

TIME TRAVEL

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San Franciscan Transportation: A Living Timeline

Every day in The Golden City, including during IMS2025, an autonomous car crosses paths with a cable car, proudly showing off the two ends of a 150-year transportation timeline. Both revolutionized the city, with cable cars offering a quicker and safer mode of transportation than horse-drawn carriages, and autonomous vehicles providing more cost-effective rides for commuters and tourists alike. They both sparked excitement and controversy, as all new technology does. The cable car remains an impressive application of simple technology, prompting thoughts about the influence of radio on modern transportation. Let's use San Francisco to dive into the timeline and see how radio had an increasingly strong influence on transportation.



Both timelines began in the 19th century, with cable cars first in action in 1873 and the first radio patent approved in 1897. A few years later, in 1908, Henry Ford introduced the Model T, the first mass-produced car. About a decade later, in 1919, the world experienced the first clear transmission of human speech over radio. This late 19th- to early 20th-century period marked the beginning of two separate timelines that needed separate incubation but were destined to converge.

Following about a decade of separate growth, each industry produced a step-change technology. The RF industry was evolving beyond AM, and amateur radio operators invented FM. Meanwhile, the auto industry was just beginning to embrace and implement AM radio as a form of entertainment, marking the first real interaction between the auto and radio industries.

Radio's transformative impact on the auto industry began at the turn of the century, when GPS became commercially available and radio became more than entertainment. Although push-to-start technology was introduced in luxury cars in the 1990s, the early 2000s saw an increase in this RFID technology in everyday commuter cars, and today, this is the standard.

The early 2000s brought Bluetooth technology. Not only could Bluetooth be used for calling, but it paved the road for future music and navigation broadcasting, allowing entertainment personalization and a higher safety rating. As humans were safer and happier in cars, radio engineers worked on the latest technology: autonomous vehicles.

In 2008, LiDAR technology was put to the test: delivering a pizza via a robotic Prius. The pizza delivery was a successful mission, prompting the next milestone: the first fully autonomous ride on public roads. The success of this mission in 2015 led to a significant increase in confidence, accelerating the transition from R&D products to reliable tools for autonomous cars. After five years of rigorous testing and revisions, Waymo introduced a fleet of autonomous cars in Phoenix, and last year, in 2024, they were introduced in San Francisco.

The radio and automobile industries are highly intertwined, but have not always been this way. San Francisco's cable cars are an easy example of transportation before radio. Riding one downtown and seeing the effort and skill needed by the driver makes one appreciate the comforts and safety measures given to us by modern radio applications.