

Engineer & Conductor Training

Freight railroads are the safest way to move goods over land, a feat made possible by rail employees who dedicate themselves to safe rail operations when they apply to become railroaders. Railroading can be an inherently dangerous job, so railroads take their safety culture seriously. Nothing is more important to rail companies than safeguarding the communities their trains travel through and the employees that operate those trains.

Training is extensive for all rail employees and is especially rigorous for the conductors and engineers operating freight trains. Years of experience as a conductor are typically required to become a freight rail engineer. And to work as a conductor, candidates must undergo training that can last months, with a mix of intensive classroom, real-world training and ongoing exams. Freight railroads use technology, time-tested protocols and teams of senior railroaders to ensure all conductors and engineers are fully prepared to safely operate a locomotive before they ever go out on the mainline alone.

On the next few pages are example steps a trainee must complete to become a conductor, which is a prerequisite to advancing to an engineer and then the steps to become an engineer. Training is a long journey that never ends because conductors and engineers must continue demonstrating safe operations throughout their careers.

Becoming a Conductor

The conductor is responsible for safely switching railcars, monitoring and reporting daily work and organizing the placement of cars to facilitate the loading and unloading of freight.

- **Classroom Learning:** For the first two weeks of initial training, trainees learn safety principles in railroad facilities and around moving equipment, operating rules, railroad signals and more. They also learn how to use railroad reporting systems to document work, complete payroll and log hours of service required by regulation.
- **Field Training:** For the last two weeks, trainees move to an outdoor railroad training center to learn the fundamentals of train movements. This includes how to move railroad cars around a dedicated training yard safely, do shoving movements, secure brakes, inspect equipment, conduct brake tests and use hand signals with specialized lanterns. Trainees repeat these actions over and over until they become second nature.
- **Proficiency Exams:** Throughout initial training, railroads will test trainees repeatedly with quizzes and cumulative tests. They must maintain 85% or higher to advance to in-service training.

- **On-the-Job Training:** After graduating from initial training, trainees start training with a certified conductor, which can last between two to four months or more, depending on the complexity of the location. For example, more rural settings might have less complicated rail activities than a major urban area or port. During this time, trainees are always under the watchful eyes of their mentors.

Each location has its own training plan determined by the local manager. Trainees have regular meetings with the local managers to discuss training progress and any issues that emerge. Suppose the location has remote control locomotive operations systems in a rail yard. In that case, trainees will undergo a specialized training block, including classroom and in the field, for upwards of 80 hours. Using an Operator Control Unit allows a conductor to operate a locomotive while not in the cab.

- **Graduation:** The local manager must assess a trainee's proficiency in several core competencies before they can graduate. The trainee must also pass a physical characteristics exam, which tests their knowledge of the rail network within their territories, including the location of switches, how many there are, their numerical designation or the layout of a customer's facility.

Advancing to Engineer

The engineer operates the locomotive, controls the speed and direction of the train, inspects the locomotive before use and monitors the trip's progress by observing wayside signals and signs. They also observe instruments in the cab detailing train speed, the status of braking systems and other information.

- **Starting with Seniority:** Engineer trainees are identified from the conductor ranks based on seniority and their years of experience. Rising to an engineer requires several years working as a conductor and another five to six months of on-the-job training before gaining certification.
- **Classroom Learning:** Trainees first undergo several weeks of classroom instruction, computer-based instruction and assigned self-study. Training topics include setting up locomotives, handling air brakes, inspecting equipment and troubleshooting.
- **Virtual Learning:** Trainees have time in class every day on the simulator, where they apply the lecture and the self-study material they've learned in class. This intensive simulator training can account for up to three hours of the trainee's day. The simulated runs often mimic the actual territories they will eventually operate over.

Simulators are critical to engineer training because they help trainees develop muscle memory around scenarios they will likely encounter in the field more efficiently and quickly than if they were riding trains. Simulators also prepare trainees to troubleshoot the events they are less likely to encounter, such as a heavy train in mountain territory.

- **Ongoing Exams:** Like conductor training, an engineer trainee must pass a series of exams. These include the rules for operating a train, mechanical knowledge — such as identifying the different parts of a locomotive and how they work together — and railroad signals.
- **Field Training:** If the trainee passes their tests, they return to their home location to begin on-the-job training that lasts five to six months. They will work alongside a certified engineer to operate across their territory. They can't work alone during this time. Federal certification programs require that the trainee become proficient "in the most demanding class or type of service that the person will be permitted to perform."
- **Regular Evaluations:** The local manager evaluates the trainees regularly. They must demonstrate proficiency in approximately 20 areas, including properly complying with speed restrictions and wayside signals, inspecting and setting up locomotives or conducting brake tests. In addition, the manager will assess how the trainee performs by examining electronic recordings of their train trips that capture the trains' speed and movements.
- **Graduation:** A designated supervisor will take a final ride with the trainee. Before the trainee is officially promoted from a conductor to an engineer, the supervisor evaluates their performance, taking into account their training history and discussions the supervisor has had with coach engineers.
- **Training Never Ends:** Training and assessments are ongoing for conductors and engineers. Conductors undergo periodic recertification, including knowledge and rules testing and hearing and vision exams. Railroads are also obligated to conduct operational tests where they observe conductors safely performing tasks.

Engineers are evaluated at least once a year, with additional regular full-performance evaluations. Railroads also regularly check that engineers comply with safe operations per speed restrictions and stop signals.