

Material Moving Occupations

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Significant Points

- Job openings should be numerous because the occupation is very large and turnover is relatively high.
- Most jobs require little work experience or specific training.
- Pay is low, and the seasonal nature of the work may reduce earnings.

Nature of the Work

Material moving workers are categorized into two groups—operators and laborers. Operators use machinery to move construction materials, earth, petroleum products, and other heavy materials. Generally, they move materials over short distances—around a construction site, factory, or warehouse. Some move materials onto or off of trucks and ships. Operators control equipment by moving levers or foot pedals, operating switches, or turning dials. They may also set up and inspect equipment, make adjustments, and perform minor repairs when needed. Laborers and hand material movers manually handle freight, stock, or other materials; clean vehicles, machinery, and other equipment; feed materials into or remove materials from machines or equipment; and pack or package products and materials.

Material moving occupations are classified by the type of equipment they operate or goods they handle. Each piece of equipment requires different skills to move different types of loads. (For information on *operating engineers; paving, surfacing, and tamping equipment operators; and piledriver operators*, see the statement on construction equipment operators elsewhere in the *Handbook*.)

Industrial truck and tractor operators drive and control industrial trucks or tractors equipped to move materials around a warehouse, storage yard, factory, or construction site. A typical industrial truck, often called a forklift or lift truck, has a hydraulic lifting mechanism and forks. Industrial truck and tractor operators also may operate tractors that pull trailers loaded with materials, goods, or equipment within factories and warehouses, or around outdoor storage areas.

Excavating and loading machine and dragline operators operate or tend machinery equipped with scoops, shovels, or buckets, to dig and load sand, gravel, earth, or similar materials into trucks or onto conveyors. Construction and mining industries employ the majority of excavation and loading machine and dragline operators. *Dredge operators* excavate and maintain navigable channels in waterways by operating dredges to remove sand, gravel, or other materials from lakes, rivers, or streams. *Underground mining loading machine operators* operate underground loading machine to load coal, ore, or rock into shuttle or mine car or onto conveyors. Loading equipment may include power shovels, hoisting engines equipped with cable-drawn scraper or scoop, or machines equipped with gathering arms and conveyor.

Crane and tower operators operate mechanical boom and cable or tower and cable equipment to lift and move materials, machin-

ery, or other heavy objects. They extend or retract a horizontally mounted boom to lower or raise a hook attached to the loadline. Most operators coordinate their maneuvers in response to hand signals and radioed instructions. Operators position the loads from the onboard console or from a remote console at the site. While crane and tower operators are noticeable at office building and other construction sites, the biggest group works in primary metal, metal fabrication, and transportation equipment manufacturing industries that use heavy, bulky materials. *Hoist and winch operators* control movement of cables, cages, and platforms to move workers and materials for manufacturing, logging, and other industrial operations. They work in such positions as derrick operators and hydraulic boom operators. Many hoist and winch operators are found in manufacturing or construction industries.

Pump operators and their helpers tend, control, or operate power-driven pumps and manifold systems that transfer gases, oil, or other materials to vessels or equipment. They maintain the equipment to regulate the flow of materials according to a schedule set up by petroleum engineers and production supervisors. *Gas compressor and gas pumping station operators* operate steam, gas, electric motor, or internal combustion engine-driven compressors. They transmit, compress, or recover gases, such as butane, nitrogen, hydrogen, and natural gas. *Wellhead pumpers* operate power pumps and auxiliary equipment to produce flow of oil or gas from wells in oilfields.

Tank, car, truck, and ship loaders operate ship loading and unloading equipment, conveyors, hoists, and other specialized material handling equipment such as railroad tank car unloading equipment. They may gauge or sample shipping tanks and test them for leaks. *Conveyor operators and tenders* control or tend conveyor systems that move materials to or from stockpiles, processing stations, departments, or vehicles. *Shuttle car operators* operate diesel or electric-powered shuttle car in underground mine to transport materials from working face to mine cars or conveyor.

Laborers and hand freight, stock, and material movers manually move materials or perform other unskilled general labor. These workers move freight, stock, and other materials to and from storage and production areas, loading docks, delivery vehicles, ships, and containers. Their specific duties vary by industry and work setting. Specialized workers within this group include baggage and cargo handlers, who work in transportation industries, and truck loaders and unloaders. In factories, they may move raw materials



Many material moving workers perform their duties outdoors in every type of climate and weather condition.

or finished goods between loading docks, storage areas, and work areas as well as sort materials and supplies and prepare them according to their work orders

Hand packers and packagers manually pack, package, or wrap a variety of materials. They may inspect items for defects, label cartons, stamp information on products, keep records of items packed, and stack packages on loading docks. This group also includes order fillers, who pack materials for shipment, as well as grocery store courtesy clerks. In grocery stores, they may bag groceries, carry packages to customers' cars, and return shopping carts to designated areas.

Machine feeders and offbearers feed materials into or remove materials from automatic equipment or machines tended by other workers. *Cleaners of vehicles and equipment* clean machinery, vehicles, storage tanks, pipelines, and similar equipment using water and other cleaning agents, vacuums, hoses, brushes, cloths, and other cleaning equipment. *Refuse and recyclable material collectors* gather trash, garbage, and recyclables from homes and businesses along a regularly scheduled route, and deposit the refuse in their truck for transport to a dump, landfill, or recycling center. They lift and empty garbage cans or recycling bins by hand, or operate a hydraulic lift truck that picks up and empties dumpsters.

Working Conditions

Many material moving workers work outdoors in every type of climate and weather condition. The work tends to be repetitive and physically demanding. They may lift and carry heavy objects, and stoop, kneel, crouch, or crawl in awkward positions. Some work at great heights, or outdoors in all weather conditions. Some jobs expose workers to harmful materials or chemicals, fumes, odors, loud noise, or dangerous machinery. To avoid injury, these workers wear safety clothing, such as gloves and hardhats, and devices to protect their eyes, mouth, or hearing. These jobs have become much safer as safety equipment such as overhead guards on forklift trucks has become common. As with most machinery, accidents usually can be avoided by observing proper operating procedures and safety practices.

Material movers generally work 8-hour shifts, though longer shifts also are common. In many industries that work around the clock, material movers work evening or "graveyard" shifts. Some may work at night because the establishment may not want to disturb customers during normal business hours. Refuse and recyclable material collectors often work shifts starting at 5 or 6 a.m. Some material movers work only during certain seasons, such as when the weather permits construction activity.

Employment

Material movers held 4.9 million jobs in 2002. They were distributed among the detailed occupations as follows:

Laborers and freight, stock, and material movers, hand	2,231,000
Hand packers and packagers	920,000
Industrial truck and tractor operators	594,000
Cleaners of vehicles and equipment	344,000
Machine feeders and offbearers	164,000
First-line supervisors/managers of helpers, laborers, and material movers, hand	147,000
Refuse and recyclable material collectors	134,000
Excavating and loading machine and dragline operators	80,000
Conveyor operators and tenders	58,000
Crane and tower operators	50,000
Tank car, truck, and ship loaders	17,000
Pump operators, except wellhead pumpers	13,000
Wellhead pumpers	11,000
Hoist and winch operators	9,000

Gas compressor and gas pumping station operators	7,300
Loading machine operators, underground mining	4,000
Dredge operators	3,500
Shuttle car operators	3,200
All other material moving workers	78,000

About 29 percent of all material movers worked in the wholesale trade or retail trade industries. About 23 percent worked in manufacturing and 14 percent worked in transportation and warehousing. Significant numbers of material movers also worked in construction and mining. In addition, 13 percent of material moving workers were employed in the employment services industry where they are employed on a temporary or contract basis. For example, companies that need workers for only a few days, to move materials or to clean up a site, may contract with temporary help agencies specializing in providing suitable workers on a short-term basis. A small proportion of material movers were self-employed.

Material movers work in every part of the country. Some work in remote locations on large construction projects, such as highways and dams, or in factory or mining operations.

Training, Other Qualifications, and Advancement

Most material moving jobs require little work experience or specific training. Some employers prefer applicants with a high school diploma, but most simply require workers to be at least 18 years old and physically able to perform the work. For those jobs requiring physical exertion, employers may require that applicants pass a physical exam. Some employers also require drug testing or background checks before employment. These workers often are younger than workers in other occupations—reflecting the limited training but significant physical requirements of many of these jobs.

Material movers generally learn skills informally, on the job, from more experienced workers or supervisors. However, workers who use industrial trucks, other dangerous equipment, or handle toxic chemicals must receive specialized training in safety awareness and procedures. Many of the training requirements are standardized through the U.S. Occupational Safety and Health Administration (OSHA). This training usually is provided by the employer. Employers must also certify that each operator has received the training and evaluate each operator at least once every three years.

Material moving equipment operators need a good sense of balance, distance judgment, and eye-hand-foot coordination. For those jobs that involve dealing with the public, such as grocery store courtesy clerks, workers should be pleasant and courteous. Most jobs require reading and basic mathematics skills to read procedures manuals and billing and other documents. Mechanical aptitude and high school training in automobile or diesel mechanics are helpful because workers may perform some maintenance on their equipment. Experience operating mobile equipment, such as tractors on farms or heavy equipment in the Armed Forces, is an asset. As material moving equipment becomes more automated, many workers will need basic computer and technical knowledge to operate the equipment.

Experience in many of these jobs may allow workers to qualify or become trainees for jobs such as construction trades workers; assemblers or other production workers; motor vehicle operators; or vehicle and mobile equipment mechanics, installers, and repairers. In many workplaces, new workers often work in a material moving position before being promoted to a better paying and more highly skilled job. Some may eventually advance to become supervisors.

Job Outlook

Job openings should be numerous because the occupation is very large and turnover is relatively high—characteristic of occupations requiring little formal training. Many openings will arise from the need to replace workers who transfer to other occupations, or who retire or leave the labor force for other reasons.

Employment in material moving occupations will increase more slowly than average for all occupations through 2012. Employment growth will stem from an expanding economy and increased spending on the Nation's infrastructure, such as highways and bridges. However, equipment improvements, including the growing automation of material handling in factories and warehouses, will continue to raise productivity and moderate the demand for material movers.

Job growth for material movers largely depends on growth in the industries employing them and the type of equipment the workers operate or the materials they handle. For example, employment of operators in manufacturing will decline due to increased automation and efficiency in the production process. On the other hand, employment will grow rapidly in temporary help organizations as firms contract out material moving services. Employment also will grow in warehousing and storage as more firms contract out their warehousing functions to firms that specialize in them.

Both construction and manufacturing are very sensitive to changes in economic conditions, so the number of job openings in these industries may fluctuate from year to year. Although increasing automation may eliminate some manual tasks, new jobs will be created to operate and maintain material moving equipment.

Earnings

Median hourly earnings of material moving workers in 2002 were relatively low, as indicated by the following tabulation:

Gas compressor and gas pumping station operators	\$20.44
First-line supervisors/managers of helpers, laborers, and material movers, hand	17.87
Pump operators, except wellhead pumpers	17.53
Crane and tower operators	17.47
Wellhead pumpers	16.24
Tank car, truck, and ship loaders	15.63
Excavating and loading machine and dragline operators	15.58
Hoist and winch operators	15.09
Industrial truck and tractor operators	12.54
Conveyor operators and tenders	11.66
Refuse and recyclable material collectors	11.60
Machine feeders and offbearers	10.50
Laborers and freight, stock, and material movers, hand	9.48
Cleaners of vehicles and equipment	8.20
Hand packers and packagers	8.03
All other material moving workers	12.58

Pay rates vary according to experience and job responsibilities. Pay usually is higher in metropolitan areas. The seasonality of work may reduce earnings.

Related Occupations

Other workers who operate mechanical equipment include bus drivers; construction equipment operators; machine setters, operators, and tenders—metal and plastic; rail transportation workers; and truck drivers and driver/sales workers. Other entry-level workers who perform mostly physical work are agricultural workers; building cleaning workers; construction laborers; forest, conservation, and logging workers; and grounds maintenance workers.

Sources of Additional Information

For information about job opportunities and training programs, contact local State employment service offices, building or construction contractors, manufacturers, and wholesale and retail establishments.

Information on safety and training requirements is available from:

► U.S. Department of Labor, Occupational Safety and Health Administration (OSHA), 200 Constitution Ave. NW., Washington, DC 20210. Internet: <http://www.osha.gov>

Information on industrial truck and tractor operators is available from:

► Industrial Truck Association, 1750 K St. NW., Suite 460, Washington, DC 20006.