
Rail Transportation Occupations

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Significant Points

- Opportunities are expected to be good for qualified applicants since a large number of workers are expected to retire or leave these occupations in the next decade.
- Seventy-four percent of these workers are members of unions, and earnings are relatively high.

Nature of the Work

Rail transportation workers are employed by three different types of railroads: freight, passenger, and urban transit (subway and light-rail). Freight railroads transport billions of tons of goods to destinations within the U.S. and to ports to be shipped abroad. Passenger railroads deliver millions of passengers and long-distance commuters to destinations throughout the country. Subways and light-rail systems move passengers within metropolitan areas and their surrounding suburbs. All of these modes of rail transportation require employees to operate, oversee, and assist in rail operations. Rail transportation workers not only work on trains, but also can be found working in rail yards where railcars are inspected, repaired, coupled, and uncoupled as necessary.

Locomotive engineers operate large trains carrying cargo or passengers between stations. Most engineers run diesel-electric locomotives, although a few operate locomotives powered by battery or externally supplied electricity. Before each run, engineers check the mechanical condition of their locomotives, making any minor adjustments necessary and documenting issues that require more thorough inspection. While trains are in motion, engineers move controls such as throttles and airbrakes. They also monitor instruments that measure speed, amperage, battery charge, and air pressure, both in the brake lines and in the main reservoir. Engineers must have thorough knowledge of their routes and must be constantly aware of the condition and makeup of their train, because trains react differently to the grade and condition of the rail, the number of cars, the ratio of empty cars to loaded cars, and the amount of slack in the train.

Railroad conductors coordinate all activities of freight or passenger train crews. Conductors assigned to freight trains review schedules, switching orders, waybills, and shipping records to obtain loading and unloading information regarding their cargo. In addition, they are responsible for the distribution of tonnage in the train and the operation of freight cars within rail yards and terminals that use remote control locomotive technology. Conductors assigned to passenger trains also ensure passenger safety and comfort as they go about collecting tickets and fares, making announcements for the benefit of passengers, and coordinating the activities of the crew.

Before trains leave a terminal, the conductor and the engineer discuss any concerns regarding the train's route, timetable, and cargo. During runs and in rail yards, engineers and conductors

interface electronically with monitoring equipment, traffic control center personnel, dispatchers, and personnel on other trains to issue or receive information concerning stops, delays, and the locations of trains. While engineers interpret and comply with orders, signals, speed limits, and railroad rules and regulations, conductors use dispatch or electronic monitoring devices to relay information about equipment problems on the train or the rails. Conductors may arrange for the removal of defective cars from the train for repairs at the nearest station or stop, and discuss alternative routes with the engineer and dispatcher if there is a defect in, or obstruction on, the rails.

Railroad brake operators assist with the coupling and uncoupling of cars as well as operate some switches. In an effort to reduce costs, most railroads have phased out brake operators, and many trains use only an engineer and a conductor. *Signal operators* install, maintain, and repair the signals on tracks and in yards.

Yardmasters, where present, coordinate the activities of workers engaged in railroad yard operations. These activities, which are also performed by conductors, include making up or breaking up trains and switching inbound or outbound traffic to a specific section of the line. Some cars are sent to unload their cargo on special tracks, while others are moved to different tracks to await assembly into new trains, based on their destinations. Yardmasters tell yard engineers or other personnel where to move the cars to fit the planned train configuration. Switches—many of them operated remotely by computer—divert trains or railcars to the proper track for coupling and uncoupling.

Also included in rail transportation occupations are several smaller occupations. *Switch operators* control the track switches within a rail yard. In rail yards without remote control technology, *rail yard engineers* operate engines within the rail yard. Similarly, *hostlers* operate engines—without attached cars—within the yard, as well as driving them to and from maintenance shops.

In contrast to other rail transportation workers, subway and streetcar operators generally work for public transit authorities instead of railroads. *Subway operators* control trains that transport passengers through cities and their suburbs. The trains run in underground tunnels, on the surface, or on elevated tracks. Operators must stay alert to observe signals along the track that indicate when they must start, slow, or stop their train. They also make announcements to riders, may open and close the doors of the train, and ensure that passengers get on and off the subway safely. Increasingly, the train's speed and the amount of time spent at each station are controlled by computers and not by the operator. During breakdowns or emergencies, operators contact their dispatcher or supervisor and may have to evacuate cars.

Streetcar operators drive electric-powered streetcars, trolleys, or light-rail vehicles that transport passengers around metropolitan areas. Some tracks may be built directly into street pavement or have grade crossings, so operators must observe traffic signals and cope with car and truck traffic. Operators start, slow, and stop their cars so that passengers may get on and off easily. Operators may collect fares and issue change and



Rail transportation workers may spend significant time on the road.

transfers. They also interact with passengers who have questions about fares, schedules, and routes.

Work environment. Rail transportation employees work nights, weekends, and holidays to operate trains that run 24 hours a day, 7 days a week. Many work more than a 40-hour workweek, although minimum rest hours are mandated by Federal regulations. Engineers and conductors may be placed on an “extra board” on which workers receive assignments only when a railroad needs substitutes for workers who are absent because of vacation, illness, or other reasons. Seniority usually dictates who receives the more desirable shifts, as do union agreements at large unionized railroads. Working conditions vary by the mode of rail transport.

Freight trains generally are dispatched according to the needs of customers; as a result train crews may have irregular schedules. It is common for workers to place their name on a list and wait for their turn to work. Jobs usually are assigned on short notice and often at odd hours. Working weekends is common in freight train transportation. Those who work on trains operating between points hundreds of miles apart may spend consecutive nights away from home. Because of the distances involved on some routes, many railroad employees work without direct supervision.

Workers on passenger trains ordinarily have regular and reliable shifts. Also, the appearance, temperature, and accommodations of passenger trains are more comfortable than those of freight trains.

Rail yard workers spend most of their time outdoors and work regardless of weather conditions. These workers climb up and down equipment, which can be strenuous and dangerous if safety rules are not followed. The work of conductors and engineers on local runs, on which trains frequently stop at stations or local rail yards to pick up and deliver cars, is physically demanding as well.

Training, Other Qualifications, and Advancement

Rail transportation workers start out in a variety of positions as they gain experience needed for more demanding assignments. Rail transportation workers generally start out training to become a conductor before they may be considered for an engineer position. Engineer positions require Federal licen-

sure, and nearly all rail transportation workers complete formal classroom and hands-on training before beginning work. Most applicants must pass a drug screening, background check, and physical examination before being hired.

Education and training. Railroads require that applicants have a minimum of a high school diploma or its equivalent, and most training is done through a company’s formal training program and on-the-job training. Entry-level jobs and rail yard jobs usually require the successful completion of a company training program before workers are allowed to begin. For brake and signal operator jobs, railroad firms will train applicants either in a company program or—especially with smaller railroads—at an outside training facility. Typical training programs combine classroom and on-site training lasting from a few weeks to a few months. Entry-level conductors are either trained by their employers or are required to complete a formal conductor training program through a community college.

Most transit systems that operate subways and streetcars also operate buses. In these systems, subway or streetcar operators usually gain experience by first driving buses. New operators then complete training programs that last from a few weeks to 6 months. At the end of the period of classroom and on-the-job training, operators usually must pass qualifying examinations covering the operating system, troubleshooting, and evacuation and emergency procedures.

Licensure. Locomotive engineers are unique within rail transportation occupations in that they must be federally licensed to operate freight and passenger trains. Federal regulations require beginning engineers to complete a formal engineer training program, including classroom, simulator, and hands-on instruction in locomotive operation. The instruction usually is administered by the rail company in programs approved by the Federal Railroad Administration. At the end of the training period, candidates must pass a hearing and visual acuity test, a safety conduct background check, a railroad operation knowledge test, and a skills performance test before receiving an engineer’s license.

Engineers must periodically pass an operational rules efficiency test to maintain their licensure. The test is an unannounced event requiring engineers to take active or responsive action in certain situations, such as maintaining a particular speed through a curve or yard or complying with a signal.

For yard occupations, a commercial driver’s license may be required because these workers often operate trucks and other heavy vehicles.

Other qualifications. Rail transportation workers must have good hearing, eyesight, and color vision, as well as good hand-eye coordination, manual dexterity, and mechanical aptitude. Physical stamina is required for most rail transportation jobs. Applicants for locomotive engineer jobs and some conductor jobs must be at least 21 years old.

All applicants must be in good health, have good communication skills, and be able to make quick, responsible judgments. Employers require railroad transportation job applicants to pass a physical examination, drug and alcohol screening, and a criminal background check. Under Federal regulation, all persons licensed to operate engines are subject to random drug and alcohol testing while on duty, and engineers also undergo

periodic physical examinations. In some cases, engineers who fail to meet these physical and conduct standards are restricted to yard service, trained to perform other work, or discharged.

Advancement. Most railroad transportation workers begin as a laborer, brake operator, or conductor after completing training on signals, timetables, operating rules, and related subjects. Although new employees may be hired as conductors, seniority determines whether an employee may hold a conductor position full-time. Employers almost always fill engineer positions with workers who have experience in other railroad-operating occupations. Subway and streetcar operators with sufficient seniority can advance to station manager or another supervisory position.

Employment

Rail transportation workers held 125,000 jobs in 2006, distributed among the detailed occupations as follows:

Locomotive engineers and operators	47,000
Railroad conductors and yardmasters	40,000
Railroad brake, signal, and switch operators	25,000
Subway and streetcar operators	6,900
Rail transportation workers, all other.....	6,800

Most rail transportation workers were employed in the rail transportation industry or support activities for the industry. Rail transportation and rail transportation support activities made up 109,000 jobs in 2006. The rest worked primarily for local governments as subway and streetcar operators, who held 11,000 jobs, while 1,700 workers were employed in mining and manufacturing establishments that operate their own locomotives to move railcars containing ore, coal, and other bulk materials.

Job Outlook

Although employment in most railroad transportation occupations is expected to change little through the year 2016, opportunities are expected to be good for qualified applicants, in large part due to the number of workers expected to retire or leave these occupations in the next decade.

Employment change. Employment is expected to increase by 1 percent, which is considered little or no change. This will occur despite expected increases in the amount of freight volume, which will be due to railroads’ advantages over other modes of shipping.

Projections data from the National Employment Matrix

Occupational Title	SOC Code	Employment, 2006	Projected employment, 2016	Change, 2006-16	
				Number	Percent
Rail transportation occupations.....	53-4000	125,000	127,000	1,800	1
Locomotive engineers and operators	53-4010	47,000	48,000	1,300	3
Railroad brake, signal, and switch operators	53-4021	25,000	22,000	-2,800	-11
Railroad conductors and yardmasters	53-4031	40,000	44,000	3,600	9
Subway and streetcar operators	53-4041	6,900	7,800	800	12
Rail transportation workers, all other.....	53-4099	6,800	5,500	-1,300	-19

NOTE: Data in this table are rounded. See the discussion of the employment projections table in the *Handbook* introductory chapter on *Occupational Information Included in the Handbook*.

Demand for railroad freight service will grow as the economy and the intermodal transportation of goods continue to expand. Intermodal transportation involves loading cargo in large containers that can be moved by ship, rail, or truck. Improved delivery times and on time service along with reduced shipping rates will help railroads compete with other modes of transportation, such as trucks, ships, and aircraft. Railroads will also benefit from congested highways and relative savings on rising fuel costs. However, technology will allow railroads to improve productivity and consolidate duties, which will offset the need for new employees in occupations not essential for railroad operations. For example, the need for rail yard engineers who operate trains inside rail yards will see a rapid decline as a result of remote control locomotive technology, while employment of locomotive engineers will grow as fast as the average because of the continued need for train operators on open rail. For similar reasons, railroad brake, signal, and switch operators and other rail transportation occupations will see a decline in employment, whereas railroad conductors will continue to be necessary for train operation for the foreseeable future and are expected to grow about as fast as average through 2016.

Passenger rail service is anticipated to increase volume on pace with the growing population, as are public transit authorities. Employment of subway and streetcar operators will see average growth due to increased demand for light-rail transportation systems around the country.

Job prospects. Opportunities for rail transportation workers will be favorable as a large number of older workers are expected to retire over the next decade. Other workers will leave the occupation for various personal and professional reasons, creating further opportunities. Prospects will be best for those positions that are also expected to see growth, for example locomotive engineers and conductors. There will also be job opportunities for those positions that are expected to decline, for example brake, signal, and switch operators. These openings will be the result of retirements and other separations. Entry-level occupations such as brake operator and conductor should be plentiful for applicants with clean drug and criminal records. Opportunities for long-distance train crews are also expected to be good as many of those working in the yards prefer not to travel long distances.

Earnings

Median hourly earnings of rail transportation occupations in May 2006 are indicated in the tabulation below. These earn-

ings were relatively high, compared to \$12.17 per hour for all transportation occupations.

Locomotive engineers	\$27.88
Railroad conductors and yardmasters	26.70
Subway and streetcar operators	23.55
Railroad brake, signal, and switch operators	23.49

Most railroad transportation workers are paid according to miles traveled or hours worked, whichever leads to higher earnings. Factors such as seniority, job assignments, and location impact potential earnings.

Seventy-four percent of railroad transportation workers are members of unions compared to 12 percent for all occupations. Many different railroad unions represent various crafts on the railroads. Among the largest of the railroad employee unions are the United Transportation Union and the Brotherhood of Locomotive Engineers and Trainmen. Many subway operators are members of the Amalgamated Transit Union, while others belong to the Transport Workers Union of North America.

Related Occupations

Other related transportation workers include bus drivers, truck drivers and driver/sales workers, and those working in water transportation occupations. Employees who repair and maintain railroad rolling stock are included in heavy vehicle and mobile equipment service technicians and mechanics. Rail transportation workers sometimes work closely with workers in material moving occupations to load and unload freight.

Sources of Additional Information

To obtain information on employment opportunities, contact either the employment offices of railroads and rail transit systems or State employment service offices.

General information about the rail transportation industry is available from:

- Association of American Railroads, 50 F St.N.W., Washington, DC 20001.

Internet: <http://www.aar.org>

General information about career opportunities in passenger transportation is available from:

- American Public Transportation Association, 1666 K Street N.W., Washington, DC 20006.

Internet: <http://www.apta.com>

- National Railroad Passenger Corporation, 60 Massachusetts Ave. N.E., 4th floor, Washington, DC 20002.

Internet: <http://www.amtrak.com>

General information on career opportunities as a locomotive engineer is available from:

- Brotherhood of Locomotive Engineers and Trainmen, 1370 Ontario St.MezzaniNE., Cleveland, OH 44113.

Internet: <http://www.ble.org>

General information on career opportunities as a conductor, yardmaster, or brake operator is available from:

- United Transportation Union, 14600 Detroit Ave., Cleveland, OH 44107.

Internet: <http://www.utu.org>