

## **The Trolley Era and the Electric Age**

Written and edited by Archivist Emeritus Edward Lybarger

The invention of electric motors, electric lighting, the telephone, electric generation and distribution systems, and the electric streetcar in the late nineteenth century marked the start of the “Electric Age.” The early growth and development of electricity and the street railway industry were tightly intertwined and had great impact on the lives of Americans.

### **The Time Before Trolleys**

Prior to electricity, travel was an ordeal done only when it was unavoidable because mud roads were the norm, and often impassable at certain times of the year. During the 1850s horse railways were huge improvements over early mode of travel, as the rails made passage independent of the road surface. Boston had a fleet of 8000 horses and in 1858 Pennsylvania’s first horsecar service opened in Philadelphia. Pittsburgh’s horsecar service opened in August of 1859 along Penn Avenue and by 1869 boasted 22.7 miles of horse powered street railway tracks. The use of animal power created a serious waste problem and contributed to disease. Horses were expensive due to the cost of acquisition, care and food, not to mention the limited daily use of each animal.

Cable car technology offered relief from these expenses. In 1873 Andrew Hallidie opened the world’s first cable car in San Francisco and the technology was adopted in numerous large cities including Pittsburgh. Beginning in 1888 the first cable cars in Pittsburgh began operating along Fifth Ave. During this era, lines ran 5-6 miles out from the city center.

### **In the Beginning**

The electric streetcar was an experimental proposition until 1888 when Frank Sprague put everything together in the right way in Richmond, VA. But it took several years of operation to prove that Sprague was right and the others wrong. As a consequence, some of the competitors remained in the business into the early 1890s. Edward Bentley and Walter Knight were a Cleveland team commissioned in 1888 by the Observatory Hill Passenger Railway Company to electrify a route in the City of Allegheny (now Pittsburgh’s North Side, annexed in 1907). The Bentley and Knight system used underground (conduit) power collection using a slot in the street. The propulsion system and conduit used to move these cars were not efficient and this system was replaced with the proven Sprague technology.

One of the vital forces in the development of American cities was the arrival of the electric streetcar at the end of the nineteenth century. Its quiet, efficient propulsion was far ahead of the transport of the time, and its higher speeds made it possible for people to live much farther from their work than when they had to depend on

walking or on the slow horse and cable cars of that era. In 1890 electric railway service as we know it opened in Pittsburgh.

The beginning of the mobile America we know today has its roots in the trolley, and trolley cars ushered in the Electric Age. Cities expanded along the streetcar routes built out from their centers. Local examples of this expansion are the communities of Beechview, Brookline, Dormont, Mt. Lebanon, Forest Hills and West View. Bradford Woods is an example of a community founded by the trolley company itself. Cities and towns were connected to one another by interurban streetcar lines.

Also, in Pennsylvania, trolleys connected many of the mining communities with nearby towns and were extended to industrial facilities near the cities. Because much of the labor for the mills and mines came from the nations of Eastern Europe, the trolleys became a veritable rolling melting pot and helped to expedite that process known as Americanization.

Through this vital time, the trolley blended cultures and people on a daily basis. As the telephone came into popular use during this time, people could arrange impromptu visits with relatives and friends while merchants could phone an order to city supplier for immediate shipment via the trolley company's freight service. The farmer could ship his milk to market on those same freight cars, too. Advertisements in the trolleys here at the Pennsylvania Trolley Museum let us catch a glimpse of America of yesterday with the trends and prices.

Trolleys became a way of life during the early 1900s. Automobiles, no longer a novelty, were still not practical for everyday urban travel as roads, parking and costs were still a deterrent. The trolley was the preferred means of getting around, and ridership was still growing. Theatres, amusement parks, schools, and stores were served best by the trolley, as were the industrial plants that provided so many jobs. In 1899 Kennywood Park opens and is still in operation today, as is Dorney Park near Allentown. Olympia Park in McKeesport, Cascade Park in New Castle, Luna Park in Scranton, and West View Park in West View are other examples of electric trolley parks.

By the 1920s though, things began to change. The advent of radio, which kept people home at night, and the growing popularity of the auto led very quickly to a falloff in non-work-related travel. The street railways' early construction shortcomings became horribly evident, as the 20-year track built with 30-year financing fell apart. Cities began paving streets for the growing pack of automobiles. Many transit operators faced with declining patronage and increased maintenance costs began to convert to busses or go out of business. The Great Depression beginning in 1929, made a grave situation even worse, killing off most of

the interurbans and many of the small-town systems. It was during this time that urban operators banded together to develop a genuinely modern streetcar.

### **Birth of the PCC**

During the early years of the Great Depression, leaders of trolley companies across the country realized that they needed truly modern vehicle if they were to compete in any way with the automobile. They formed what was known as the Presidents' Conference Committee to develop that vehicle, which in its ultimate form came to be universally known as the PCC car.

Pittsburgh Railways was an enthusiastic supporter of the project. One of its engineers, Dan Bell, was granted the patent for the body design. The company was the first to haul passengers in one. Before the car entered regular service early in 1937, it was taken around the town for demonstration rides on many of the company's routes.

### **World War II**

The wartime years and beyond brought temporary prosperity to the electric railway industry, largely due to government rationing of fuel and especially rubber. Employment boomed, and meant heavily increased traffic for transit companies. Motormen shortages led to the employment of women as "motorettes." Transit systems strained to handle the demands, which continued after the war's end until autos, gasoline and tires again became available.

Impressed that passenger counts on its interurban routes to Charleroi and Washington were as high in 1945 as they were in the mid-1920s, Pittsburgh Railways ordered 25 new streamlined PCC type streetcars fitted for interurban service. By 1949, however, enough automobiles were available, mine employment was down, and the volume of passengers carried on the interurbans dropped precipitously. In 1953, with the new cars only four years old, the company abandoned all service south of Library and Drake and reassigned the cars to Pittsburgh suburban service.

### **The Decline of the Trolley**

Many trolley systems were simply worn out by the time World War II came to a close. Most often cities bought fleets of cheap new buses, since the industry was again having trouble meeting the costs of new track and paving. From the mid-1950s, the thrust of transportation development was directed at expressways, shopping malls, and fast food outlets – all things which seemed to require an automobile in order to be used. New appliances and entertainment media – especially television – added to the spectrum of recreational life, but again caused significant declines in non-rush hour transit riding. The number of North American

cities retaining the use of trolleys as a means of public transport was reduced to eight.

### **Renaissance**

From the 1980s it was recognized that due to so many automobiles that roads were becoming hopelessly clogged and the air in urban areas dangerously polluted from the overabundance of personal transportation, and urban planners began to recognize the merit in reviving the trolley technology – now calling it light rail. Cities such as Boston and Toronto modernized their trolley lines, leading other cities such as Pittsburgh and Philadelphia to follow suit. Computer technology has dramatically speeded up our lives and is now extensively used in light rail technology.

### **Summing it up**

The streetcar served well through two world wars and a depression. Around the beginning of the twentieth century, when a person saw an electric street car for the first time, it was most likely also the first time that person saw electric lights, felt electric heat, or saw any vehicle moving along quietly that wasn't pulled by an animal or powered by a loud, chugging, smoking steam engine. Thousands of people relied on the trolley to get to work every day as well as to visit friends in nearby towns or to spend a Sunday afternoon at an amusement park.