 3 or more passengers on two wheelers meant for 2 adults** or overloading. This is a common practice in India especially among the college and school going youth. In most places, the traffic police ignore these youngsters. However, it must be noted that the driver's control is restricted on these vehicles due to lack of sitting space and or elbow room for maneuvering.
- m) **Absence of discipline among the public** leading to crowding on the road to look at an accident site or to witness an altercation between two groups of people etc. This is unique to Indian road conditions. Wherever there is a road accident or quarrel between two or a groups of drivers is going on, public stand there watching the scene and cause traffic blockage. Since the number of policemen available on the scene is minimal, or no one takes initiative to clear the road for traffic flow, this results in long and avoidable traffic jam.
- n) **Processions and marches on normal usable roads.** Again, it is unique to Indian roads that regular roads are used by members of the public to hold religious/political/other processions, group marches, even group dances etc leading to traffic jams. Many a times these events lead to road rage incidents and road accidents.
- o) **Illegal construction of temporary or permanent structures on the road and pavements.** These lead to direct stoppage of traffic or spilling of pedestrians on to the road due to lack of space on the pavement. During the festival season, roads are adorned with temporary arches, pillars, floral arrangements etc which cause traffic blockages.
- p) **Ineffective use or absence of remotely controlled traffic view CCTV cameras.** One of the most effective way of monitoring, channelizing and controlling traffic the World over is by the effective use of CCTV cameras with one or a set of control rooms monitoring the video feed and recording it. In India, though in all major cities, the traffic control rooms and video cameras are present, instant dividends in the form of breaking of traffic jams by diverting traffic, identifying traffic rules violators and catching them, recording of accidents and incidents etc are minimal. CCTV cameras in Bangalore City, New Delhi, Pune, Chennai and few other cities do result in traffic violation fines by the police but do not make any substantial difference to the quality of traffic management such as giving directions to individual drivers, diverting traffic to avoid traffic jams, warning of road blockages to the oncoming vehicles etc.

The above are a glimpse of the problems faced in India and are by no means exhaustive. In such conditions, the public transport drivers have to ply their vehicle and at the same time maintain the time schedule given to them. Driver of the public transport vehicle like a passenger coach does not have control over any of the above problems but has to live with them and learn to operate the vehicle

in such conditions. Discussions and analysis of the above problems will not be done in this paper as it is beyond the purview of the subject under consideration.

Hence, the focus will be on the driver training to drive in Indian road conditions and prevention and reduction of accidents by improving the training methods for the drivers.

### **Review of Training Facilities in India for Heavy Vehicle Drivers including Bus Drivers**

Several Indian state Govt transport undertakings and departments boast elaborate driver training facilities; these are for the bus drivers. However, very few officially recognized training schools are available for truck and multi axle truck driver training. Vehicle manufacturing companies like the TATA, Ashok Leyland, VOLVO and Bharat Benz have their driver training centres and fleet operators buying new vehicles from these manufacturers send their trainee drivers to these facilities. *Further, the quality of the initial training for the truck drivers while starting to learn truck driving for the first time is very much unorganised in India and the onus is on the applicant to prove that he can drive a truck to join an operator as a driver. It is worth mentioning that the initial training for truck drivers in India does not follow a standardised course design..*

The researcher has visited 3 privately run heavy vehicle driving training centres and four state run driving training centres for bus drivers. There is absolutely no co-ordination or uniformity in the heavy vehicle driver training in India in the lines of the US Federal Motor Carrier Safety Administration (FMCSA) or the Professional Truck Driving Institute (PTDI), both of which work in co-ordination to standardise training design for bus and truck drivers. In view of the above, here we are considering the available heavy vehicle driving training facilities for bus drivers.

Traditional training methods for bus driving involve a few theoretical classes about the vehicle structure and mechanisms as well as practical classes with actual vehicle driving. Since the trainees are normally literate and can speak in regional languages, the classes are conducted in regional languages and the instructions use translated technical terminologies which often are inadequate to explain the complexities if any in spares and assemblies of the vehicle. Further, many of the terminologies will be distorted words of the original English technical terms. This adds to the problems by confusing the trainees as the same words refer to different parts of similar nature located at different places on the vehicle.

- i. Language** The basic problem is the lack of knowledge of English language and the inadequacy of the translators to effectively use the available words in the vernacular to convey the meaning of the technical terms. As it normally goes, these driver training modules end with an examination where in the candidates are evaluated based on their ability to answer questions in writing as well as in a viva voce.
- ii. Practical training.** Practical training involves around 20-30 sessions of driving on regular road under supervision normally on un-modified buses without dual control for the instructor and the trainee. There are very few training facilities like the Ashok Leyland Driver Training Centre (ALDTS), Namakkal, Tamil Nadu and few other state Govt transport-training centres which do have dual control vehicles but these are negligible in number. Most of the practical training in India takes place On The Job for less than 20 hours in the presence of the instructor 3-10 other trainees. The trainees drive for 10-15 hours on training tracks wherever present and in the remaining few hours, they drive on actual roads.
- iii. Use of simulators** Researcher observed that though several state owned transport undertakings have driving simulators, there is a strong resistance to regularly use these simulators as part of driver training. The possible reasons for this aversion to the use of simulators may be,
  - a) Lack of knowledge on equipment
  - b) Fear of technology
  - c) Language issues
  - d) Simulator operation and maintenance issues
- iv Cost of training.** It is unfortunate and surprising to see in India that the driver trainee candidates pay full or part of the training cost on their own. Few vocational training institutes bear the training costs partly; however, in most cases the trainees bear the cost.

### Scope of this Paper

This paper endeavours to bring into light as to how the US and European Union road transport authorities address the issue of heavy vehicle driver training vis a vis the Indian scene. The element of India specific road conditions play a role in necessitating modifications in the driver training programs conducted in India. Further, these training programs if done, keeping in mind the Indian road conditions in a dynamic manner, it may lead to better road safety on the Indian roads. While addressing the above issue, the aspects of trainee characteristics, simulator based driver training, importance of trainers and instructors and refresher training are highlighted.

### Limitations of this Study

This study is broadly limited to heavy vehicle driver training for commercial operators, specifically for bus and truck driving. The researcher has travelled in the four states of Karnataka, Tamilnadu, Andhrapradesh and Maharashtra for collecting primary information on training facilities for driver training. Hence, the primary references are limited to those four states. Observations made by the researcher are personal ones over a period of several years where in, the same issues have caused the road safety problems repeatedly and have not been addressed by the authorities. After studying the training design of heavy vehicle driving at the EU and the USA, the researcher has given his recommendations for making the Indian heavy vehicle driver training effective.

### Analysing Driver Trainee Characteristics in India Vis A Vis The Usa Or Europe

The researcher made a comparative study of a typical Indian heavy vehicle driver trainee and his/her counterpart in the USA or Europe. The major factors, which are visible as differences, are discussed as under:-

- i. Basic education comparison.** Surprisingly, the basic education levels officially required to become a bus or truck driver in India or the USA or Europe are more or less equal. That is, the 10<sup>th</sup> standard or equivalent. However, there is a large disparity in the awareness levels between urban, semi-urban and rural drivers in India. That is, an Indian rural driver trainee who has passed 10<sup>th</sup> class in a rural school differs in quality as a candidate vis a vis an Indian urban or semi urban driver trainee who has passed 10<sup>th</sup> standard in an urban or semi urban school. Such a difference is not significant among the US and European driver trainees. (Bates,1999)
- ii. Addictions and Habits.** Through collection of primary data by the researcher on the personal habits of Indian trainees aged between 17-23 at two places and comparing them with the secondary data available on similar studies in the USA, it is observed that the drinking, smoking or drug abuse is at a higher level among the US and European driver trainees. Obesity, high blood pressure, alcohol, drug abuse and stress which are frequently diagnosed among the drivers (Federal Motor Carrier Safety Administration, 2003), Robert and York (2000). In India especially among the young raw trainees, the percentage observed is less than 10%. A total of 23 trainees were interviewed by the researcher for this purpose.
- iii. Language.** This is one of the major issues with the Indian driver trainees. It was observed by the researcher that even within the same state, the trainees belonging to different regions had different language abilities in English, Hindi and vernacular languages. For example, the ability of a driver trainee from Gulbarga district rural area, North Karnataka to understand written Kannada script is vastly different from another trainee from Mysore city. Such inter-se language ability disparity among trainees in the USA and the Europe is not even considered as a major problem (Stoohs et al, 1993). Further, in the state run training facilities where the researcher observed, rural driver trainees are not given any extra language training to understand the course contents better; it is up to the trainee to learn by himself.
- iv. Training with Technology.** This is another major area of disparity between the Indian and the US/European driver trainees. Indian trainees especially those from the rural and semi urban backgrounds have a visible aversion to technology aided training. They are not too comfortable in using computers, simulators and other aids, which are regularly in use in developed countries. It is pertinent here to mention that perhaps, if a pre training module on technology is conducted, the trainees may develop affinity towards technological advances in training facilities and may do better in the actual driver training which follows later.



### Overview of The US Heavy Vehicle Driver Training Programs

In the USA, there are several Govt and private organisations, which work with close co-ordination with the aim of standardising driver training. Federal Motor Carrier Safety Administration (FMCSA) , Transport Research Board (TRB), both Govt aided but non- governmental bodies and the Professional Truck Driving Institute (PTDI) work closely and sponsor researchers by eminent researchers, research groups from universities and other consultant organisations on road safety issues. Several studies funded by these organisations include those by Horn and Tardif (1999) on driver trainers, Dueker (1995) on driver training and Koster and Summerfield (2001) on continuous enhancement of driver training quality. The salient features of heavy vehicle driver training in the USA are listed as under:-

- i. **Training Period.** Normally the initial driver training for a US truck or bus driver varies from 100 hours to 175 hours and in some special situations, may exceed 200 hours. Whereas, in India, the training period is in most places, less than 50 hours (Dueker, 1995)
- ii. **Use of Driving Simulators.** Most Govt/NGO run or privately run heavy vehicle driver training facilities in the US have driving simulators which can train a single driver or simultaneously train 4-10 drivers at once. More than 40% of the training period may be spent by the trainee drivers on these simulators. Few types of driving simulators in use are listed as under (Pierowicz, 2002):
  - a) Open loop video simulator – Doron L-300
  - b) A low end simulator – Doron L 301 VMT- Vehicle Maneuvering Trainer and
  - c) Mid range simulator – FAAC MB 2000
- iii. **Integrating Driver Training with Training on First Aid, Accident Procedures and Wellness Measures.** Most US heavy vehicle driver training modules include peripheral training integrated into the core driver training which enables the driver to learn about giving primary medical aid, actions to be taken in road safety issues including accidents/incidents and personal wellness training where the driver trainees are instructed on personal health care to become successful in their profession as drivers (Korelitz et al, 1993)
- iv. **Cost of training.** Cost of training in most heavy vehicle driver training facilities in the US is directly or indirectly borne by the Govt or the fleet owner agency, which sponsors the training. Individual trainees normally do not bear the training expenses except in those cases where they approach the training facility for specialised training on specific vehicle/equipment for sports/hobby purposes.

### Features of Simulator Based Training for Heavy Vehicle Drivers Vis A Vis Conventional Methods

As per Vance et al (2002), in a sponsored research of the FMCSA, using simulators for driver training has generally, the following dividends,

- a) **Creation of dangerous situations without putting drivers and equipment at risk.** To create the same kind of dangerous situation on the road will be impossible on a regular vehicle and the physical and financial risk involved would be enormous.
- b) **Exposure to high-risk situations** such as tyre blowouts, brake failures and hazardous road or weather conditions can be simulated during the training. The trainees can be made to practice the actions to be taken in these situations or separate tests can be given on such situations.
- c) **Helping drivers to develop reflexive responses** to infrequently encountered events. This is one of the major advantages of training on simulators. The trainee can practice reversing the vehicle in a tight corner or driving uphill on a steep gradient or stopping on a traffic signal located in an up gradient or experience the vehicle airbag in action etc.
- d) **Tasks and Sub tasks.** Simulators have the advantage of breaking each task into sub tasks and then allowing the drivers to learn their responses part by part. The trainee can learn only changing of gears or pressing of clutch while all other functions of the vehicle are taking place apparently normally. The trainee can learn executing a difficult turn part by part.

**e) Incremental learning with increasing degree of difficulty in driving tasks.** Based on the training module design, the instructor can incrementally increase the degree of difficulty as the training progresses.

**f) Evaluation of driver quality.** In addition, simulators can be used for evaluation of driver quality for both the trainees and experienced drivers. Simulators can generate data on the learner's driving duration in detail to the extent that the course corrections, the variation from the normal are given to the instructor to correct for the next session (Brock et al, 2001)

As argued by Wendy Lewitt on Fleet Owner.Com (2010), road vehicle control technology is advancing rapidly in the use of computer assisted navigation, trouble shooting and assistance. On board video monitors provide position data, safety data including whether the passengers have secured their seat belts, whether the doors are closed within the vehicle and the nature of turns in the next kilometre, vehicles coming in the opposite direction, speed and position of the vehicles immediately ahead and behind etc. That is, if the driver is not conversant with the use of such controls, he will definitely be a hazard for others and himself on the future roads.

India, as a fast growing developing Nation with 1.2 billion population is in the cusp of a high growth path in line with the demands of the huge market for goods and services. As per the 11<sup>th</sup> and the 12<sup>th</sup> Five Year Plans published by the Govt of India, the envisaged investments for infrastructure including road infrastructure is over US\$ 240 billion, which now seems very conservative. While the new highways are built, new buses from Volvo, Mercedes Benz and M.A.N. are in competition to woo the state Govts to buy their products for public transport. All these buses as per the European Union Standards are equipped with the GPS, Driver Tracker, Safety Net, Accident Prevention Radars etc. However, such equipment will become utterly useless if the road infrastructure is not equipped with the sensors, warning beacons and most importantly if the drivers are not trained to use these equipment. One may argue whether we need these 'expensive' equipments for the Indian roads? It is reiterated that we do need these equipment more than ever on the Indian roads because our driving conditions are far more complex and uncertain than the European roads leading to large number of accidents.

In a report on 'Simulator Based Training for Bus Drivers – Current Developments in Europe' (Ulrich Gruneberg et al, 2011) conducted at the Leonardo Da Vinci Partnership, Dortmund, Germany, they have emphasised on the updation of the simulator constantly and the feedback of the trainees as well as the user organisation on the performance of the drivers. European Union countries have already formulated standards and stipulations for Driver Training as per EU Directive 2003/59/EC and the Simulator Training Process under Directive 2003/59/EU.

Though, in India, the infrastructure, societal mindset and literacy levels limit the rate of technological advancement as regards to the stringency of road safety applications, while we are on the move to build infrastructure, it is better to adapt to the best of the systems available in the world. European Union boasts of the best managed and most complex road network in the world connecting the 11 original EU countries and 6 other surrounding countries. All these countries are benefiting by having established and commonly accepted standards of driver training and evaluation system.

### **Role of Trainers and Instructors in Driving Training**

It is to be noted that the FMCSA, PTDI at the USA and the European Union (EU) maintain qualitative standards for appointing trainers and instructors for conducting driving training. Briefly, in addition to the general organizational rules and regulations pertaining to employee behaviour, employee discipline and general eligibility criteria, the qualitative standards specific to driver trainers and instructors are listed as below, (Wiggins, D 1990)

**a) Coaching Ability.** Trainers and instructors for driving training deal with mental, physical and psycho-motor skills of the trainees where communicating observational feedback frequently and taking corrective measures as well as paying individual attention to each trainee plays an important role in making the training program effective. Hence, the trainers and instructors are actually performing their roles as coaches specifically in driving training. (Dueker, R, 1995)

- b) Experience.** The trainers should have vehicle type driving experience for a minimum number of years and the instructor must have relevant qualifications such as a diploma/degree in automobile/mechanical engineering. The eligibility criteria vary among organisations.
- c) Communication.** The trainers and instructors are selected based on their ability to communicate in the language that most trainees understand as well as the ability to effectively impart knowledge to the trainees.
- d) Work Ethics.** The self-discipline and work ethics of trainers and instructors need to be of a high order or of an exemplary standard.
- e) Feedback System.** Driving training being a 'do and learn' mode of training for most part of the training program, student feedback needs to be actioned upon without any lag. The responsiveness of the concerned trainer or instructor is considered an important qualitative requirement to continue in the job.(Wiggins, D., 1990)

The above requirements are by no means exhaustive and are listed to give a glimpse of the basic trainer, instructor job requirements.

In India, It was observed by the researcher in India at the KSRTC training centres in Karnataka State that normally, experienced drivers become driving instructors. Though many of them fulfil the above basic requirements, very few of them formally undergo training in coaching skills, effective communication and internalize the importance of taking action on student feedback. When the researcher spoke with the trainees, it was observed that there would be one or two instructor-trainers in each training centre who become known for their training ability among the trainees. That is, structured or institutionalized measures to separately train the trainers and instructors, training them in accessory skills like effective communication, coaching etc is hardly found. Surprisingly, private driving training institute like the Ashok Leyland Driver Training Institute (ASDTI), Namakkal has taken such measures to improve the standard of training instructors. However, these measures taken depend on the involvement of the Director/Principal of the training centre and not as part of an SOP or regulation. Strong regulatory framework needs to be prepared in this area.

### **Importance of Refresher Training**

In the area of heavy vehicle driving, refresher training is extremely important. The major reasons for the need of giving refresher training to drivers who already are experienced in driving are listed as below.(Horn, B.E., and Tardif 1999)

- a) Changes in the Environment.** Changes in the road conditions, such as vehicle density, changes in the ratio of vehicle type on roads such as percentage share of two wheelers /four wheelers/heavy vehicles in the traffic, introduction of new traffic rules and regulations, changes in the perception of users entails refresher training.
- b) Changes in Technology.** Changing technology such as use of air conditioners, technical changes in bus/truck engine, body and controls as well as changes in the operational aspects for the driver entails refresher training.
- c) Change in vehicle type under use within the organization.** If the employer organization scraps old vehicles and buys new type of vehicles, it entails refresher training even if there are no major changes in the vehicle operational characteristics. Driving skills are also dependent on the feel of the vehicle as experienced by the drivers.
- d) Periodical refresher training with evaluation.** It is a necessity in vehicle fleet organisations that drivers are periodically given refresher training and evaluated for their quality of skills, knowledge and ability as intended. This differentiates the good, normal and bad drivers such that the overall driving quality in the organization is continuously improved.

In India, the state transport corporations have refresher training for experienced drivers. The duration of refresher training courses vary from 3 days to 14 days depending upon the profile of the trainees or the segregation of the drivers made for that specific training program.



### **Making Indian Heavy Vehicle Driver Training Programs More Effective**

At the outset, there are some basic requirements, which need to be fulfilled. This is to ensure that there is a conducive environment for effectively implementing a driver-training program for the commercial and public transport. The researcher, after studying current Indian facilities for heavy vehicle driving and similar facilities available in the Europe and the USA has the following to recommend:-

- 1) Educational qualification of aspirants** to become eligible for selection as a bus driver trainee must not be less than Intermediate or 12<sup>th</sup> Standard. A vehicle driver today works with more technologically oriented atmosphere. There is more electronics and computer related gadgets involved than ever before. Drivers need to develop aptitude for technical learning before entering the driver training programmes.
- 2) Vernacular Training Manuals.** Need of having Driver Manuals made by the bus manufacturer in the language they understand. India is home to over 800 languages and are in use actively. Bus drivers come from all parts of India and speak, write and listen differently. Buses being technical equipments, the manufacturers tend to design their manuals and necessary instructions in English or Hindi as they deem fit. In many instances, the drivers learn the contents of the manual by rote to pass examination and then that knowledge fades away. Manufacturers need to become sensitive to vernacular languages and make driver manuals in local languages.
- 3) Discipline and Wellness.** Bus drivers need specific training in ensuring disciplined way of living as a professional. For example, they stipulate in the field of Civil Aviation that there should be a gap of 8 hours between the bottles to throttle. That is, if the pilot consumes liquor, he will not be allowed to fly the aircraft for 8 hours after drinking liquor. As a society, we must accord similar importance to vehicle drivers as we give to aircraft pilots. Any mishap causes loss of life in both cases. (Stoohs, R., et al 1993). A few seconds of inattention by a bus driver to attend a mobile phone call while driving may result in death and injury to scores of people for whose safety and security the driver is wholly responsible. Developing professional discipline is very important.
- 4) Behavioural Training and People Skills:** This aspect is extremely important for those drivers who are involved in carrying passengers on school buses, public service transportation. However, not a core area, this aspect is vital to maintain the image and reputation of the organisation in the society. Driver training modules are the best opportunities to include People Skills and Behavioural Training to suitably interact with schoolchildren, passengers such that as customers they can enjoy the ride in the vehicle safely with confidence in the skills, knowledge and abilities of the driver providing them the service.
- 5) Defeating the Fear for Technology.** Today, everyone uses mobile phones, some of use advanced mobile phones with more applications. Even bus drivers use mobile phones. The technology used in these mobile phones is similar if not more advanced than that of a driving simulator. However, it is seen among the driving community in India that simulator training is viewed with scepticism as something beyond their capability. Transport authorities across India must sensitise the public about the effective use of simulators for driver training.
- 6) Standardisation of Training across India.** Before embarking on the driver training programmes, State Governments must interact and standardise the traffic rules and training requirements for bus drivers. To make the issue far reaching, school syllabus must include data on traffic rules and road safety.
- 7) Manufacturer Provided Training.** Before entering into contracts to purchase buses, the buying organisations must make it a part of the deal to train the drivers through the manufacturer with simulators encoded with data of that particular model of vehicle under consideration.
- 8) Driving as a Life Skill.** All modern day humans, some time in their life learn to drive motor vehicles. Driving a vehicle is very much a life skill unless one's health condition prevents the person from learning. Govt and civic organisations must initiate action to include traffic rules, road safety awareness, basics of vehicle driving and maintenance as part of school syllabi such that by the time

the children reach the age of 16-18, they are aware of the basics. This will go a long way in preparing the future drivers to learn driver training effectively.

**9) Driver Training Cost.** It is evident from the earlier paragraphs of this paper that in India, the trainee drivers are burdened to pay for their training. It is necessary that either the Govt or civic organisations may create a training fund under the relevant ministry to fund all driver-training programs. This will go a long way in ensuring standardisation of training and avoidance of shortcuts in training to save money by the candidates.

### **Identifying Objectives for Driver Training**

Once we have a conducive environment for driver training as mentioned above, the training design for bus drivers may be taken up with the following objectives( Federal Highway Administration, 1985):-

- a) Core Training.** The objective of the bus driver training will be to make him able to operate, manoeuvre the bus safely in the prevalent traffic conditions without difficulty keeping the passengers, the vehicle and himself safe.
- b) Trouble Shooting.** The driver should be able to address minor technical problems at his level if the situation demands.
- c) Communication.** The driver should be able to communicate to the concerned personnel in the relevant technical jargon to address the problem if it is beyond his level.
- d) People Skills for Public Transport Driving.** The driver should be comfortable in interacting with people normally without being perturbed by noise or paying attention to his driving task simultaneously even if someone is speaking to him.
- e) First Aid Training.** The driver should be able to give first aid if there is a need (Roberts, S 2000).
- f) Accident Procedures.** The driver should be able to assist civil authorities if there is a road accident not involving his own vehicle and his assistance is demanded
- g) Technology Awareness.** The driver should be able to understand, operate and use all modern gadgets present in the bus to enable driving, communication, minor troubleshooting and preventive maintenance schedules. The spirit of training lies in the trainee being convinced of its use in day-to-day application. Equipment such as the simulator must not become an ornamental device to be seen only during the initial training. Simulators must have training modules for refresher training after breaks for the driver.

### **Conclusion**

This paper is a working paper in the path to develop a suitable and advanced training regime for bus drivers in India. Befriending the technology and becoming part of the technological processes, which result in saving of human lives and comfort, are common aims of all societies. Due to developmental lags, Indian transport system and road system have lagged behind the developed countries causing more accidents and damage. Adapting to new systems of driver training may result in lesser road accidents and more safety to pedestrians as well as vehicle users.

If we compare the educational level of bus drivers in the developed world and ours, there is not much of a difference. The difference is in attitude and the language in use. As regards to the attitude, due to the lack of strict control and implementation of existing road safety and vehicle operating rules in India traditionally, what today's drivers have seen since their child hood as normalcy in India is the chaotic situation of traffic. The driver will never consider a minor flouting of traffic rules as a serious issue unless a mishap happens in front of his eyes.

As regards to the skill levels, Indian drivers if trained in the language they understand, are equal if not better in adapting to new traffic situations as compared to the drivers from developed countries. Since the operating instructions, manuals and maintenance schedules are printed in English by the manufacturer, our bus drivers tend to ignore or even hesitate in following the written instructions. A drive must be initiated by the Govt of India to translate the relevant literature into all local languages such that the drivers understand them completely.

In this age of cyber revolution, it is not difficult to design technology oriented or simulator based driver-training programs in local languages as well. Training in all vocations including for drivers, especially for the public bus driver may be made as a part of the infrastructure development issue by the Govt. Heavy vehicle driver training if executed in an effective manner in India may go a long way in saving of lives, property, time and national assets by avoiding occurrence of road accidents.

## **References**

1. Report on 'Simulator Based Training for Bus Drivers- Current Developments in Europe-2011 by Ulrich Gruneberg, Gerd Helmchen, Britta Lang and Antonius Schroder of Leonardo Da Vinci Partnership, Dortmund, Germany
2. Driver Training and Endorsement Strategy- Discussion Paper by CFA, Transportation Research Board, 2009
3. Information from Govt of India, Ministry of Information and Broadcasting, 2011
4. 21<sup>st</sup> Century Driver Training- Article by Wendy Lewitt- Editorial Director of 'Fleet Owner, January 2006
5. [www. Ptdi.org/schools.schools.htm](http://www.ptdi.org/schools.schools.htm)> PTDI certified Courses, accessed on 20 Aug 2015, 1500H
6. <http://savelifefoundation.org>, accessed on 20 Aug 2015, 1600H
7. Abry .G "Tuning Driver Training", Transport Topics, March 9, 1998
8. Batts L. R. " Why Entry Level Driver Training is Important to Private Carriers", Business Trucking, April 1999
9. Beilock R., Capelle, R.B., and Page E., " Speed and training Factors Associated with Heavy Truck Accidents " , Transportation Quarterly, Vol. 43(4) pp. 571-589
10. Brock, J.F., et al TCRP Report 72: Simulators and Bus Safety: Guidelines for Acquiring and Using Transit Bus Operator Driving Simulators. Transportation Research Board, National Research Council, Washington D C., 2001
11. Dueker R L., Assessing the Adequacy of Commercial Motor Vehicle Driver Training: Final Report. Volume III: Findings, Conclusions and Recommendations. U.S. DOT/Federal Highway Administration, Office of Motor Carriers, Washington, D.C., 1995
12. Horn, B.E., and Tardif. L., "Licensing and Training of Truck Drivers: New and Continuing Challenges". Journal of International Association of Traffic and Safety Services, Vol.23(1), 1999, PP.16-21
13. Korelitz J et al "Health Habits and Risk Factors among Truck Drivers Visiting a Health Booth during a Truck Trade Show". American Journal of Health Promotion. Vol.8(2), 1993, pp 16-21
14. Koster, J and Summerfield, S. "The Role of Inclement Weather in Heavy Truck Accident Causation: Implications for Driver Training, LCVs and Safety Programs." Canadian Transportation Research Forum, Proceedings of the 36<sup>th</sup> Annual Conference. Vancouver, British Columbia, May 6-9, 2001, pp. 896-912
15. Pierowicz, J., Robin, J., GAwron. V., Watson, G., Nestor, B and Murphee, W. Commercial Truck Simulators Re- Assessment and Evaluation. U.S. DOT/FMCSA Publication No FMCSA – RT-03-008, 2002
16. Roberts, S and York, J. Design, Development and Evaluation of Driver Wellness Programs. Prepared for the FMSCA, Washington, D.C. 2000
17. Stoohs, R., Guilleminault, C., and Dement, W. "Sleep Apnea and Hypertension in Commercial Truck Drivers". Sleep. Vol. 16(8), 1993, pp. S11-S14
18. Vance, R.J., El-Gindy, M., Hoskins, A.H., Hiller, N.J., and Tallon , R..A. Simulator Training Evaluation Program. Pennsylvania Department of Transportation Report No. PA-2002-014-04 (96). 2002.
19. Wiggins, D., "Who is Responsible for Training? Hey, It's Your Liability!", Commercial Carrier Journal . Dec 1990, pp- 65-68

Chart 1

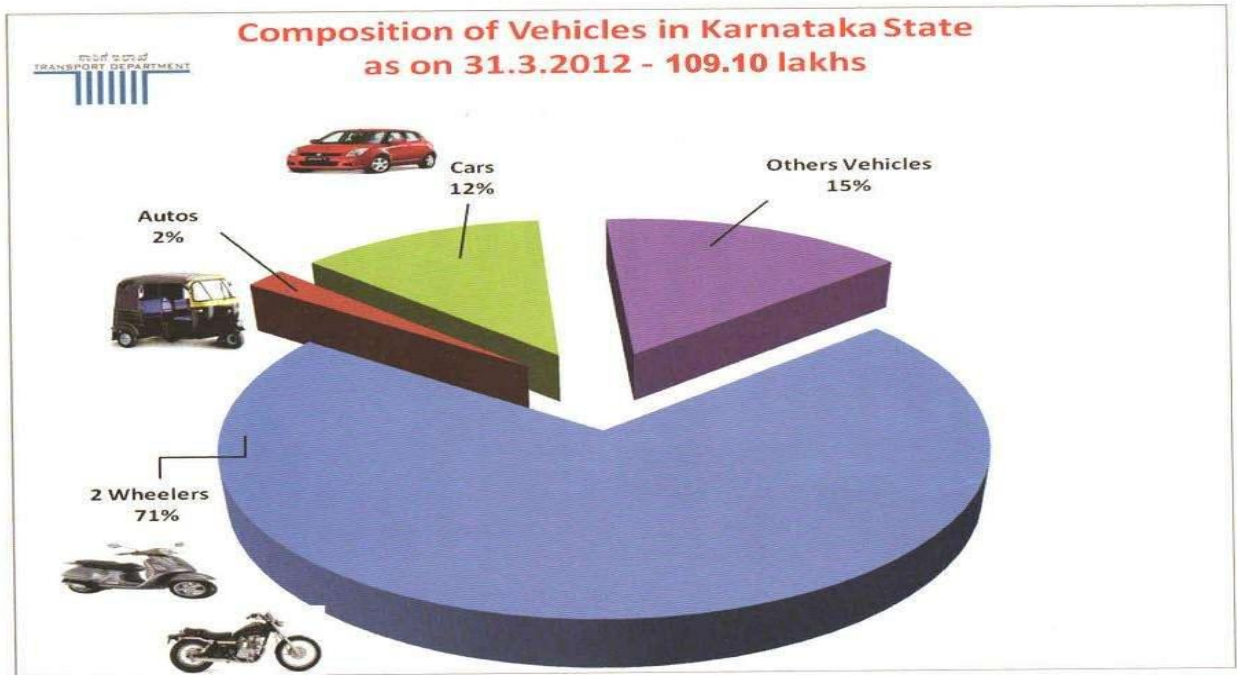


Chart 2

