

often requires the most knowledge of the product and the greatest talent for persuasion.

Opportunities for advancement vary in small stores. In some establishments, advancement is limited, because one person, often the owner, does most of the managerial work. In others, however, some salespersons are promoted to assistant managers.

Traditionally, capable salespersons without college degrees could advance to management positions. Today, however, large retail businesses usually prefer to hire college graduates as management trainees, making a college education increasingly important. Despite this trend, motivated and capable employees without college degrees still may advance to administrative or supervisory positions in large establishments.

Retail selling experience may be an asset when applying for sales positions with larger retailers or in other industries, such as financial services, wholesale trade, or manufacturing.

Job Outlook

As in the past, employment opportunities for retail salespersons are expected to be good because of the need to replace the large number of workers who transfer to other occupations or leave the labor force each year. In addition, many new jobs will be created for retail salespersons. Employment is expected to grow about as fast as the average for all occupations through the year 2010, reflecting rising retail sales stemming from a growing population. Opportunities for part-time work should be abundant, and demand will be strong for temporary workers during peak selling periods, such as the end-of-year holiday season.

During economic downturns, sales volumes and the resulting demand for sales workers usually decline. Purchases of costly items, such as cars, appliances, and furniture, tend to be postponed during difficult economic times. In areas of high unemployment, sales of many types of goods decline. However, because turnover of sales workers usually is very high, employers often can adjust employment levels by simply not replacing all those who leave.

Earnings

The starting wage for many retail sales positions is the Federal minimum wage, which was \$5.15 an hour in 2001. In areas where employers have difficulty attracting and retaining workers, wages tend to be higher than the legislated minimum.

Median hourly earnings of retail salespersons, including commission, were \$8.02 in 2000. The middle 50 percent earned between \$6.63 and \$10.54 an hour. The lowest 10 percent earned less than \$5.86, and the highest 10 percent earned more than \$15.86 an hour. Median hourly earnings in the industries employing the largest numbers of retail salespersons in 2000 were as follows:

New and used car dealers	\$17.81
Lumber and other building materials	10.38
Department stores	7.63
Miscellaneous shopping goods stores	7.50
Family clothing stores	7.39

Compensation systems vary by type of establishment and merchandise sold. Salespersons receive hourly wages, commissions, or a combination of wages and commissions. Under a commission system, salespersons receive a percentage of the sales that they make. This system offers sales workers the opportunity to significantly increase their earnings, but they may find that their earnings strongly depend on their ability to sell their product and on the ups and downs of the economy. Employers may use incentive programs such as awards, banquets, bonuses, and profit-sharing plans to promote teamwork among the sales staff.

Benefits may be limited in smaller stores, but benefits in large establishments usually are comparable to those offered by other employers. In addition, nearly all salespersons are able to buy their store's merchandise at a discount, with the savings depending upon the type of merchandise.

Related Occupations

Salespersons use sales techniques, coupled with their knowledge of merchandise, to assist customers and encourage purchases. Workers in a number of other occupations use these same skills, including sales representatives, wholesale and manufacturing; securities, commodities, and financial services sales agents; counter and rental clerks; real estate brokers and sales agents; purchasing managers, buyers, and purchasing agents; insurance sales agents; sales engineers; and cashiers.

Sources of Additional Information

Information on careers in retail sales may be obtained from the personnel offices of local stores or from State merchants' associations.

General information about retailing is available from:

► National Retail Federation, 325 7th St. NW., Suite 1100, Washington, DC 20004. Internet: <http://www.nrf.com>

Information about retail sales employment opportunities is available from:

► Retail, Wholesale, and Department Store Union, 30 East 29th St., 4th Floor, New York, NY 10016.

Information about training for a career in automobile sales is available from:

► National Automobile Dealers Association, Public Relations Department, 8400 Westpark Dr., McLean, VA 22102-3591. Internet: <http://www.nada.org>

Sales Engineers

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Significant Points

- A bachelor's degree in engineering is required; many sales engineers have previous work experience in an engineering specialty.
- Projected employment growth stems from the increasing variety and number of goods to be sold.
- Employment opportunities and earnings may fluctuate from year to year.

Nature of the Work

Many products and services, especially those purchased by large companies and institutions, are highly complex. Sales engineers, using their engineering skills, help customers determine which products or services provided by the sales engineer's employer best suit their needs. Sales engineers—who also may be called manufacturers' agents, sales representatives, or technical sales support workers—often work with both the customer and the production, engineering, or research and development departments of their company or of independent firms to determine how products and services could be designed or modified to best suit the customer's needs. They also may advise the customer on how to best utilize the products or services being provided.

Selling, of course, is an important part of the job. Sales engineers use their technical skills to demonstrate to potential customers how and why the products or services they are selling would

suit the customer better than competitors' products. Often, there may not be a directly competitive product. In these cases, the job of the sales engineer is to demonstrate to the customer the usefulness of the product or service—for example, how much new production machinery would save the customer.

Most sales engineers have a bachelor's degree in engineering and some have previous work experience in an engineering specialty before becoming a sales engineer. Engineers apply the theories and principles of science and mathematics to technical problems. Their work is the link between scientific discoveries and commercial applications. Many sales engineers specialize in an area related to an engineering specialty. For example, sales engineers selling chemical products may have a background as a chemical engineer while those selling electrical products may have a degree in electrical engineering. (See the statements on engineers and 14 engineering specialties elsewhere in the *Handbook*.)

Many of the job duties of sales engineers are similar to those of other salespersons. They must interest the client in purchasing their products, many of which are durable manufactured products such as turbines. Sales engineers are often teamed with other salespersons who concentrate on the marketing and sales, enabling the sales engineer to concentrate on the technical aspects of the job. By working as a sales team, each member is able to utilize his or her strengths and knowledge. (Information on other sales occupations, including sales representatives, wholesale and manufacturing, appears elsewhere in the *Handbook*.)



A degree in engineering is required to become a sales engineer.

Sales engineers tend to employ selling techniques that are different from those used by most other sales workers. They may use a “consultative” style; that is, they focus on the client's problem and show how it could be solved or mitigated with their product or service. This selling style differs from the “benefits and features” method, whereby the product is described and the customer is left to decide how the product would be useful.

In addition to maintaining current clients and attracting new ones, sales engineers help clients work out any problems that arise when the product is installed, and may continue to serve as a liaison between the client and their company. In addition, due to their familiarity with the client's needs, sales engineers may help identify and develop potential new products.

Sales engineers may work directly for manufacturers or service-providers, or in small independent firms. In an independent firm, they may sell a complimentary line of products from several different suppliers, in which case they are paid on a commission basis.

Working Conditions

Many sales engineers work more than 40 hours per week to meet sales goals and their clients' needs. Selling can be stressful because sales engineers' income and job security often directly depend on their success in sales and customer service.

Some sales engineers have large territories and travel extensively. Because sales regions may cover several States, they may be away from home for several days or even weeks at a time. Others work near their “home base” and travel mostly by automobile. However, international travel is becoming more important to secure contracts with foreign customers.

Although the hours may be long and are often irregular, many sales engineers have the freedom to determine their own schedule. Consequently, they often can arrange their appointments so they can have time off when they want it. However, most independent sales workers do not earn any income while on vacation.

Employment

Sales engineers held about 85,000 jobs in 2000. Almost two-thirds were in durable goods manufacturing industries—for example, industrial machinery and equipment, measuring and controlling devices, or electronic and other electrical equipment—and wholesale trade, including machinery, equipment, and supplies. Services and nondurable goods manufacturing industries employed most of the remaining sales engineers.

Unlike many other sales occupations, very few sales engineers are self-employed.

Training, Other Qualifications, and Advancement

A bachelor's degree in engineering is required to become a sales engineer. However, some workers with previous experience in sales combined with technical experience or training sometimes hold the title of sales engineer. Also, workers who have a degree in a science, such as chemistry, or even a degree in business with little or no previous sales experience, may be termed sales engineers.

Admissions requirements for undergraduate engineering schools include a solid background in mathematics (algebra, geometry, trigonometry, and calculus), physical sciences (biology, chemistry, and physics), and courses in English, social studies, humanities, and computer science. University programs vary in content. For example, some programs emphasize industrial practices, preparing students for a job in industry, whereas others are more theoretical and prepare students for graduate school. Therefore, students should investigate curricula and check accreditations carefully before selecting a college. Once a college has been selected, a student must choose an area of engineering in which to specialize. Some

programs offer a general engineering curriculum; students then specialize in graduate school or on the job. Most engineering degrees are granted in electrical, mechanical, or civil engineering. However, engineers trained in one branch may work in related branches.

Many sales engineers first worked as engineers. For some, the engineering experience was necessary to obtain the technical background needed to effectively sell their employers' products or services. Others moved into the occupation because it offered better earnings and advancement potential or because they were looking for a new challenge.

New graduates with engineering degrees may need sales experience and training to obtain employment directly as a sales engineer. This may involve teaming with a sales mentor who is familiar with the business practices, customers, and company procedures and culture. After the training period has been completed, the sales engineer may continue to partner with someone who lacks technical skills, yet excels in the art of sales.

Promotion may include a higher commission rate, larger sales territory, or promotion to supervisor or marketing manager. In other cases, sales engineers may leave their companies and form a small independent firm that may offer higher commissions and more freedom. Independent firms tend to be small, although relatively few sales engineers are self-employed.

It is important for sales engineers to continue their education throughout their careers because much of their value to their employer depends on their knowledge of the latest technology. Sales engineers in high-technology areas, such as information technology or advanced electronics, may find that technical knowledge can become obsolete rapidly.

Job Outlook

Employment of sales engineer is expected to grow about as fast as the average for all occupations through the year 2010. Projected employment growth stems from the increasing variety and number of goods to be sold. Competitive pressures and advancing technology will force companies to improve and update product designs more frequently and to optimize their manufacturing and sales processes.

Employment opportunities and earnings may fluctuate from year to year because sales are affected by changing economic conditions, legislative issues, and consumer preferences. Prospects will be best for those with the appropriate knowledge or technical expertise, as well as the personal traits necessary for successful sales work.

While most job openings will be new positions created as companies expand their sales force, some openings will arise each year from the need to replace sales workers who transfer to other occupations or leave the labor force; compared to other occupations, however, the number of these openings should be relatively small.

Earnings

Compensation methods vary significantly by the type of firm and product sold. Most employers use a combination of salary and commission or salary plus bonus. Commissions usually are based on the amount of sales, whereas bonuses may depend on individual performance, on the performance of all sales workers in the group or district, or on the company's performance. Earnings from commissions and bonuses may vary greatly from year to year, depending on sales ability, the demand for the company's products or services, and the overall economy.

Median annual earnings of sales engineers, including commission, were \$56,520 in 2000. The middle 50 percent earned between \$44,240 and \$76,230 a year. The lowest 10 percent earned less than \$33,930 and the highest 10 percent earned more than \$95,560

a year. Median annual earnings in the industries employing the largest number of sales engineers in 2000 were as follows:

Electrical goods	\$67,100
Computer and data processing services	60,810
Professional and commercial equipment	49,860

In addition to their earnings, sales engineers who work for manufacturers are usually reimbursed for expenses such as transportation, meals, hotels, and customer entertainment. In addition to typical benefits, sales engineers often get personal use of a company car and frequent-flyer mileage. Some companies offer incentives such as free vacation trips or gifts for outstanding performance. Sales engineers who work in independent firms may have higher but less stable earnings and, often, relatively few benefits.

Related Occupations

Sales engineers must have sales ability and knowledge of the products they sell, as well as technical and analytical skills. Other occupations that require similar skills include advertising, marketing, promotions, public relations, and sales managers; engineers; insurance sales agents; purchasing managers, buyers, and purchasing agents; real estate brokers and sales agents; sales representatives, wholesale and manufacturing; and securities, commodities, and financial services sales agents.

Sources of Additional Information

For more information about becoming a sales engineer, contact:

► Manufacturers' Agents National Association, P.O. Box 3467, Laguna Hills, CA 92654-3467. Internet: <http://www.manaonline.org>

Career and certification information is available from:

► Manufacturers' Representatives Educational Research Foundation, P.O. Box 247, Geneva, IL 60134. Internet: <http://www.mrrerf.org>

Sales Representatives, Wholesale and Manufacturing

(O*NET 41-4011.01, 41-4011.02, 41-4011.03, 41-4011.04, 41-4011.05, 41-4011.06, 41-4012.00)

Significant Points

- Many are self-employed manufacturers' agents who work for a commission.
- A bachelor's degree increasingly is required; nevertheless, some individuals with previous sales experience enter the occupation without a college degree.
- Prospects will be best for those with the appropriate knowledge or technical expertise, as well as the personal traits necessary for successful selling.

Nature of the Work

Sales representatives are an important part of manufacturers' and wholesalers' success. Regardless of the type of product they sell, their primary duties are to interest wholesale and retail buyers and purchasing agents in their merchandise, and to address any of the client's questions or concerns. Sales representatives represent one or several manufacturers or wholesale distributors by selling one product or a complimentary line of products. Sales representatives also advise clients on methods to reduce costs, use their products, and increase sales. They market their company's products to