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# San Francisco's Trolley Cars

by  
Mike Prero

Did you know that San Francisco cable cars are the only moving National Historic Landmark, and 9.7 million people take a ride on these transports each year? Traveling only nine mile per hour, the cable cars are powered by electric motors that turn these seemingly endless loops of cable. The motors that run the cables are housed at the Cable Car Barn Museum, located in San Francisco.

The city has several historic streetcars that run between the Ferry Building, along the Embarcadero, and to Fisherman's Wharf. The streetcars only run on Market Street and Church Street when they are pulling into and out of service.



Trolley buses (also known as "trolley coaches" or "trackless trolleys") are vehicles with rubber tires, and motors powered by electricity from overhead wires.

The word trolley refers to the poles on the roof of the bus that are used to transmit the electricity from the overhead wires. To differentiate trolley buses from the streetcar trolleys and cable cars, trolley buses are commonly called "Electric trolley buses."



The driving force behind the San Francisco cable car system came from a man who witnessed a horrible accident on a typically damp summer day in 1869. Andrew Smith Hallidie saw the toll slippery grades could exact when a horse-drawn streetcar slid backwards under its heavy load. The steep slope with wet cobblestones and a heavily weighted vehicle combined to drag five horses to their deaths. Although such a sight would stun anyone, Hallidie and his partners had the know-how to do something about the problem.

Hallidie had been born in England and moved to the U.S. in 1852. His father filed the first patent in Great Britain for the manufacture of wire-rope. As a young man, Hallidie found uses for this technology in California's Gold Country. He used the wire-rope when designing and building a suspension bridge across Sacramento's American River. He also found another use for the wire-rope when pulling heavy ore cars out of the underground mines on tracks. The technology was in place for pulling cable cars. The next step bringing Hallidie closer to his fate was moving his wire-rope manufacturing to San Francisco. All that was now needed was seeing the accident for the idea to become full blown—a cable car railway system to deal with San Francisco's fearsome hills.

In the late 1800's, electric motor technology was perfected. The street railway industry immediately seized upon this new source of power as a way to solve the many problems associated with operating horse cars. The first successful electric street railway installation in the United States, was in Richmond, Virginia in 1887. By the time of World War I, the street railway industry was the fifth largest industry in the United States, employing well over 100,000 people nationwide.

Do you know how the trolley got its name? The shoe or wheel at the very end of the trolley pole, the part that actually touches, and runs along the underside of the overhead wire, is called the trolley. So, the trolley is attached to the trolley pole, which is attached to the trolley car, and that's how the trolley car got its name. Although the early electric trolleys were small, and not very powerful, they were still a lot faster than the horse cars they replaced. The early electric trolleys were very small, about the size of a typical horsecar, and had one truck or set of wheels. They were not very powerful, but were faster than a horse drawn omnibus or horsecar.

The great popularity of the electric trolleys with the riding public, soon created the need for larger and more powerful trolleys, so that the trolley companies could keep up with the huge demand for service. During the warm weather months, many trolley companies operated open trolleys, which were very popular with the riding public. The open cars became known as "Breezers" to the people who rode them. They were open on all four sides, to provide a cooling breeze on a warm summer day. It was the trolley company's way of providing "air conditioned" service.

Many trolley companies, built and operated amusement parks along their lines, as a way of generating extra revenue, during the warm weather months. There are still a number of amusement parks left in North America, that were originally built and operated by trolley companies. Coney Island, in New York is probably one of the most famous. In New England, there are still several amusement parks that operate to this day (2002), that were originally owned by trolley lines. As competition from automobiles and buses increased, many trolley companies were forced to take drastic cost cutting measures. Many trolley lines did away with the conductor's job, and converted their trolleys for one man operation.

*[<http://www.trolleystop.com/trolleycar.htm>; <http://www.sfcablecar.com/history.html>]*