

Light Rail Transit

Definitions

Light Rail Transit (LRT) systems are metropolitan electric railway systems characterised by their ability to operate single cars or short trains along exclusive rights-of-way at ground level, aerial structures, in subways, or occasionally in streets, and to board and discharge passengers at track or car floor level (TCRP, 1998). LRT systems include tramways, though a major difference is that trams often operate in mixed traffic without an exclusive right-of-way.

Context and Policies

There are currently over 400 Light Rail systems operating worldwide of which around 300 are tram systems. Most systems are to be found in Europe (72 are in Russia and 70 in Germany). There are few examples of Light Rail Transit in developing countries; the most extensive is in Manila (Philippines) with two lines covering 28 kilometres in length.

Advances in electronics, software and materials are playing a major role in making LRT systems more attractive to operators. This has been a major factor in the expansion of existing systems and the construction of entirely new systems.

LRT is seen as an extremely diversified mode that can be used for short urban, as well as long regional lines with various levels of speeds and capacities, using alignments that vary from streets to fully separated tunnels, viaducts and railway tracks. Improvements in track and car design have reduced noise levels to a point where LRT protagonists consider LRT systems quieter than diesel buses.

Issues

Increasingly, Bus Rapid Transport (BRT) is challenging the development of new LRT systems on the grounds of cost. BRT systems are becoming more and more sophisticated and capable of emulating the service levels of LRT at much lower investment and operating costs.

There is considerable debate of the capacity of LRT systems compared with BRT systems. With the development of articulated and bi-articulated buses in Curitiba and Bogota, the capacity of BRT has equalled and exceeded that of comparable LRT systems. The development of LRT systems is therefore likely where they can be cost-effectively upgraded and enhanced.

Actions

BRT and LRT should be considered as complementary modes.

LRT is seen as being suitable for situations demanding heavy passenger volumes, use of tunnels in high-density urban centres and direct service in pedestrian zones.



Photo credits: Changchun LRT © Sean Marshall

Resources

Documents

- **Advances in Light Rail Technology**, 2007, Eastside Rail Now! (USA)
- **Light rail and BRT: Competitive or complementary?**, 2005, Vukan R. Vuchic, Public Transport International, 5 / 2005, UITP, Brussels (Belgium)
- **This Is Light Rail Transit**, 2000, Jack W. Boorse, E. L. Tennyson and John W. Schumann, Transportation Research Board, Washington DC (USA)

Recommended Links

- **Light Rail Atlas** (The Netherlands)
- **Light Rail Now** (USA)
- **Light Rail Transit Association** (UK)
- **Light Rail Transit Authority (LRTA), Manila** (Philippines)

For further information

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