

Introduction to the Interurbans

What They Were – What They Did – Why They Are Important

Highway trailers ride railroad flat cars on long trains all across the North American Continent. Electric high-speed trains carry passengers across Europe, Africa, and Asia. Next day package deliveries come directly to your door. All familiar sights in 2023. All unheard of over a century ago.

In the middle of the Roaring Twenties, when permanent American prosperity seemed assured, these new technologies were rising from an industry that was dying in the aftermath of the First World War. Radical technologies usually arise when an industry is in its infancy, and again during its decline.¹ It seems that every dying industry seeks salvation in desperate measures. By 1925, the interurban electric railway industry was dying and desperate.

Only three decades before their decline set in, the first electric interurban railways were promoted as a means of liberating rural Americans from the horse & buggy and the tyranny of the schedules of the steam railroads. But convenience at the turn of a key waiting in everyman's driveway was the cause of their death. The interurban era was buried before the Great Depression. But evidence of the interurban's desperate measures endures.



Winona Interurban Railway, Leesburg, Indiana, circa 1906. The options for rural Americans to reach the next town were few in 1906 – horse & buggy was the only inexpensive personal transportation. Henry Ford's Model T automobile was still two years away.

¹ John H. White, Jr., *The American Railroad Passenger Car* 193 (1978).

The Coming of the Electric Interurban Railways

Given that the subject of this work, the Chicago, South Shore and South Bend Railroad (South Shore Line), is an electric interurban railroad, consider how the electric interurban railroads came about. The interurbans were a common element of North American transportation first conceived as extensions of street railways in the 1890s as a means of using the then new electric railway technology to provide transportation for rural residents to urban areas.²

Most street railways in the 1870s used animal power for locomotion. An equine influenza epidemic, The Great Epizootic of 1872, incentivized 27 American cities to convert to a system of fixed location steam engines pulling a cable through a slot in their streets to tow “cable” streetcars at a fixed speed.³ But at its peak, there were only 305 miles of urban cable car track so equipped.⁴ After Thomas Edison’s invention of the light bulb in 1879, his experiments in central station electric power generation at Pearl Street in Manhattan offered the potential to provide adequate power to electrify street railways.⁵

After the perfection of the central station in 1882, experiments in the control of electric motors for street railway use were possible. Charles J. Van Depoele and Leo Daft were soon exhibiting experimental railways in several North American cities; the Van Depoele operation at South Bend, Indiana, in 1885 was reported to be the first commercial electric trolley line operated in a city street.⁶ Advances in control and motor mounting technologies made by Frank J. Sprague at Richmond, Virginia, in 1888 perfected the systems of street railways.⁷

At the time of Sprague’s success at Richmond, there was an unmet demand for transportation by increasingly wealthy and literate farmers most notably in the Midwestern states of Ohio and Indiana.⁸ Transportation options in rural areas were few at the turn of the century, the most common being the personal transportation of the horse & buggy, it being limited in speed and distance by the stamina of the horse and the condition of the road. Steam railroads ran trains infrequently, usually once daily, and stopped only in towns. Steamboats stopped anywhere needed, but were slow and available only on navigable streams.⁹

To meet the demand for frequent rural transportation, street railways built extensions into farm country; Leo Daft’s 1887 street railway installation at St.

² George W. Hilton & John F. Due, *The Elec. Interurban Rys. in America* 8, (1st ed. 1960).

³ *Id.* at 4-5.

⁴ George W. Hilton, *The Cable Car in America* 158 (1st ed. 1971).

⁵ Robert L. Bradley, Jr., *Edison to Enron: Energy Markets and Political Strategies* 46 (2011)

⁶ *Electric Ry. Work in America Prior to 1888*, 24 *St. Ry. J.* 559, 560 (1904).

⁷ Frank J. Sprague, *Some Personal Experiences*, 24 *St. Ry. J.* 566, 570 (1904).

⁸ Hilton & Due, *supra* note 2, at 7-8.

⁹ *Id.* at 8.

Catherines, Ontario, was the first.¹⁰ Pioneering lines built in 1893, one in Ohio and the other in Oregon, were the first to obtain technological success.¹¹

The interurbans were a significant step in the development of transportation in the United States and Canada because of the convenience that they brought to rural travelers by offering frequent service. Henry A. Everett was among the first interurban promoters in the United States, having built the Akron, Bedford & Cleveland in 1895. Everett understood how convenience influenced speed:

There is, of course, a very material difference in the running time between the steam roads and the electrics, but we find that a number of our patrons prefer the trolley because of the frequency of the cars, which enables them in many cases to reach their destination more quickly than if they waited for the steam train.¹²

In an auto-centric culture it is hard to imagine how this was an improvement over the transportation system that existed in the 1890s. Before the coming of the interurbans, a trip for a rural resident to a nearby city was often a two-day ordeal limited by the tyranny of the once-a-day scheduled service offered by the steam railroads.



Local train of the Idaho and Washington Northern Railroad, Usk, Washington, 1912. Traveling south from Usk to Spokane was an overnight affair. The once-daily train left Usk at 3:44 pm and arrived at Spokane at 7:10 pm. The return train from Spokane departed at 7:30 am arriving at Usk at 10:46 am. The 82-mile round trip took 19 hours and did not allow a shopper from Usk time in Spokane to shop unless she stayed another full day.¹³

¹⁰ *Id.* at 9.

¹¹ *Id.*

¹² Henry A. Everett, *The Development of the Electric Interurban Railway*, 24 St. Ry. J. 548 (1904).

¹³ Chicago, Milwaukee and St. Paul Railway public timetable, Oct. 5, 1919.

The interurbans generally ran every hour. A farm couple headed to shopping on the interurban could ride to an urban downtown shopping area, shop for a couple of hours, and return home before dinner. Traveling salesmen could visit four or five towns in a day rather than the two that were possible previously.¹⁴ Such convenient transportation was liberating.



Local car of the Washington Water Power Company, Medical Lake, 1905. Local cars from Spokane ran west to Medical Lake every two hours; trains on the main line ran every hour. Shoppers leaving Medical Lake in the morning for Spokane had a half day or full day to shop before returning the same afternoon or evening.¹⁵

Products destined to the farmer benefitted. On-line package delivery on the interurbans was much faster than anything offered before: one could order quickly needed items over the telephone from say, Sears, Roebuck & Co., and have them delivered the same day. In the 21st Century, you can call FedEx or order through Amazon Prime and the best you can do is have it delivered the *next* day. And farm

¹⁴ Hilton & Due, *supra* note 2, at 91.

¹⁵ *Id.* at 390.

products destined to cities benefitted as well. The high-speed interurbans were so fast that milk was often safely shipped unrefrigerated.¹⁶



Milk for The Hershey Company from Lebanon, Pennsylvania, dairies being loaded into an unrefrigerated motorized box car, a box motor in electric railroading parlance; February 1941. Below, the crew is loading Snickers and Milky Way bars at Hershey consigned to sellers in Lebanon. Milton Hershey built two interurban railroads to handle the raw commodities and finished products of his chocolate empire – one in Pennsylvania and the other in the sugar cane fields of Cuba.



¹⁶ *Id.* at 126-7.

Most of the interurbans were built in two great booms, the first ending in 1904 because of the effects of the Rich Man's Panic of 1903, the other ending in 1908 impacted to an even greater extent by the Banker's Panic of 1907.¹⁷ Ohio had the greatest interurban mileage, and Indiana had the most complete network.¹⁸ Other large interurban networks developed in Michigan, Illinois, Wisconsin, Iowa, Texas, Utah, California, Oregon, Washington, Ontario, and British Columbia. By the time the last interurban was constructed in 1927, there were interurbans in forty-one U.S. states and five Canadian provinces.¹⁹ At its peak, there were 16,100 miles of interurban railroads in the United States alone.²⁰

But the lifecycle of the electric interurbans was short.

In 1925, the year that the Chicago, South Shore and South Bend Railroad Company was formed, a tremendous surge in interurban abandonments had begun. Most of the Midwestern interurban network was gone at the start of World War II. After the war, nearly all of the remaining interurbans were quickly abandoned – the South Shore Line became the last interurban in the early morning hours of 21 January 1963.

Because infancy overlapped decline in the interurban electric railroad industry, the interurban railroads were in a near-constant state of experimentation with services and equipment. When the interurbans were built, generally there was little thought given to freight service beyond what could be hauled in small baggage compartments. When passenger revenues could no longer cover bond interest, the interurbans that could turned to hauling carload freight and experimented with hauling containers and trailers on flatcars (TOFC).

Although TOFC was not a generally accepted practice on the steam railroads until 1952, with chronic driver shortages the trucking industry now willingly hands off trailers and containers to the railroads. In 2020, intermodal traffic accounted for 25% of North American railroad revenue.²¹ The concept of trailers and containers on railroad cars pioneered by the interurbans are now a common sight all across North America.

¹⁷ *Id.* at 25, 33.

¹⁸ *Id.* at 41.

¹⁹ *Id.* tabulated from data at 255-423.

²⁰ *Id.* at 33.

²¹ Ass'n of Am. R.R.s, Freight Rail & Intermodal, <https://www.aar.org/issue/freight-rail-intermodal/> (last visited Aug. 31, 2021).



Hauling standard railroad freight cars on most of the Midwestern interurban network was a physical impossibility – street running in cities and towns was hampered by restrictive clearances suitable for streetcars, not locomotives and long trains. The Illinois Traction System built bypasses around nearly all its street-running and survived as a diesel-powered railroad after electric mainline passenger service was abandoned on 3 March 1956. With carload freight, the interurbans tried to compete head-to-head with the steam railroads.



South Shore Line Ferry Truck trailer at Kensington, Chicago, 1927, ready for loading on a specially equipped South Shore Line flatcar. With Trailer-on-Flatcar service, the interurbans tried to compete with the steam railroads by having the technological advantage – an advantage that the steam railroads did not embrace for another 25 years.

The interurbans were ahead of the steam railroads in providing comfort and speed even before the industry's decline after World War I. During the Louisiana Purchase Exposition of 1903, the Electric Railway Test Commission drafted plans for testing electric railroad equipment. The draft plans were released the same day that Orville Wright took off for the first successful manned, powered, controlled flight. Among the tests proposed was a test to determine wind resistance at speeds above 40 miles per hour.

A special interurban carbody named Louisiana was built to sit atop a flat car for use as a dynamometer to determine the air pressure against the front, sides, and rear of the car at speeds up to 70 miles per hour.²² The interurban carbody was independent of the flat car through an arrangement of double-ball bearings and wheelsets that rolled on rails attached to the top of the flat car.²³ The tests were conducted from 15 January through 16 March of 1905 on the main track of the Union Traction Company of Indiana between Noblesville and Carmel.

Applying aerodynamic streamlining to the railroad industry was one of those wish-list items that came and went just about every thirty years from nearly the very beginning of steam railroading in America. The efforts of an interurban carbuilder, the J.G. Brill Company, and aeronautics professor, Dr. Felix Pawlowski of the University of Michigan, made elements of streamlining a permanent feature of passenger railroading.²⁴

Dr. Pawlowski conducted wind tunnel tests of Brill's new interurban design, the Bullet. After further tests on the Bullet car, Dr. Pawlowski concluded that 40% of the power needed to propel a car at 70 miles or more per hour could be conserved through streamlined design.²⁵ The interurbans that remained in 1930 needed all the financial conservation they could get. Reducing power requirements was a sound way to get there.

But operating speed benefitted as well. The Bullet cars were capable of nearly 90 miles per hour. Railroad engineering staffs from around the globe took notice and requested information on the Bullets.²⁶

²² Elec. Ry. Test Comm'n, Report to the President of the Louisiana Purchase Exposition 488 (1906).

²³ *Id.* at 509-12.

²⁴ White, *supra* note 1, at 159.

²⁵ *Philadelphia & Western Starts High Speed Service*, 28 Elec. Traction 531, 532 (1931).

²⁶ *Id.* at 531.



Streamlined end of Bullet car #207, circa 1937.

It is called Shinkansen in Japan, Train a Grande Vitesse in France, and ICE in Germany. Today, streamlining and speed are seen across Europe, Asia, and Africa. The concepts of streamlining and high-speed were not a product of the interurban era, but the need to perfect it was. The most recent flowering of that which the interurbans pioneered is found on electric high-speed rail lines on every continent that is not in the Americas.

Speed can be a real personal issue when that needed item is needed immediately. Federal Express (now FedEx) advertised that it could get it to you when “it absolutely, positively, has to be there overnight.” But the interurbans pioneered electric express same day shipping.

Packages shipped on electric passenger cars that averaged 50 to 60 miles per hour and that left their terminals every hour made for a convenient, if not overly profitable service. A critical part for a farm implement needed at harvest could be placed on the next outbound car and delivered to the hands of the farmer in time counted in hours.



Sacramento Northern train #12 left San Francisco at 7:00 am with a package delivery for a customer at Lafayette. Only one hour and seven minutes later, at 8:07 am, the consignee had his package in his hands. Same morning service. Photographer Credit: Victor Vincent DuBrutz.

Although the concept of the interurban seems archaic in the 21st Century, the concepts illustrated above are not. In places around the globe, what the interurbans pioneered is now commonplace.