

Sky Bus Technology

A.Jeba Jeslin¹, K.Jeevanandan²

PG Student, Department of Structural Engineering, Sri Krishna College of Technology, Coimbatore, India¹.

PG Student, Department of Structural Engineering, Sri Krishna College of Technology, Coimbatore, India.²

ABSTRACT— *The Sky Bus technology offered by Konkan Railway Corporation defines the thinking and planning for urban transport being an Eco-friendly Mass Urban transport system revolutionizing urban life. It is a patented technology developed for the new millennium and causes a paradigm shift in urban transportation all over the world. Being an indigenous technology, it will place India on the forefront of the Rapid Transit Industry all over the world while providing the much needed alternative transportation solution, which is financially viable, environment friendly, synergizing well proven existing cutting edge technologies. Sky Bus uses pre-fabricated latest construction technologies, which save time and money resulting in easy execution of the project in busy urban areas without disturbing the existing traffic pattern.*

Keywords — Eco – friendly, urban transportation, Construction technology.

1, INTRODUCTION

The traffic in the city is increasing day by day due to population improper town planning which is making city not fit to live. We need to provide a solution for this by providing improved transportation technique. Sky bus is a prototype suspended railway system invented by Indian technologist Rajaram with the Konkan Railway. The system consists of an elevated track with the cars suspended below. It is financially viable, environment friendly and saves money and time. A unique mass transit system which can be put up within any two years in any crowded and congested city for safe transportation without loss of time. It eliminates the problems of existing metro rail systems like derailments, collisions, capsizing and crushing people. It results in easy execution of the project in busy urban areas without disturbing the existing traffic pattern.

2, COMPONENTS OF SKY BUS SYSTEM

There are five components of the sky bus system. They are as follows,

- Sky Way
- Sky Bogie
- Sky Coaches
- Sky Stations
- Traverser Arrangements



2.1 SKY WAY

The Sky Way consists of a concrete box structure 8.4 X 2.4 m carried over a series of piers at a height of 9-10 m above the existing road level. In the middle of the roadway, pile foundations support 1 m diameter columns approximately 8 m high and at a spacing of 15 m. all along the roadway. It has two heavy 52-60 kg/m rails fixed with appropriate fastenings within the concrete box support at standard gauge that guide the sky bogie. There are no points and crossings.



Figure 1

2.2 SKY BOGIE

Standard two axle bogies are used for speeds of 100 km/h. Three phase AC motors with regenerative power capability are used. There are 4 rails and third rail is used for current collection. Linear Induction motor technology is incorporated with 4th rail driving. Brakes are provided for safety of commuters. Disc brakes are provided. Emergency mechanical brakes are also provided in case of any emergency. Power is delivered to the vehicles using brushes are by current carrying wheels.



Figure 2



2.3 SKY COACHES

These are double walled light shells with large wide windows suspended from the sky bogies. Controlled banking on curves is possible. Curve with radius of 50 m can be negotiated. The coaches are air conditioned and fixed with automatic doors. They have audio visual information and sliding doors of 4 m wide. Each pair of coaches carries 300 persons and service every one minute or 30 seconds is possible.



Figure 3

2.4 SKY STATIONS

Sky Bus needs smaller stations about 50 m long. Stations are available at every 1 km. It is a natural footbridge across the road. From up line to down line the station provides natural access, which is easy. No waiting time for passengers. Totally automated without drivers or guards and access control is also electronic by prepaid cards being swiped in. Stations act only as an access facility and not as passenger holding area. Service is available at every 30 seconds or 1 minute.



Figure 4

2.5 TRAVERSER ARRANGEMENTS

It is a system which automatically shifts sky bus unit from one track to another. The traverser acts like a station. The traverser is a modified form of transverser used in other industries for lifting and shifting objects. In the traverser a platform of track is hung to a bogie which consist of a motor and is also mounted on the track. The traverser acts like a station. A distance of 50 m. from the last station to the traverser is maintained to provide holding capacity for two units as a third unit is getting traversed in case of unforeseen delay.

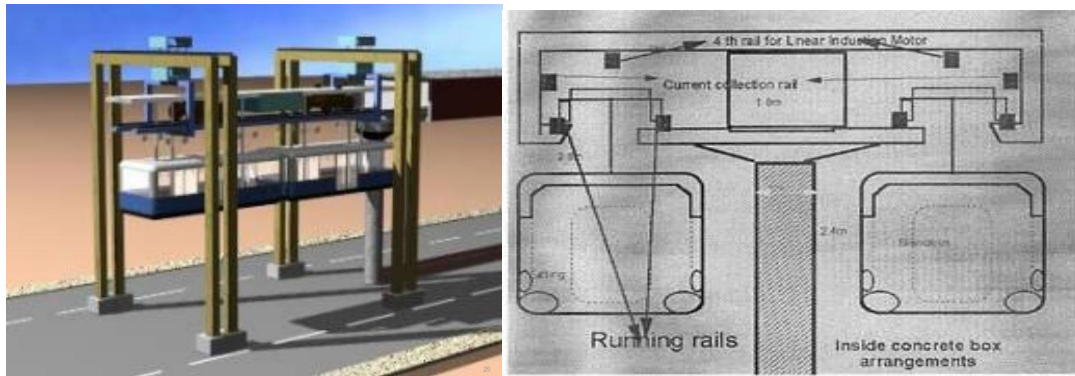


Figure 5

3, WORKING PRINCIPLE OF SKY BUS TECHNOLOGY

The standard railway coach runs on the railway track. The under frame with standard railway wheel set running on the railway track. The under frame remains the same, railway wheels run on same track, the coach is firmly attached to the under frame. The under frame with wheels and railway traction motors and railway track enclosed in the concrete box travel on the railway track, carrying the coaches below outside the concrete box.



Figure 6

4, ADVANTAGES OF SKY BUS

- Transportation is faster when compared with other modes of transportation.
- In Sky Bus Technology there is no land acquisition problem.
- Lowest operational cost.
- There occurs no traffic jams as it is constructed at a considerable height above the road.
- Performance is very good.
- There is more safety than other modes of transportation.
- Financial viability.
- Better capacity.
- No pollution and no Capsizing.
- Luxury and Comfort.

5, CONCLUSION

Sky Bus is the technology breakthrough that India has achieved. Sky Bus is an improved railway technology eliminating the problems of existing metro rail systems. It eliminates the fears of derailments and capsizing. It makes the cities livable, improving quality of life, attract and sustain economic activity to generate wealth. Financially Sky bus metro makes urban transportation a dream come true for administrators – virtually free gift to people without Government fund in. It really solves the urban crisis. The Sky bus metro is one single technology which can change the face of our cities, take out almost 10 million road vehicles in the cities and make the cities livable, improving quality of life and attract and sustain economic activity to generate wealth.

REFERENCES

- #1. Dr. B.Rajaram “ Rail International – Brussels”, A Simple approach to study Rail wheel interaction, May 1983.
- #2. Dr. B.Rajaram “ Rail International – Brussels”, A New Theory of Rail wheel interaction, April 1984.
- #3. www.engineeringcivil.com
- #4. www.ijsrd.com.
- #5. www.internationaljournalssrg.org.
- #6. www.worldwidejournals.com.
- #7. www.digitaljournal.com.
- #8. www.geocities.ws.