

# **THE DEVELOPMENT OF URBAN MASS TRANSIT**

## **HORSE CARS TO LITE RAIL VEHICLES**

*This exhibit is a collection of stamps showing the development of rail born urban mass transit from animal (mostly horse) powered cars of the 1830's to today's Lite Rail Vehicles (LRV's). Through the use of stamps and other philatelic items we can see the development of the cars and their uses. In a few cases photographs of trolleys have been added to illustrate cars not shown on stamps.*

- 1.1 Animal Power
- 2.1 Early Mechanical Power
- 3.1 Early Electric Cars
- 3.2 Turn of the Century Electric Cars
- 3.3 20<sup>th</sup> Century Trolleys – early to mid century
- 3.4 20<sup>th</sup> Century Trolleys – mid to late century
- 3.5 Lite Rail Vehicles
- 4.1 Postal Trolleys and Covers
- 5.1 Streetcar Named Desire

# *The Development of Urban Mass Transit*

*A collection of Trolley Cars on stamps showing the  
progression from Horsecars to LRV's*

From the earliest history of civilization, the size of cities and towns has been limited by the time and distance needed for people to get the things they want and need. With the coming of the Industrial Revolution, travel to a job became a factor. While animals, mostly horses, allowed for farther and faster travel, they presented problems of their own. A horse was not inexpensive and required significant care. Few average workers could afford this luxury and thus did not have this option and were forced to live near their places of employment. For every problem it seems there is someone with a solution and often this solution comes with a profit motive.

At first mass transit was provided by large horse drawn coaches, called omnibuses. They would take passengers on a prescribed route for a fixed fee. Unlike a taxi or hansom cab, they were not limited to a handful of passengers all with a common origin and destination. Most omnibuses had seats for 12 passengers. A major problem was the unpaved streets and having the horses drag the omnibus through the mud. Horse car companies had to own, feed and care for at least 6-8 horses for each car they ran.

When intercity railroads began using iron straps on wooden rails to provide a path for trains, the idea of placing such an infrastructure in streets was born. This required a more organized corporate structure and led to the formation of horse car railway companies. These railways were built worldwide and are pictured on the stamps of many different countries in this exhibit. The rails in the streets soon were noticed, and used, by the teamsters driving commercial freight wagons, as they allowed their horses to pull loads with less effort. They petitioned cities for ordinances requiring the rails be spaced for their use [at no cost to them]. As a result many Pennsylvania companies were required to space rails five feet two inches apart to accommodate Conestoga wagons. Toronto was required to use 4'10 7/8" as this was a common wagon width there. Most rails were spaced 56 1/2" known as standard gauge and used by most railroads in the US and England.

This system of moving people in cities was common from the 1830's through the end of the century. It was not, however, without issue. Horses produce a large amount of waste and deposit that waste where they want to. The manure in the barns was collected and sold to farmers near the cities, providing additional income for the companies, but on the streets it became a part of the landscape. Additionally animals are subject to disease as evidenced by the Great Epizootic of 1872. This equine flu, not transmitted to humans or other animals, killed 85% of the horses in the northeastern US and eastern Canada. Imagine the disruption of commerce, transportation and even fire fighting with the elimination of the primary source of propulsion.

Mechanical replacements for horses were tried as early as 1860. Small steam locomotives were built and enclosed in a "dummy" car. The hope was that these "dummy" engines would not scare the horses and people on the streets. While they did the required work well, pulling single or multiple horse cars through the streets, they spewed copious amounts of smoke and cinders

and were noisy. Attempts were made to use stationary boilers to charge the batteries and using compressed air instead of steam, neither was successful enough to be used in large numbers.

Thomas Edison, in conjunction with Werner von Siemens, constructed an electrically powered locomotive. They built a small version as a demonstrator and exhibited it at the 1879 Hamburg Exposition. While it was quiet and clean, because it used the rails to transmit power, it was shocking for anyone touching the rails. A battery powered version failed because the batteries weren't up to the task.

In 1873 Andrew Hillidie successfully began operation of his cable hauled railway in San Francisco. The line used, as they still do, a stationary power plant which moved an endless wire rope under the street. At first a small car, called a grip car, which was supplied with a gripping mechanism pulled old horse cars over the line, more recently [1890's] the grip is built into the passenger car. In 1964 the San Francisco system was named a National Historic Landmark and became the world's only moving national monument. In addition to San Francisco 28 other US cities and 11 cities worldwide had cable systems, some operating until the 1940's. Chicago, with virtually no hills, had the largest cable car system in the world in 1882.

The large capital outlay required for a cable system and the limitations on expansion of those systems could not compete with the new comer to the transportation scene, the electric trolley. The cars were faster, cleaner, less expensive to operate and more versatile than previous methods. From Frank J. Sprague's invention of the axle hung motor, and power distribution system, in 1880, trolleys have been improved upon, rather than replaced, in most cities around the globe. The automobile took a huge bite from mass transit ridership. Many trolley lines were replaced by buses in an effort to provide greater flexibility and cost savings in the transportation system. It should be noted, however, that while many trolleys served for 40 or more years, today's buses last about 7 years before replacement is needed.

Today's LRV's are sleek, quiet, clean and environmentally friendly. They make use of the latest technological advances in propulsion and materials. Even in the US, new systems are proposed and built annually. While the US was responsible for development of trolleys in the early 20<sup>th</sup> century, Asian and European manufacturers have taken the lead in development of the LRV and today we import the cars and from Europe and Asia.

While many involved in philately know of the steam railroad's RPO cars, not many know that there was a trolley equivalent. They are not well represented in stamp issues but enclosed in this display are numerous covers illustrating their use.

One of the most well known trolleys is the Streetcar Named Desire. This car was so named because of its destination sign "DESIRE". The car is represented here with stamps and a photo of one of the cars.

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