

**Third Regional Conference organized by International
Road Federation (IRF) on 3rd & 4th October 2008 at India
Habitat Centre, New Delhi.**

" ROAD SAFETY – CONTRACTUAL ISSUES & RESPONSIBILITIES "

By

**J GANGULY
Executive Vice President
Larsen & Toubro Limited
ECC Division
Manapakkam
Chennai 600 089**





ROAD SAFETY – CONTRACTUAL ISSUES & RESPONSIBILITIES

Contents

- a. Introduction

- b. Standards
 - Existing
 - Improved Standards

- c. Reviews & Audits
 - Engineering
 - Construction
 - Operation

- d. Safety Certification & Clearance
 - User
 - Locals



INTRODUCTION

Keeping our Roads as Safe as possible while maintaining its major quality – MOBILITY - is the main challenge for ROAD POLICY MAKERS. It is well known that the main stakeholders driving any Road Traffic System or Policy are (a) Road Users (2) Road Infrastructure Providers including Maintenance Providers (3) Vehicle Manufacturers. The interface between the three in terms of Road Safety is almost seamless but their operations are quite independent and can be compared to 3 points of a triangle locked together to inscribe the much needed safe mobility in transportation.

Substantial improvements in Road Safety can be realized only when all the components of the RTS are addressed. In other words, a holistic approach to the interactive triangle of Road User, Vehicle and Road Infrastructure is needed.

While we have 3 major aspects, our context today for this seminar is however limited to Contractual Issues and Responsibilities for providing Road Infrastructure and its Maintenance.



Ever since I have been reflecting on this topic, I have been trying to recall Contractual Issues resulting from non-compliance of Safety Standards but to the best of my knowledge found that there were not any. Could it be that Developers, Designers and Contractors who are in their own right Users of Roads and Highways are fully compliant or is it that the onus lies elsewhere? As of now, I believe, it is the latter, supported by a system which practically has no checks. This is explained further.

The elements of Road Safety in accordance with prevailing standards are generally related closely to the parameters of design and are therefore closely built into the design. However, all that finally emerges in the design do not fully reflect the norms as, at some stage in the process of approval / review, the norms are compromised because of either limitation of space or even minimum needs are deferred to reduce the estimates for the sake of matching availability of funds. Hardly any thought is given to future growth and needs thereof. There are number of examples of compromise of Safety parameters to avoid cumbersome land acquisition process and its attendant cost or eliminating a crossover or underpass to save project cost. Till of late, designs and detail engineering was the responsibility of



the Owner / Implementing Agency and therefore such omissions were never contentious nor precipitated to contractual issues. However, in the present BOT route, the responsibility of Design has shifted to the Concessionaire or a Turnkey Contractor but Contractual issues resulting from compromises or lowering of Road Safety Standards still do not surface as most of such compromises originate mainly from Unplanned Land Acquisition issues or limitation of scope of work. This only suggests that Road Safety is not an uncompromising priority in the face of other hurdles. Even then, I am not aware of any serious contractual issue arising out of inadequate Road Safety. This does not however mean that there are no issues and it is time not only bring out the issues but also assign responsibilities for compliance. The issues in Road Safety can be divided under 3 Heads, viz.

- a. Standards
- b. Review and Responsibilities
- c. Safety Certification and Clearance



STANDARDS

The parameters considered in geometric design needs to be reviewed and brought at par with the safety needs of the present times. Examples of such needs are exemplified below for some clarity. However, to begin with irrespective of the extent of Upgradation of Standards, even for present standards there should be no compromise to the standards to accommodate costs and convenience. In other words exception to Standards which will compromise with Safety must be prohibited.

Standards are sometimes compromised to meet the demands of the locals eg. providing additional median opening. While providing such opening, particularly for highways with uncontrolled access, we have to provide adequate width to ensure proper utilization of the opening as well as provision of an Underpass in the future. Even if we decide to provide a Median Opening, adequate provision of local widening, Road Sign or even traffic calming device needs to be provided for the Safety of not only Road Users but also the locals or unprotected users.



Road Safety is highly compromised with inadequate Maintenance – Metal Crash Barriers removed – Road Signs even damaged or stolen and not replaced, Unsafe surface and damaged berms and shoulders. Such blatant damage to Public Property on one hand and an indifferent attitude towards Maintenance has to be legally and contractually mitigated.

Any Highway with 6 Lane (Dual -3) which affords lane driving has to be Access controlled. Otherwise the benefit of 6 laning is lost due to slowing down of speeds (100 kmph – 70 kmph) as well as the increased risk of Accidents – Example of Ahmedabad – Vadodara Expressway.

Use of Rumble Strips at crucial areas and extensive Road Signs to be introduced to provide user friendly facilities and of course a forgiving road.

In the Indian context, the use of slow moving transport system will continue to be prevalent. Their segregation from fast traffic (>80 kmph) has to be done to prevent accidents and for better flow of traffic and prevention of accidents.



While Standards need upgradation to enhance the level of Road Safety as mobility increases Designers and Engineers could reflect on the need to provide a “Forgiving Road”, a facility which will pardon some errors of the Road User. Rumlbers strips, flatter embankment slopes, turfed landscaping, open spaces at the sides etc., could help in avoiding the inevitable. This applies even more seriously to 2 lane highways with undivided carriageway and for non-access controlled roads. There is a need to think beyond the standards if we have to cope with the needs of present day growth in traffic.

In the Urban context, the concept of shared space may be unavoidable but user awareness for use of shared space has to be done such that concept is understood. While traffic jams have to be eliminated, we have to reconcile ourselves to move at lower speeds without being ruffled for being late to reach our destination.

REVIEW & AUDITS

In the Conventional Method of Contracting, the onus of Design remains with the Owner and hence any omission in the Design with respect to Road Safety is never dealt as a Contractual Issue. However with road



work now being executed under the BOT model and further refined by the DBFO model, the onus of Design and Detail Engineering lies with the Concessionaire. In the BOT model, the concept is normally provided in the DPR which is a part of Concession Agreement, and therefore only to the extent of omission or non-conformity in detailing could possibly lead to a Contractual Issue. To my knowledge, there has hardly been any such case but could possibly happen if serious review / audits for Road Safety are done, as is being proposed in the DBFO model.

Like in other turnkey contracts, I think it is absolutely necessary to have a separate Review of Safety in the Design and Detail Engineering. I am not aware of any such process in the present scheme of things. Though the provisions of Road Safety are Standardised through IRC and MoRTH, upgradation of the Standards based on current experience is not a regular feature. The Design / Detail Engineering Review by ICs also do not specifically cover the area of Road Safety. It is now hoped that the provision of a Safety Consultant and his Review at the Design Stage followed by Quarterly Reviews and Audit Reports will be strictly complied to eliminate this gap. The present DBFO proposals have this provision



and the Implementing Authority viz. NHAI have, I hope started the process of appointment of Safety Consultant who will lead this effort of reviews and audit at Design stage. Safety Audit of completed works will also be carried out prior to COD by an Safety Consultant appointed by NHAI or State Implementing Agency. This implies that it becomes mandatory for the IC and Concessionaire to implement the recommendations of the Audit and any non-compliance have to be dealt contractually. This will be the first full-fledged process in place for dealing only with Road Safety and its compliance.

A procedure has also been spelt out on the responsibility of the Concessionaire during the Construction as well as at the O&M Stage. An Annual Audit is also prescribed in the O&M period by a Safety Consultant who will also analyse the annual Safety Audit Report prepared and submitted to NHAI by the Concessionaire. Improvement in Safety as recommended by the Safety Consultant in accordance with the provisions of the Concession Agreement or additionally have to be implemented and a Contractual recourse enabled to settle issues of variation. Whatever be the Contractual Issue, I hope Safety considerations are not compromised.



From all the above provision, it can only be expected that full compliance to the procedure and implementation of Recommendation for improvement has to be insisted upon to avoid any Contractual Issues. As a matter of fact, we could draw a parallel from the Railways in terms of Safety and we know that only when the Competent Safety Authority certifies the Safety of a Railway Track then only the track can be opened to traffic – This process should particularly apply to new alignment of roads , elevated expressways and the like which is a new facility. For upgradation of existing facilities, a concurrent phasewise Safety Clearance Process on similar lines have to be thought of.

SAFETY CERTIFICATION & CLEARANCE

Today the IC / NHAI certify the suitability of a facility prior to opening a new or an improved facility to traffic. It is quite commonly observed that accidents do occur right at the opening stage which may involve either the Road User or a local resident trying to cross the facility. The causes for such incidents though cannot be treated as Contractual default, can in most cases be eliminated by some due anticipation and advance protection.



The policy of appointing Safety Consultant, conducting a Safety Audit and Review prior to COD and thereafter Annual Audits and Review during the Maintenance Period will if well implemented, go a long way in making our Roads more “forgiving”. We hope, we will be able to find the right type of Consultants, who can add value to the Design and Construction with respect to Safety. If this works or is seriously made to work in the next stage, we can even think of working to International Standards like ICAO Standards for Airport Runways / Taxiways / Apron and have International Certification which will bring about more seriousness and better results to the whole process. Of course, this has to be done in stages. The seriousness with which we put in place this process of Safety Review of Engineering, Construction and Maintenance will be evident in the reduction of accidents and fatalities even with the huge growth of traffic.

While our efforts will be largely directly towards active Road Users and their Safety, we cannot overlook the requirement of Safety of Passive or Unprotected Users. Inclusive development must cater to their needs which should also be non-compromising. Success lies in integrating the two consciously to avoid litigation and delays later.



I don't think we can afford to live with Contractual Issues where Safety of Road Users and local residents are concerned. There has to be full compliance to minimize risks of accidents. As we move on to higher speeds of traffic, the potential for accidents will only increase unless processes as mentioned above are taken seriously and implemented for the benefit of the user. While contractual stipulation does define boundaries, it will be the sincerity of our efforts in meeting exacting demands of Safety, if we are to prevent accidents which will eventually lead to serious Public Litigation, its accompanying hassles and embarrassment. We can and should avoid such a situation.

Thank you,