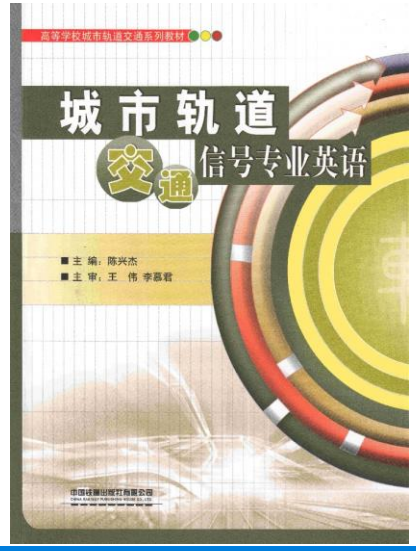
# CHAPTER 4
# Other Types of Rail Traffic


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# Unit 14 Light Rail

- The Introduction of Light Rail
- Types

# 14.1 The Introduction of Light Rail

- Light rail was devised in 1972 by the U.S. Urban Mass Transportation Administration (UMTA) to describe new streetcar transformations that were taking place in Europe and the United States (Fig.14.1).
  - In Germany the term Stadtbahn was used to describe the concept, and many in the UMTA wanted to adopt the direct translation, which is city rail.
  - Light in this context is used in the sense of "intended for light loads and fast movement", rather than referring to physical weight.
  - The infrastructure investment is also usually lighter than would be found for a heavy rail system.

# 14.1 The Introduction of Light Rail




Fig. 14. 1 Los Angeles's mass transit expansion has been driven in large part by light rail

# 14.1 The Introduction of Light Rail

- The Transportation Research Board (Transportation Systems Center) defined "light rail" in 1977 as "a mode of urban transportation utilizing predominantly reserved *but not necessarily* grade-separated *rights-of-way*.
  - Electrically propelled rail vehicles operate singly or in trains.
  - LRT provides a wide range of passenger capabilities and performance characteristics at moderate costs."

# 14.1 The Introduction of Light Rail

- The American Public Transportation Association (APTA), in its Glossary of Transit Terminology, defines light rail as: a mode of transit service (also called streetcar, tramway, or trolley) operating passenger rail cars singly (or in short, usually two-car or three-car, trains) on fixed rails in *right-of-way that is often separated from other traffic for part or much of the way* (Fig.14.2 ).
  - Light rail vehicles are typically driven electrically with power being drawn from an overhead electric line via a trolley or a pantograph, driven by an operator on board the vehicle, and may have either high platform loading or low level boarding using steps.

# 14.1 The Introduction of Light Rail

- The use of the generic term light rail avoids some serious incompatibilities between British and American English.
  - The word tram, for instance, is generally used in the UK and many former British colonies to refer to what is known in North America as a streetcar, but in North America tram can instead refer to an aerial tramway, or in the case of the Disney amusement parks, even a land train.
  - The word trolley is often used as a synonym for streetcar the United States, but is usually taken to mean a cart, particularly a shopping cart, in the UK and elsewhere.
  - Many North American transportation planners reserve streetcar for traditional vehicles that operate exclusively in mixed traffic on city streets, while they use light rail to refer to more modern vehicles operating mostly in exclusive rights of way, since they may operate both side-by-side targeted at different passenger groups.

# 14.1 The Introduction of Light Rail

- The difference between British English and American English terminology arose in the late 19th century when Americans adopted the term "street railway", rather than "tramway", with the vehicles being streetcars rather than trams.
  - Some have suggested that the Americans' preference for the term "street railway" at that time was influenced by German emigrants to the United States (who were more numerous than British immigrants in the industrialized northwest), as it is the same as the German term for the mode, StraBenbahn (meaning "street railway").
  - A further difference arose because, while Britain abandoned all of its trams except Blackpool after World War II, seven major North American cities (Toronto, Boston, Philadelphia, San Francisco, Pittsburgh, Newark, and New Orleans) continued to operate large streetcar systems. When these cities upgraded to new technology, they called it *light rail* to differentiate it from their existing streetcars since some continued to operate both the old and new systems. Since the 1980s, Portland, Oregon, has built all three types of system: a high capacity light rail system in dedicated lanes and rights-of-way, a low capacity street car system integrated with street traffic, and an aerial tram system.

# 14.2 Types

- The most difficult distinction to draw is that between light rail and streetcar or tram systems. There is a significant amount of overlap between the technologies, many of the same vehicles can be used for either, and it is common to classify streetcars or trams as a subcategory of light rail rather than as a distinct type of transportation. The two general versions are:
  - The traditional type, where tracks and trains run along the streets and share space with road traffic. Stops tend to be very frequent, but little effort is made to set up special stations. Because space is shared, the tracks are usually visually unobtrusive.
  - A more modern variation, where the trains tend to run along their own right-of-way and are often separated from road traffic. Stops are generally less frequent, and the vehicles are often boarded from a platform. Tracks are highly visible, and in some cases significant effort are expended to keep traffic away through the use of special signaling, level crossings with gate arms, or even a complete separation with non-level crossings.

# 14.2 Types

- At the highest degree of separation, it can be difficult to draw the line between light rail and metros, as in the case of Wuppertal's Schwebebahn hanging rail system, Boston's Riverside Line, or London's Docklands Light Railway, which would likely not be considered "light" were it not for the contrast between it and the London Underground; many consider these not to be "light rail" lines but light metros.
- However, in Europe, the term light rail is increasingly used to describe any rapid transit system with a fairly low frequency or short trains compared to heavier mass rapid systems such as the London Underground or Singapore's Mass Rapid Transit.
  - For instance, the LRT-1 and MRT-3 in Manila are often referred to as "light rail", despite being fully segregated, mostly elevated railways.
  - This phenomenon is quite common in Chinese cities, where elevated light metro lines in Shanghai, Wuhan, and Dalian are called light rail lines.
  - In North America, such systems are not considered light rail.

# 14.2 Types

- Many light rail systems—even fairly old ones—have a combination of the two, with both on-and off-road sections.
  - In some countries (especially in Europe), only the latter is described as light rail. In those places, trams running on mixed rights-of-way are not regarded as light rail, but considered distinctly as streetcars or trams.
  - However, the requirement *for saying that a rail line is "separated"* can be quite low—sometimes just with concrete "buttons" to discourage automobile drivers from getting onto the tracks.
  - Some systems such as Seattle's Link are truly mixed but closed to traffic, with trams and traditional buses both operating along a common right-of-way.

# 14.2 Types

- There is a significant difference in cost between these different classes of light rail transit.
  - The traditional style is often less expensive by a factor of two or more.
  - Despite the increased cost, the more modern variation (which can be considered as "heavier" than old streetcar systems, even though it is called "light rail") is the dominant form of urban rail development in the United States.