

Charles Harvey: The Man who Elevated New York



Grade 8
Ms. Bellusci
Social Studies
PEARLS Hawthorne

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Overview



Who is Charles Harvey?

Charles T. Harvey invented the first elevated train. His work, the IRT (Interborough Rapid Transit) Ninth Avenue Line, often called the Ninth Avenue Elevated or Ninth Avenue El, was the first elevated railway in New York City. The use of overhead trains helped solve the traffic problems New Yorkers faced daily, and paved the way for modern transit such as subways that Americans depend on for their daily commute.



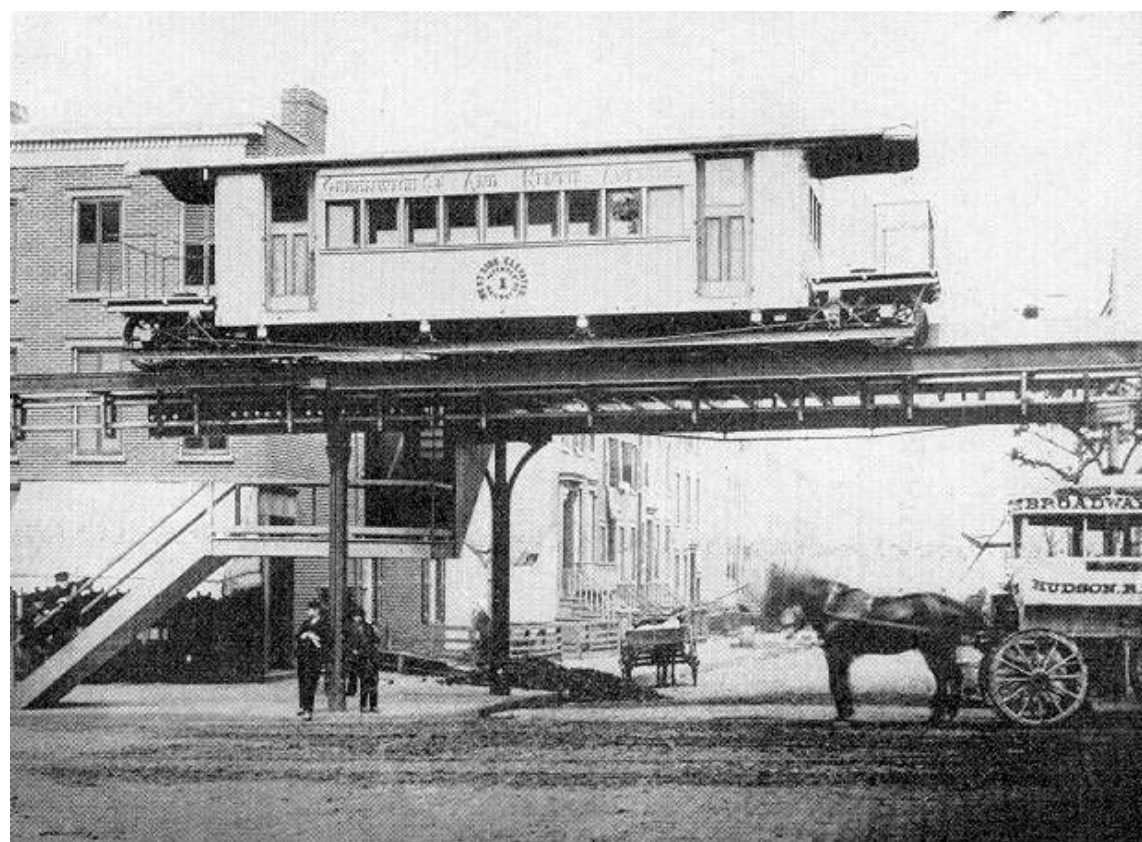


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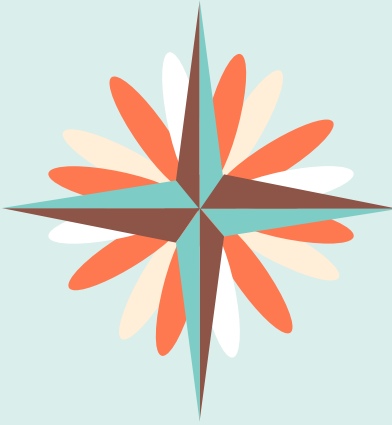
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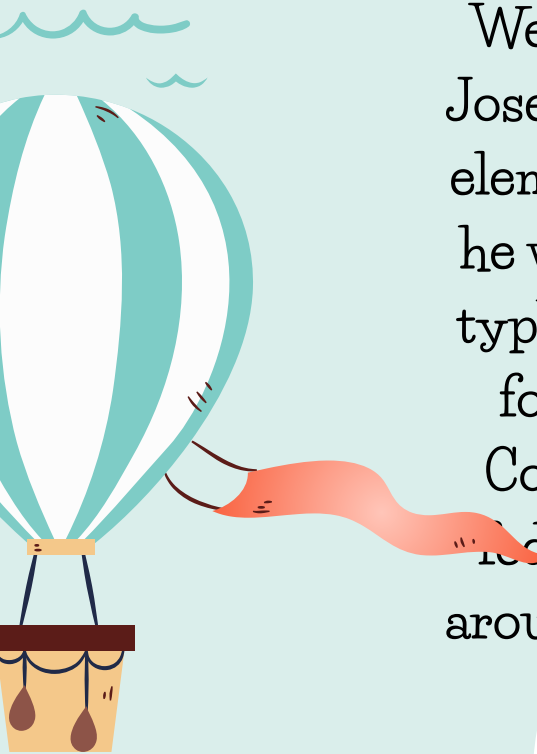
Early Life

01

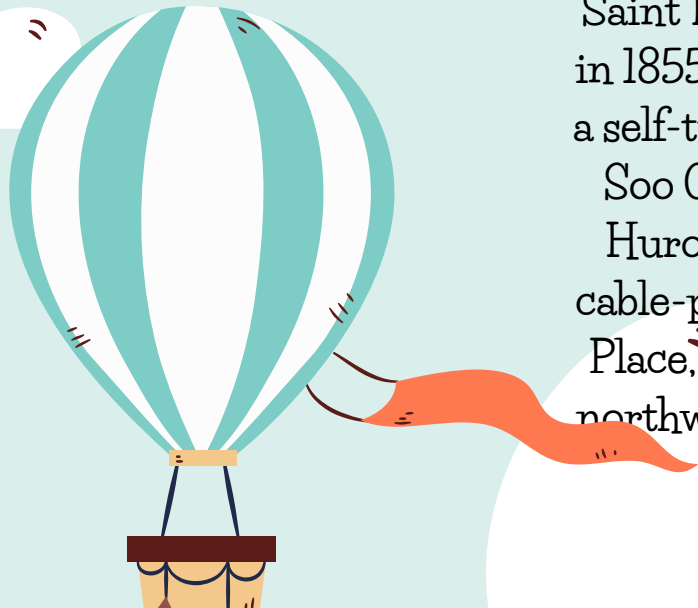


Early Life

Charles Thompson Harvey was born on June 26, 1829, in Westchester, Connecticut. His parents were Reverend Joseph Harvey and Catherine Dèsirè Seldon. He attended elementary school and later attended academies. In 1852, he was in Northern Michigan recovering from a bout of typhoid and doing business as an agent and salesperson for the Fairbanks Scale Company. Harvey heard that Congress had passed an act granting 750,000 acres of federal land to any company which could build a canal around the Saint Mary's Falls located at Sault Ste. Marie, Michigan.



Harvey was appointed as the general agent in charge of operations, despite the fact that he was a salesman and accountant, he became the primary contractor and engineer. Learning on the job, he built the Saint Mary's Falls Ship Canal, which opened in 1855. In 1867, Charles T. Harvey (1829-1912), a self-trained civil engineer who had built the Soo Canal uniting Lake Superior and Lake Huron, built an experimental single-track cable-powered elevated railway from Battery Place, at the south end of Manhattan Island, northward up Greenwich Street to Cortlandt Street.



Breaking Barriers

02

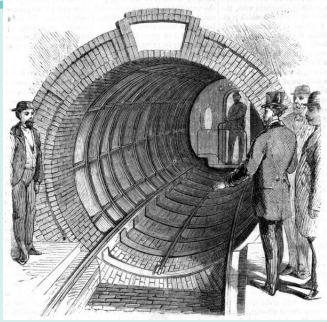


Breaking Barriers

Although the phrase "traffic jam" is a byproduct of the automobile age—apparently coined around the year 1908, and making its first *New York Times* appearance in 1916—the concept of immovable, insurmountable traffic was already a painfully vivid one for mid-19th century New Yorkers. How to solve New York City's traffic problem, especially the ordeal of travel along Manhattan's avenues connecting uptown and downtown? The ambitious Charles T. Harvey had the answer, however he soon found out that he was not the only one trying to find ways of speeding New Yorkers through the city. Other ambitious inventors, planners, and visionaries proposed solutions, but they were ultimately blocked by politicians, powerful landlords fearful of disruptions to their street-level property, and financing problems.



Before Harvey's Elevated Mass Transit.....



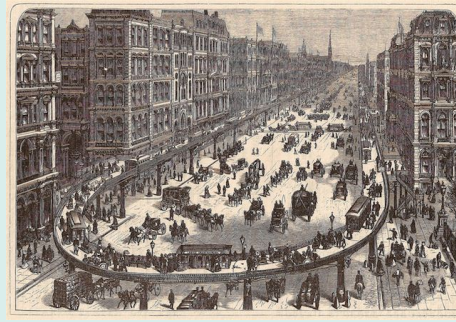
London and Greenwich Railway

The world's first entirely elevated railway had opened in London in 1836, but it had been constructed on a brick viaduct rather than above an existing and functioning roadway.



Arcade Railway

New York's governor vetoed an ambitious plan for an "Arcade Railway" on Broadway that would have displaced horse-drawn vehicles and foot traffic to a new platform high above the street.



Speer's Endless Traveling or Railway Sidewalk"

A moving platform-- as in this proposal for "Speer's Endless Traveling or Railway Sidewalk"-- would have allowed travelers to stroll or ride in special chairs above the traffic.



Swett's Railway

During the 1850s, engineer James Swett proposed to hang passenger cars below steam locomotives in an early vision for an elevated railway.

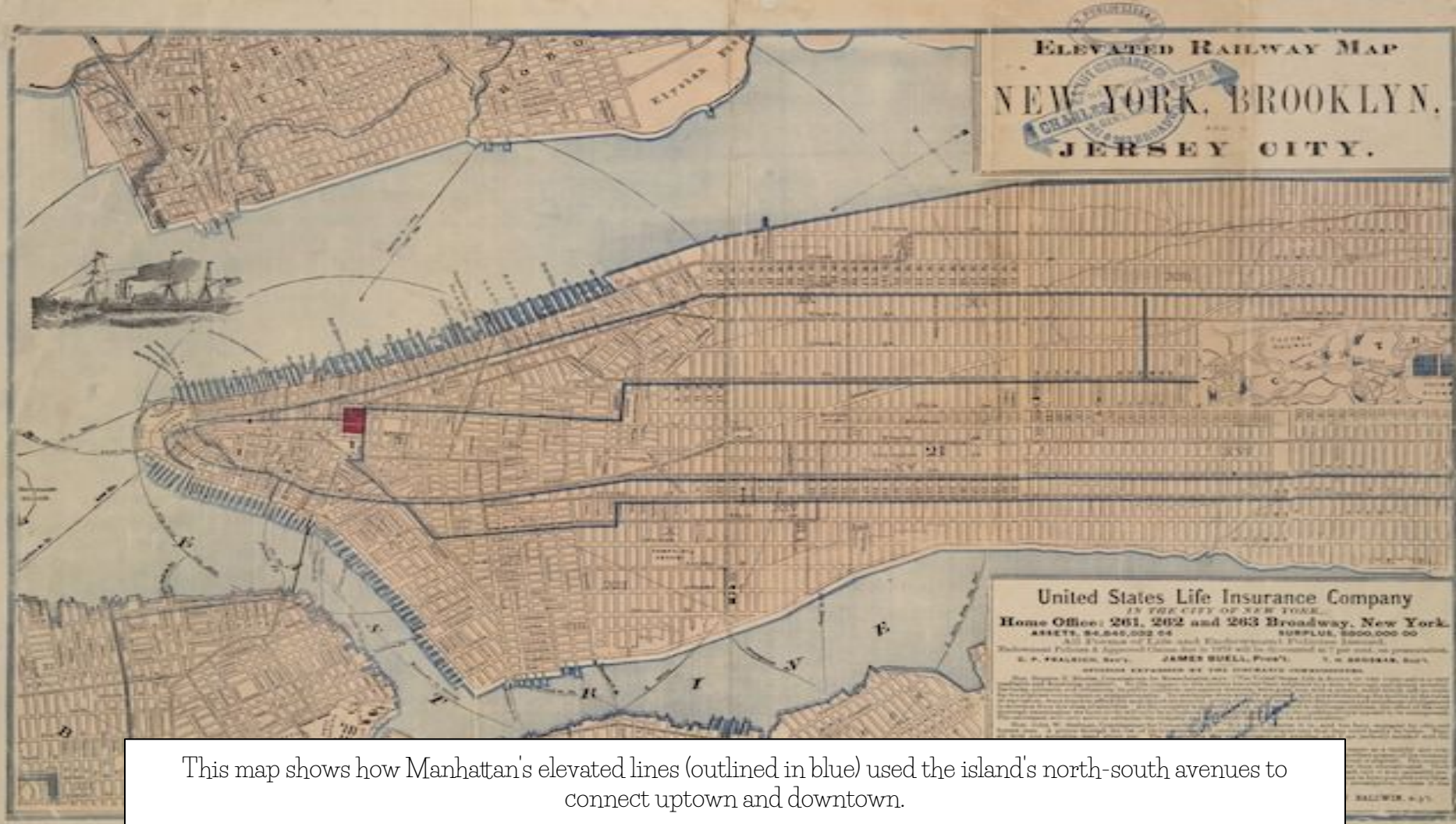
In 1867, on an elevated track erected over lower Manhattan's Greenwich Street, Harvey demonstrated the viability of vehicular traffic on rails supported by an iron superstructure thirty feet above the street and sidewalk. By 1868 a cable-driven test line ran for about half a mile on Greenwich Street, although it was not accepting passengers.





On April 20, 1866, the West Side and Yonkers Patent Railway Company was formed by Charles T. Harvey and eventually was awarded the approval to begin construction of an elevated line operating on Greenwich Street, then Ninth Avenue from Battery Place to 30th Street. His company had been chartered with a subscribed capital of \$100,000, to build a 25-mile (40 km) elevated railroad from the southern extremity of the city northward its length and thence to the village of Yonkers.





This map shows how Manhattan's elevated lines (outlined in blue) used the island's north-south avenues to connect uptown and downtown.



Harvey made his reputation working on a shipping canal between Lake Superior and Lake Huron. He then devoted himself to railroad construction and founded the village of Harvey, Michigan. Then as now New York City had a magnetic effect on ambitious entrepreneurs, and in 1865 Harvey sold his railroad interests and came to New York. He paved the way for many future railroad companies and the train industry. Yonkers now has 26 daily trains.

Obstacles

03



Obstacles Harvey's Line Faced

1

The cables broke frequently.

2

Accidents often forced passengers to reach the street by ladder.

3

The cable cars failed and had to be replaced by steam locomotives.

4

Legal problems because people wanted the franchise for themselves.

5

The company had so many accidents, that Harvey was eventually kicked out of his own company.

The Ninth Avenue Derailment

Harvey's company, the IRT Ninth Avenue Line, underwent the worst accident in the history of NYC elevated railways. During the morning rush hour on September 11, 1905, a Ninth Avenue train following a Sixth Avenue train was mistakenly switched onto the curve. The lead car remained on the tracks but the second was thrown right off the trestle and down to the street, coming to rest with one end on the ground and the other across the third rail on the trestle, which sparked an electrical fire. The roof was torn off and some passengers were crushed under the car by a falling truck and motor equipment from the third car, which came to rest hanging off the edge of the trestle against the front of an apartment building, into which some passengers were able to escape through a window. The rest of the train also derailed but continued down the trestle along Ninth Avenue. The death toll was 13, and 48 serious injuries in the second car.





This depicts the 9th Avenue Derailment

04

Legacy





On average,

4,300,000

People ride the New
York City Subways per
day

Even though the railroad had its problems, it paved the way for future railroad companies and modern day subways. Now, subways and trains are able to rise over the roads to allow for maximum transportation. Cars and buses can commute on the roads while subways and trains move above. As illustrated in the previous slide, millions of Americans rely on the subway system for transportation. Charles Harvey's contribution allows everyone to get to their destination as quickly as possible. Thanks to Harvey, automobiles and trains can coexist in peace.



Standards



Standard 1: History of the United States and New York

Students will use a variety of intellectual skills to demonstrate their understanding of major ideas, eras, themes, developments, and turning points in the history of the United States and New York

Standard 3: Geography

Students will use a variety of intellectual skills to demonstrate their understanding of the geography of interdependent world in which we live--local, national, and global--including the distribution of people, places, and environments over Earth's surface

Standard 5: Civics, Citizenship, and Government

Students will use a variety of intellectual skills to demonstrate their understanding of the necessity for establishing governments; the governmental system of the United States and other nations; the United States Constitution; the basic civic values of American constitutional democracy; and the roles, rights, and responsibilities of citizenship, including avenues of participation



Themes

Theme 3

Time, Continuity,
and Change

Theme 4

Geography, Humans,
and the
Environment




Theme 9

Science,
Technology, and
Innovation



Theme 10

Global connections
and Exchange






Reading and Writing Standards



Standard RH7

Integrate visual information (e.g., in charts, graphs, photographs, videos, or maps) with other information in print and digital texts.




Standard WHST5

Conduct Short research projects to answer a question (including a self-generated question by the end of grade 8), drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration.

Standard WHST6

Gather relevant information from multiple print and digital sources, using search terms effectively; assess the credibility and accuracy of each source by applying discipline-specific criteria used in the social sciences or sciences; and quote or paraphrase the data/accounts and conclusions of others while avoiding plagiarism and following a standard format for citation.



Resources



Resources



<https://www.mcny.org/story/charles-t-harvey-elevating-transit-19th-century-new-york-city>



https://en.wikipedia.org/wiki/IRT_Ninth_Avenue_Line



<https://www.midcontinent.org/rollingstock/CandS/dsp-passenger/nyelrail3.htm>



<https://www.yonkersny.gov/live/about-yonkers/rich-history>



https://en.wikipedia.org/wiki/Early_history_of_the_IRT_subway



<https://www.ny.com/transportation/subways/>



Thanks!

CREDITS: This presentation