

A Closer Look at the History of Diesel Locomotives

The year 1918 marked the precursor to the diesel locomotives we know today. The United States, much like the rest of the world, had enjoyed the fruits of its labor during the Industrial Age of the previous centuries. At that time, the steam-powered locomotive was born and train travel became a necessity for some, and a luxury for others, seeking to travel across the great nation. Technology wanted to move past the steam engine, however, and a company by the name of American Locomotive Company -- ALCO -- partnered with two major players remaining in the industry today, Ingersoll-Rand and General Electric, to design a diesel-powered motor car to run on the Jay Street Connecting Railroad #4 in New York City.

The GM-50, as it was called, was the first diesel-electric powered vehicle to find its way on the railroad tracks, and by 1924 the trio of companies had designed a more advanced diesel motor that powered a 60-ton boxcar. The Central Railroad of New Jersey purchased the engine that produced 300 horsepower of energy, and the Baltimore and Ohio Railroad, commonly known as B&O in those days, followed suit. Working with B&O, the Electro-Motive Corporation, which later became known as General Motor's Electro-Motive Division, fine-tuned the diesel-electric locomotive design in the 1930s and B&O began running the engines on North American railroads.

Diesel-electric locomotives took off because experts and laypeople alike easily understood their mechanics. A diesel locomotive generates energy to produce enough power to drive the electrical generator found within the engine. The generator powers the traction motors, and the traction motors are the engines that turn the locomotive's wheels. This series of one powerful piece supporting and driving another powerful piece produces an efficient way to propel the immense locomotive across the tracks, far more efficient than a steam engine. Each part of the diesel-electric motor serves its own purpose, and the diesel-electric locomotive generates and utilizes its own power to motion the train.

As the technology behind the diesel engines advanced, B&O continued to run its trains on diesel-electric power. By 1935, B&O was powering its smaller passenger trains using diesel-electric locomotives, and as the technology evolved over the next 50 years, diesel-electric engines beefed up the power to lead heavier passenger and large freight trains across the country. Part of the reason the railroad companies stuck with diesel was its efficiency. Diesel-electric locomotives ran with less fueling than steam locomotives. This kept the trains moving on the tracks instead of having to stop frequently to "refuel" with water and oil. Diesel-electric locomotives also required less maintenance than steam-powered engines. This also kept the engines on the tracks, moving and making money, instead of "in the shop" costing money. Diesel-electric locomotive engines won the hearts of many a railroad company because they were more profitable than a steam-powered locomotive.

Today, new companies have taken over where the American Locomotive Company and the ALCO-GE-IR trio left off. A newer incarnation of diesel-electric manufacturers is a partnership between Electro-Motive Diesel and GE. This company has been building diesel-electric locomotives since 2005. Steam locomotives, and the companies who produced them, finally fell out of complete favor in the mid-20th century, with the final standing steam locomotive

manufacturer, ALCO, closing its doors prior to 1970. Advancement in technology does that -- removes once key players from the game. In part because the key players might not understand the wave of the future; in part because advancements in technology produce a more efficient way to do things. The diesel-electric locomotive is a prime example of technology catching up to the needs of the industry and the people who run it.

For more information on diesel-electric powered locomotives and American railroads, please consult the following links:

- [ALCO, General Electric, Ingersoll-Rand](#) -- This link provides a historical accounting of the beginnings of diesel-electric technology and the companies that drove it.
- [American Diesel-Electric Locomotives](#) -- Enjoy the U.S. National Park Service's historical accounting of America's role in the advancement of diesel-electric locomotive technology.
- [The Physics of the Electric Locomotive](#) -- Hesston College provides a comprehensive report of the diesel-electric locomotive and its beginnings in both Europe and North America.
- [Rail Propulsion, Coupling, and Braking](#) -- Understand how diesel-electric trains start, roll, and stop with an explanation from Iowa State University.
- [The Portal to Texas History: Cotton Belt Train at Dallas Union Terminal](#) -- University of North Texas posted a wonderful picture and facts about the Saint Louis - Southwestern Railroad Train 2, a diesel-electric powered giant that pulled into Dallas Union Terminal in 1952.
- [America on the Move: Model of E-8 Diesel-Electric Locomotive](#) -- View the Smithsonian Institute's model of the E-8 diesel-electric locomotive on display in the Smithsonian Institution.
- [Early History of Diesel-Electric Motive Power](#) -- The University of Wisconsin's digital library presents an excerpt from "The Wisconsin Engineer" in May of 1936 explaining diesel-electric technology.
- [American Locomotive Company Records](#) -- Syracuse University's library presents historical records from the American Locomotive Company during its run on the rails.
- [The Encyclopedia of Cleveland History](#) -- Case Western Reserve University discusses the locomotive history, including diesel-electric, and its impact on Cleveland.
- [Lima Locomotive Works](#) -- Bluffton University presents a historical accounting of locomotive technology from steam-powered engines to the diesel-electrics used today.
- [Jay Street Terminal, Jay Street Connecting Railroad](#) -- Enjoy a historical accounting, including pictures, of New York City's Jay Street rail terminal and railroad.
- [Riding the Rails of History](#) -- Enjoy a trip through the rails of history as told by a University of Nevada, Reno, student who participated in a tour of various rail lines and museums.
- [Sustainable Rail International](#) -- Going back to steam? That's what this University of Minnesota article discusses as the world continues to seek sustainable rail transportation alternatives.
- [Important Milestones in English and American Railway Development](#) -- Pacific Southwest Railway Museum Association provides a comprehensive history of American railroads any enthusiast would enjoy.

- [History of Railroads and Maps](#) -- View a complete history of the different railroads, railroad companies, and train railway maps as provided by the Library of Congress.
- [The National Railway Historical Society](#) -- Peruse the National Railway Historical Society's Web page for anything and everything about railroads past and present.
- [The American Railroads: A Long and Storied History](#) -- American Rails.com is website dedicated to all things railroad. Enjoy the history and pictures of this magnificent form of modern-day transportation.
- [History of the Transcontinental Railroad](#) -- Learn how the Transcontinental Railroad changed the face of North America in this stirring historical accounting of development and building of the great railroads in the U.S. and Canada.
- [Central Pacific Railroad Photographic History Museum](#) -- Nothing speaks of history like pictures do, and the Central Pacific Railroad Photographic History Museum delivers with a photographic accounting of this major railroads life and times.
- [The National Railroad Museum](#) -- No matter what type of railroad history you are searching for, the National Railroad Museum has it. Enjoy the photos and commentary on this website and learn more about this important piece of American history.

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