

My fifty innovations



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Technology

It is technology innovations which re-define the quality of life for us. The strangle-hold of ruling class controlled by the standard procurers of goods and services at any cost to the society, is detrimental for future of human society

Thursday, June 22, 2006

A lifetime of 50 annual innovations

- a. Standard Curve Rectifier SC R 1972 IPWE National Award
- b. Packing Tube for MSP of ST sleepers SCR 1973 IPWE National Award
- c. A new washable apron(10% of standard cost) SCR 1974 Published
- d. A new(7.6m chord based) track maintenance SCR 1974 Published
- e. A weighted track quality index SCR 1975 Published
- f. A computerized Track patrolling programme SCR 1976 SC Divn utility
- g. LWR gaps - monitoring thru hysteresis curve SCR 1977 "Hypercurve plate"
- h. Suspended station floor at Warangal station SCR 1978 A spl structure
- i. Free force flow economic water storage tanks SCR 1979 Economic
- j. Indian design for pandrol clip- ERC RDSO 1980 Breakthru for mfg.
- k. Resilient Clip- pilfer-proof clip RDSO 1981 Patents USA/UK
- l. Die-constant concept for spatial curves ERC RDSO 1982 New concept published
- m. "RAMTRAK" wavelength based track correction RDSO 1982 Patented Microprocessor based
- n. Toe-load measuring Device RDSO 1983 Patented India
- o. 5t Non- infringing track jacks RDSO 1984 Series production

- p. Track Lifting cum slewing jacks RDSO 1985 "TRALIS" used
- q. A New Theory of Rail Wheel Interaction Brussels 1985 World wide published
- r. A Simple Theory of Track Vehicle Interaction Brussels 1986 World wide published
- s. Dynamic Response of Elastic Fastenings Brussels 1986 World wide published
- t. A Theory to Predict Railhead Failure Brussels 1987 World wide published
- u. Futurology of railway technologies PGTR RDSO 1987 Govt.India adopted
- v. Restructuring RDSO RDSO 1987 Implemented MoR
- w. Monte-carlo modeling for Planning Commission RDSO 1987 Decision support used
- x. Sky -wheels- future urban transport Bologna, Italy 1988 Innovative,World congress
- y. Computerised models rly. alignment assessment KRCL 1990 utility for KRCL
- z. Unique motor-bike survey teams KRCL 1991 original concept for KR
- aa. Software for contract management and MAS KRCL 1992 Office utility new
- ab. Satellite imagery environmental study paper KRCL 1993 International paper new
- ac. RAP Railway Applications Package KRCL 1994-00 World's first unique ERP
- ad. Pilfer-proof Snap-on Rail Clip KRCL 1995 new product
- ae. Ballast-less track based on inertia damping KRCL 1995 new - implemented economic
- af. Well-pile designs for Zuari br KRCL 1996 Economic-avoided air locks
- ag. Organisational Unique Structure for KRCL KRCL 1996-97 Multi-tasking, new culture
- ah. Opening KR to traffic KRCL 1997-98 Pernem tunnel- momentous
- ai. RO-RO services KRCL 1998 Techno-commercial eco-friend
- aj. "Shrama Shakti Smarak" unique memorial KRCL 1998 @Ratnagiri- respect for lost lives
- ak. Anti-Collision Device KRCL 1999 World wide patents -safety
- al. Proving and dedication ACD KRCL 2000 Raksha Kavach- KnowledgeED
- am. Self-stabilising Track KRCL 2001 New product-US patents
- an. Sky Bus Metro KRCL 2001 Patens USA- new transport
- ao. ROSHAN-Rolling Stock Health Analyst KRCL 2002 New vibration signature eqp
- ap. Satdham System KRCL 2003 Patents- new station control
- aq. Raksha Dhaga KRCL 2003 New - protected lives
- ar. Flowing synergetic structures Platform walls KRCL 2002-03 Economic passenger facility
- as. Country's first 150 kmph train run over 400km KRCL 2002 not world's ,but India's First
- at. Raksha Kavach- ACDs with inclinometers KRCL 2003-04 detect cuttings before failing
- au. "Chaitanya " programme Brain Development KRCL 2003 Unique 1 to 5 yr age gr.
- av. Raksha Kavach- networked ACDs Final IR/NF 2004-05 Knowledge Devices NFR
- aw. Economic "Telemedicine" project KRCL-J&K 2004 Internet cost-effective
- ax. World's First Sky Bus safety proving runs Goa Jan. 2005 Upto 70 kmph tested safe.

Friday, June 02, 2006

Dear Shri Batra,

Sub: ACD- inquiry ordered by Railway Board Ref. Bd's :

My comments were requested for by Dr Gokhale, and hence after seeing the development in the Board, I cannot but write this letter, in the national interest and to protect Honour of our Minister, who seems to have been given venomous advice, to hurt not only him but the Government in power.

I am currently in USA with my son on a personal trip- and hence to save time I have to take recourse to e-mail.

One relevant para which characterizes the entire approach of the Committee appointed by the Ministry of Railways to examine how the technology partner was chosen by Konkan Railway is reproduced.

Comments of Mr. B Rajaram ex-MD Konkan Railway on 31st May 2006

Prior to production of the prototype of the ACD by the Kernex, without payment, Konkan Railway did not spend any funds. The first ACD was made on success based , that too limited to Rs 5 lacs if demonstrated within 90 days. Rest of answers and reasons are detailed below.

The story of ACD starts with one page. The committee has to go back to period following the Ghaisal accident. The railway was in turmoil. The RDSO was of not offering any solution and CRB himself at that time mentioned we really have serious technical difficulty. It is a matter of a concept first germinating and then see who has the capacity to develop it further.

This query indicates the committee's lack of any perception as to how to develop a new non-existent product. It is not a works contract project, nor can you put specifications for a product in conceptual stage. In fact RDSO struggled with this type of approach and has become a black hole, and happily continues remain one. Since they follow the stores code mentality, they can only buy a proven foreign technology product, which is happening day in day out. So the committee has to first understand the difference between creative innovation and basic technology development as against buying off the shelf products. The questions the committee is raising, have no relevance if they understand this difference. They have to answer themselves, how do you call for tenders for a product which you have not yet developed? The Ministry even now has not been able to freeze the functional requirements specifications and design and development activities are still continuing. So the process of finalizing the specifications is still on and hopefully after the NF railway trials , if the railways agree that they have firmed up the specifications and no more variations, then open tenders can be called by the Railways and then Konkan Railway also will quote competing with all others- to give the product at the proper market price- they have full right to continue to use the outsourced facility so long as they are able to economically compete and get their orders.

Konkan Railway is a govt owned corporation, but a corporation, which is expected to make profits from their operations including supply of ACDs. This inquiry is meaning-less, to treat Konkan Railway as another Government department to follow the same rules as the RDSO - RDSO enjoys budgetary support without need to show any profitability. The Konkan Railway as company works like a business concern- not as one of the departments of ministry of railway. The Intellectual property rights of Konkan Railway need to be converted into value- there is interdependency of skills available only in the market and domain knowledge of railway and patent right for deviation count theory available with Konkan Railway. So all the MOUs and working arrangements made have to be viewed with this back ground and the preset approach of the ministry to the case is distorted- to kill the business interest of Konkan Railway, while harming their own interest to protect trains cost-effectively.

Specifically:

It is Mr. B Rajaram as Managing Director, who first wrote the concept in one page and sent to Khanna Committee as suggestion to improve safety- records in Board should be verified.

The concept has to be verified by a prototype for technical feasibility. But looking at the atmosphere in the country where people were doing Satyanarayan pooja before boarding the trains, verifiable from press coverage of the period following the head-on collisions and loss of lives, and railway officers were ashamed to reveal their identity by way of any visible official diary in hand while traveling by trains, as a

railwayman, Mr Rajaram fixed a war like target, to produce a prototype while working together with a software cum hardware company. If you want to produce a new type of product, totally within India, where specifications have to be evolved- we work only with certain broad performance requirements. It is Konkan Railway men who produced the design for auto-braking unit, and that in a matter of 48 hours!! Similarly it is Konkan Railway man, B. Rajaram, who produced a new theory Deviation Count theory, to cause the break through in the technology.

The Tata Infotech was already working major software company with KRCL and similarly KERNEX was the company involved with development of real time data loggers to work with the Operating and train control module of Konkan Railway- the criterion being the most cost effective solutions.

In fact the project initially was handled from the desk of MD, on HOURLY basis, and on telephones to cut down the administrative delays - the offer was clear open ended specification and success based payment limited to Rs 5 lacs for each of the companies. Tata Infotech tried hard but wanted most expensive differential gps to be brought in as used in ships- which will not make the cost of unit competitive. They also failed to integrate communication hardware with the programmable cpu.

Guidance and technical direction and interaction was at the MD level itself- while all concerned HODs worked as team.

Mr Rajaram tried personally to rope in Motorola, whose office in Bangalore also he had visited earlier- and whose hand sets only were modified for providing the communication link between approaching locomotives. Even the modifications had to be done without the active help of Motorola- too big a company - did not think much of our concept.

The first prototypes were demonstrated by KERNEX, within 90 days as planned and even the Khanna Commission members by Kernex- Tata Infotech could not solve the problem of realtime communication and action at the CPU level.

Expenditure was not incurred by Konkan Railway at this stage except for departmental work of spending a few hundred rupees for the auto braking unit- and telephone conversations on hourly basis day and night. Even Railway Board for the first time got this KERNEX prototype only tested by RDSO and from then on the continuous story of RDSO involving in the project started. In fact it is a matter of record that the FRS and specifications and standards to be followed were submitted to RDSO only, and only after due approvals Railway Ministry released the funds to Konkan Railway.

It is also not too amusing to note that RDSO took clearly an adversal role to kill the project at every stage and Konkan Railway had to muster even help from renowned scientists of BARC, Space DOT as well as from CENELEC experts of Germany, to correct the misleading reports of RDSO! If an inquiry is held how the RDSO behaved in the entire development process- written records will reveal the prejudiced non-objective manner, not becoming of the trust placed by the Ministry in RDSO as an independent technical advisor. Even here, one should check the original files in the Board's office- actually Mr Rajaram did ask for an amount of Rs 5 cr to set up in-house assembly facility as early as beginning of 2000- but Board in its wisdom did not agree and wanted the facility to be virtually outsourced.

When the one page concept paper, was written by Mr Rajaram, there were more number of cynical and derisive comments all round ridiculing the same. Who will take up and approve expenditure to develop? Even in Konkan Railway- Mr Rajaram as MD, had to get some parties to develop on their own agreeing to accept to be paid after demonstration! It is difficult get our age honoured tradition bound finance officers to agree to such expenditure!

Almost at all stages of development, in the quarterly reports to the BOD, the ACD project was reported and talked about, even though by virtue of powers vested with the MD, no approval of Board was needed.

We did not deal with any foreign company for partnership nor mou, hence no government approval was required to form understandings to create an outsourced exclusive facility of laboratory and manufacturing facility for Konkan railway- it is the most cost effective means of technology control and development. The MoUs have to be carefully studied- they are pretty serious documents and cannot be understood if one wears blinkers of stores code.

Protection of intellectual property has never been the subject matter for the administration and hence all rules are made for buying off the shelf somebody else's property! When it comes to protecting your own intellectual property, then the rules of the game are different. This is typical example as to how a Corporation tried its best to protect public interest and normal stores procuring minds need to first understand the difference.

If the committee wants to view now with the success story today of ACD, the first knowledge embedded device Indian Industry has produced, of world class with third party certifications, which is not available in Europe (and even GE now wants to get their hands on, because their technology is not certified!) actually

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there are lessons that RDSO and the Ministry should learn as to how to develop a new and innovative technology product! The methods adopted by the Ministry for works and stores contracts, and sought now to be applied in case of world's competitive cutting edge technology- are ridiculous- a creative product cannot be produced by tendering! The committee is doing a self-defeating exercise in futility. If the current action is only to harass the officers and team who diligently worked hard to produce a world class technology which RDSO cannot claim to have produced in the last half a century spending more than 500 crores on various research projects as well as wasted my patents given to RDSO when I was in RDSO, following the venerable stores procedure code, it speaks volumes for the not only lack of just administrative balance but also indicates a criminal bent of mind hurting national interest- to promote perhaps the GE , (earlier Siemens or Alsthom,) which is the latest multi-national which repeatedly tried to make forays into Konkan Railway premises to grab the ACD technology, to cover up their inefficient uncertified train control technology. If this inquiry is a way of helping GE by frightening the Konkan Railway to stop working further on ACD, it will be obvious- because , it will not be surprising to see soon enough, some senior RDSO officers flying off to GE in USA in the name of study tours. Our innocent railway officers accustomed to follow the normal stores code, do not understand the nuances of technology war and the vigil needed to protect our property from being stolen Obviously some one in the Board has given the wrong impressions to the Honble Minister, creating a needless mess and confusion. A letter addressed by Mr Rajaram regarding the technology war cautioning the current MD/ Konkan Railway is enclosed. In fact a secret message has also been filed with CBI in this regard, to watch out for the agents of multinationals using our official machinery to steal the property from our country. Once the product development to the satisfaction of railways is completed, then Railway are welcome to circulate the FRS and call for open tenders, making Konkan Railway also to quote, (but Konkan Railway becomes the approved vendor) when the opportunity costing can be done and true value of ACD is realized as profit to Konkan Railway. Since in the world neither GE nor Alsthom can meet these performance parameters- at the prices being offered and the technology breakthrough of Deviation Count theory is available to Konkan railway, as assigned by Mr Rajaram as inventor. Konkan Railway is a public sector undertaking company, just like another equipment supplier- and their internal arrangements to produce an equipment to beat the world players are commercial in nature and protect their IP rights while delivering the requirements of Indian Railways. So Ministry trying to view to apply stores code for this technology development effort is serious mis-application of mind. The Honble Minister need to be advised properly, that wrong misleading briefing has been given by some one in the Rly Board office- to serve perhaps another MNC interest. It is truly a technology war, and I hate to think of our Honourable Minister being made an instrument to act to protect interest of an MNC, while killing our own nation's pride of performance, the Raksha Kavach!

With regards,

B.Rajaram M.Tech FIE ., FNAE IRSE Former MD Konkan Railway

posted by Engr. B. Rajaram ;Inventor ACD/Skybus at 7:45 PM 0 comments _

Monday, January 30, 2006

Mr B.Rajaram receiving FICCI award for outstanding contribution to knowledge based industries in Dec 2004 from Hon'ble Finance Minister Shri PC



Chidambaram

posted by Engr. B. Rajaram ;Inventor ACD/Skybus at 3:28 AM 0 comments _

Monday, January 02, 2006

Mission Atrilab

Mission: Develop and promote innovative knowledge embedded intelligent



infrastructure technologies to improve quality of lives at reducing costs to create wealth for common man!

Strategy: Digitally empowered knowledge-embedded- infrastructure-evolution to make

basic infrastructure of roads, railways, air/sea ports, power management, healthcare, water/sewage management, municipal house keeping functions, habitat development for under-privileged, agricultural water management/ harvesting/ transportation to processing centers, basic food processing and delivery systems, educational support - almost covering the entire gamut of human life.

Plan of Action: Play the role of a catalyst as well as come up with practical concepts to convince the primary owners/ creators of infrastructures to try out pilot projects in each of the human endeavor, to become a model for others to follow.

Current Projects:

- Anti-collision Device networks first version to be upgraded to SIL level 4 in three years, to auto-drive and control trains.
- Satdham system of train management at stations to be fully developed for integrating with the ACD network to create Intelligent Rail Transport system.
- Complete development of Self- stabilizing tracks for railways, with next generation intelligence built in to monitor and direct maintenance effort.
- Rolling stock in line health monitoring system to reliably identify through vibration signature analysis, less than healthy rolling stock, which needs attention.
- Complete development of Skybus technologies
- Derailment arrestors technology improvements
- Suspenders to have intelligence to control loading and oscillations and improved safety against unforeseen combination of events causing adverse conditions.
- Sky-stations to have in-built intelligence to deal with differently enabled users
- Special auto-driving devices with artificial intelligence, to be capable of handling safely all conceivable as well as improbable train management challenges efficiently.
- Improved flexible coach design with built in self-monitoring intelligence, causing paradigm shift to produce better performance at lower costs.
- Extension to automatically manage house keeping functions for a municipality
- High-speed economic inter-city transport for goods and people using the Skybus technology.
- Sea-ports: Improve by ten-fold productivity of ports utilizing Skybus technology, by implementing Sky-con service. The ports can become empowered with intelligent cargo handling systems
- Airports: Intelligent airport design incorporating the Skybus technology, transforms the airport as we know, the design approach to handle millions of

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passengers will be positively influenced.

- Rail based transport for inaccessible and inhospitable Himalayan mountain range, for people and goods including defence requirements, with all weather capability with self-propelled units can be provided by the Skybus technology, most economically.
- Water-supply/sewerage systems: Next generation systems with built-in knowledge embedded devices net working with each other, to produce the most cost effective services with improved quality.
- Roads/habitats: Concepts of flowing, self-balancing structural elements embedded with intelligence designed to produce affordable habitats for the economically challenged.

posted by Engr. B. Rajaram ;Inventor ACD/Skybus at [7:32 AM](#) [0 comments](#) _

Friday, December 30, 2005

Your Excellency Prime Mimister Japan

Your Excellency,

An Appeal- to add to human wealth

Human greed shall not be allowed to rob wealth of one community to enrich another community. Such development model is not sustainable. A highly developed country with strong economy has a responsibility to see that their help to another country should not engender forces to sabotage effectively human growth. This can happen when the tremendous economic strength and short term interest of established industry of one community, leverage themselves to make local experts of another country to lobby for uneconomic and unsafe technology, killing local initiative to find better solutions. In fact, the short sighted aggressive marketing by companies of established economies, using their Government support to provide long term soft loans to cover up the inefficient old economically outdated technologies- hurts long term interests of both the provider as well as the receiver of such aid. Fundamental financial sustainability if not ensured. It becomes an instrument of transfer of wealth and ultimately not sustainable.

This scene can be re-written- by progressively innovating and re-engineering, one can keep service technologies within economic affordability. Communication technologies have shown the path already. The same cannot be said of rail transport. The same hundred year old coned wheel over rail has substantially continued, and the problems of derailments and capsizing continue. There is no positive restraining link between the guiding railway track and the running steel bogie- once the wheels leave the rail, it is an uncontrollable coach with passengers or cargo crashing out at anything in sight with serious damages. If we can change this by providing the hither to missing positive link, we all should be happy to continue to use the proven railway technology! That is the innovation done by Mr B. Rajaram, when he presented the Skybus technology -granted patents by USA too. The same high speed transit on the same railway bogies is assured, while providing a positive link now, between the bogie and the rail track, so that coach can never derail nor capsize.

In the year 2000 the concepts presented and in 2001 eminent scientists like Dr Abdul Kalam, Dr Anil Kakodkar as well as a working Commissioner of Railway Safety through bench marking process concluded that Skybus technology is an improved rail based technology, safer than existing conventional railway. The same railway bogies/ rails and all elements of proven railway only are used, so the existing industry need not lose the benefit of existing manufacturing facilities.

The major advantage of Skybus technology an improved rail-based system, is that , earlier we are forced to design providing for unknown forces of derailments etc- thus not allowing optimisation. Skybus technology allows a more realistic estimates of forces to which the system has to be designed- so tremendous economy results in. For instance, the capital cost of setting up an urban transport with a capacity of 6 million air-conditioned journeys per day over 100 km of network , works out to US\$ 1.5 b (in India), and will take less than 3 years to commission. Compare

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this to current solution of conventional metro rail- you need to spend more than US\$ 4 to 5 b and will take 5 to 7 years. Thus the Skybus technology makes metro rail based urban transport financially viable and safer. Additionally the Skybus technology gives a total solution- can handle cargo too- which is not taken care of by conventional metro rail system. By adopting Skybus technology all the Governments in the world will be able to provide economic, safer and comfortable travel infrastructure with least burden on public funds.

Since Skybus is substantially the same as railway technology, except much more improved- it is so easy to implement and safety levels are many times more assured, by avoiding crashing of coaches. Internationally respected certifying agency like TUV Rhineland, Germany assessed that the technology is mature for safe implementation. Dynamic test results prove that the Skybus technology improves the riding quality of metro rail ten times more! But it is sad that common public is still denied the benefit of the technology because of the strong lobbies funded by the existing metro rail equipment manufacturing companies. Yes for some period, the technology of Skybus could be delayed by such powerful lobbies- but eventually the Skybus is the right answer.

My prayer, as the sole inventor and developer of the technology, (and who has not retained any rights to derive personal benefit of the Intellectual Property, but assigned the same to the Government of India), is that Your esteemed country may initiate a process of introspection by your industry, as well as review policy of your government, unknowingly (may be) force uneconomic and unsafe technologies not only in my country but in your country too!

I believe all humans on the planet deserve a better deal- improved quality of life at reducing costs!

B. Rajaram M.Tech., F.I.E., F.N.A.E.,
Former Managing Director/ Konkan Railway Corp.,
Inventor & developer; Anti-collision and Skybus Metro rail technologies
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Dt 30 Dec 2005

Happy new year to Hon'ble prime Minister! I again pray that your technical experts can interact with me and examine why Japan should go on burdening my country with such heavy debt burden on metro rails , which anyway is not helping your countrymen too, but create white elephants- while alternative technology breakthrough Skybus metro rail is available, which makes the urban transport a financially viable proposition. You loans to my country is only helping the european industries and eroding the wealth of my country, not withstanding the praise being showered on bureaucrats of my country for enabling such wealth transfer activity- and it is sad that your country should become a partener in this. My technology of Skybus cannot be stopped, but delayed, but hope you will avoid the embarrassment of supporting a wrong cause. With regards to the Hon'ble Prime Minister

posted by Engr. B. Rajaram ;Inventor ACD/Skybus at [12:27 AM](#) [0 comments](#) _

Wednesday, December 21, 2005

B. Rajaram

Working for Infrastructure Development model
to make travel, food and shelter virtually free to all!

Er. B. Rajaram B.E., M.Tech., F.I.E IRSE(retd.,)

Life Member Computer Society of India

Fellow of National Academy of Engineering

Inventor & Mentor Anti-collision / Skybus Technologies

Mr. B. Rajaram (born 1945) is a First Class First with Distinction Engineering graduate and an M.Tech from IIT/Kharagpur. Having served a decade in railway open line in various

capacities, another decade in Railway research at RDSO & IIT, worked abroad as consultant till 1990.

He was involved with the Konkan railway project from the beginning of construction (1990) as a Chief Engineer, Director (Projects) and finally as the Managing Director(1998 to Jan, 2005).

The **World Bank** praised his management practices.

He has original contributions of **new theories** in rail-wheel and track-vehicle interactions in railway technologies recognized and published in the world forums.

He holds several patents abroad and in India for his inventions. His inventions cover railway technologies, world's first Intelligent Anti-collision Devices (already under implementation over 2500km of route on Indian Railways), **Sky Bus Metro** (concept first presented in Bologna University Italy, by him in 1989)- in all 17 patents are assigned by him to the President through Konkan Railway Corporation, the royalty streams **valued (by Pricewater Coopers)** at Rs 20,000 to 30,000 cr over 10 years with NPV of over Rs 8000 cr, if nurtured over next three years.

Research & technology innovation has been his passion. He is the recipient of FICCI national level award for Outstanding contribution to knowledge based industries in our country, as adjudged by **Justice Bhagawathi** committee, in 2004.

He believes it is in the realm of reality to make food, travel, communication and dwelling virtually free to all humans on the planet through bold application of science and technology to infrastructure development.

He wants India to lead the world in transportation, with Skybus technology, which makes metro-rail safer and financially affordable.

posted by Engr. B. Rajaram ;Inventor ACD/Skybus at 7:39 AM 0 comments _

Friday, December 16, 2005

Railways vs Skybus

Dear Shri Batra,

Sub: Skybus technology: self-denial of revenue by Ministry of Railways

- a. All components of Skybus technology are railway's proven ones over the last century!
- b. The only point to be proven was whether the suspended configuration can travel safely at high speeds- the CCRS for Railways prescribed the same safety /comfort norms as used for suburban railways, and the oscillation trial results prove that the system satisfies the norms.
- c. The same railway rules for certifying the system components, like track certificate, the rolling stock certificate, the signal operational certificate- followed exactly as per opening of a railway by my HODs and as MD I approved the same, classifying the same as a deemed railway, and under the Railway Act wanted the CRS to certify for public carriage, since the same railway codes were followed in all the aspects.
- d. CRS Central Railway inspected the track saw the oscillation results and examined all the documents filed by Konkan Railway in Dec 04/Jan 2005, was

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in principle fully satisfied with the records, and bench marked against existing railway standards, willing to certify the same as safe technology.

- e. But then the Ministry of Railways took initiative to set aside my order. I locally ordered that the Skybus can be substantively classified and certified under the legal umbrella of Railway Act, even though for appearance it is different, but intrinsically by physics of being a rail guided system and using all the railway systems of railway track, railway underframe with normal railway bogies, railway braking systems, and railway signaling systems- is easy for railway men to understand and certify.
- f. The Ministry in their wisdom taking such stand is actually hurting the self-interest in addition to national interest. A non-technical ministry like UD Ministry, effectively is at loss not knowing what to do.
- g. Had the Ministry of Railways allowed me to certify the system at that time through CRS, by this time, all the metro projects in the country would have been using the Skybus technology, at the investment levels of Rs 50,000 cr, the Ministry would have gained through Konkan Railway royalty of Rs 5000 cr over the next 3 to 4 years!
- h. The investment that we did of Rs 50 cr, has served the purpose of proving the dynamics, and the doubts about safety don't exist any more because of the excellent results obtained- we don't have to prove any other items which are basically proven railway elements used by us regularly. It is to be realized that for no purpose, the Ministry is hurting itself leaving the initiative to Urban dev Ministry, who are denying the benefit to the Railways!
- i. What is required now is to, allow the CRS Central Rly to go ahead and certify, under Railway Act, but when adopted in cities, the local authorities may go ahead and get the system certified under the Local Tramway Act, so long as it remains within city limits, but following the same rules as under the Railway Act, and CRS may continue to have jurisdiction.

The choice: Gain Rs 5000 cr over next 3 to 4 years as royalty (Skybus being financially viable, will beat all others) or prepare to answer for wasteful expenditure of Rs 50 cr because of own folly of not being fair to self!

I promise you that if the Railway Board stands by me, I can make it happen: I only need the policy support. Hope this historic opportunity is not wasted.

With regards, Yours sincerely,

(image placeholder)

(B.Rajaram)

Shri J.P. Batra

Chairman/Railway Board/New Delhi

posted by Engr. B. Rajaram ;Inventor ACD/Skybus at [9:10 AM](#) [2 comments](#) _

About Me



Name:Engr. B. Rajaram ;Inventor ACD/Skybus

Location:Hyderabad, Andhra Pradesh, India

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Fellow of National Academy of Engineering Fellow of Institution of Engineers, M.Tech., Indian Railway Service of Engineers (1970–2005) Former MD/ Konkan Railway Corporation

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