Median annual earnings of compensation, benefits, and job analysis specialists were $41,660 in 2000. The middle 50 percent earned between $32,120 and $53,620. The lowest 10 percent earned less than $25,170, and the highest 10 percent earned more than $68,480. Median annual earnings in 2000 in local government, the industry employing the largest numbers of compensation, benefits, and job analysis specialists, were $46,430.

According to a 2001 salary survey conducted by the National Association of Colleges and Employers, bachelor’s degree candidates majoring in human resources, including labor relations, received starting offers averaging $31,963 a year.

According to a 2001 survey of compensation in the human resources field, conducted by Abbott, Langer, and Associates of Crete, Illinois, the median total cash compensation for selected personnel and labor relations occupations were:

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Compensation directors</th>
<th>Benefits directors</th>
<th>Training directors</th>
<th>Compensation managers</th>
<th>Industrial and labor relations supervisors</th>
<th>Recruitment and interviewing managers</th>
<th>Regional/divisional/subsidiary human resources managers</th>
<th>Human resources information systems supervisors</th>
<th>Benefits supervisors</th>
<th>Training material development specialists</th>
<th>Compensation analysts</th>
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<td>$109,975</td>
<td>105,865</td>
<td>84,516</td>
<td>79,958</td>
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<td>Compensation directors</td>
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<td>Job evaluation specialists</td>
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<td>Classroom instructors</td>
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The average salary for personnel managers employed by the Federal Government was $64,411 in 2001. The average salary for occupational analysis specialists was $63,713; for employee relations specialists, $57,621; for labor relations specialists, $65,498; and for employee development specialists, $62,234. Salaries were slightly higher in areas where the prevailing local pay level was higher. There are no formal entry-level requirements for managerial positions. Applicants must possess a suitable combination of educational attainment, experience, and record of accomplishment.

Related Occupations
All human resources occupations are closely related. Other workers with skills and expertise in interpersonal relations include counselors, education administrators, public relations specialists, lawyers, psychologists, and other social scientists, and social workers.

Sources of Additional Information
For information about careers in employee training and development, contact:
- American Society for Training and Development, 1640 King St., Box 1443, Alexandria, VA 22313. Internet: http://www.astd.org
- World at Work, 14040 Northsight Blvd., Scottsdale, AZ 85260. Internet: http://www.worldatwork.org
- International Foundation of Employee Benefit Plans, 18700 W. Blumound Rd., P.O. Box 69, Brookfield, WI 53008-0069. Internet: http://www.ifebp.org
- For information about academic programs in industrial relations, write to:
- Industrial Relations Research Association, University of Wisconsin, 7226 Social Science Bldg., 1180 Observatory Dr., Madison, WI 53706. Internet: http://www.irra.ssc.wisc.edu

Information about personnel careers in the healthcare industry is available from:
- American Society for Healthcare Human Resources Administration, One North Franklin, 31st Floor, Chicago, IL 60606. Internet: http://www.ashhra.org

Industrial Production Managers
(O*NET 11-3051.00)

Significant Points
- While there is no standard preparation, a college degree is required.
- Applicants with a college degree in industrial engineering, management, or business administration, and particularly those with an undergraduate engineering degree and a master’s degree in business administration or industrial management, enjoy the best job prospects.
- Projected slower-than-average growth in employment reflects increasing productivity.

Nature of the Work
Industrial production managers coordinate the resources and activities required to produce millions of goods every year in the United States. Although their duties vary from plant to plant, industrial production managers share many of the same major responsibilities. These responsibilities include production scheduling, staffing, procurement and maintenance of equipment, quality control, inventory control, and the coordination of production activities with those of other departments.

The primary mission of industrial production managers is planning the production schedule within budgetary limitations and time constraints. They do this by analyzing the plant’s personnel and capital resources to select the best way of meeting the production quota. Industrial production managers determine, often using mathematical formulas, which machines will be used, whether new machines need to be purchased, whether overtime or extra shifts are necessary, and what the sequence of production will be. They monitor the production run to make sure that it stays on schedule and correct any problems that may arise.

Industrial production managers also must monitor product standards. When quality drops below the established standard, they must determine why standards are not being maintained and how to improve the product. If the problem relates to the quality of work performed in the plant, the manager may implement better training programs, reorganize the manufacturing process, or institute employee suggestion or involvement programs. If the cause is substandard materials, the manager works with the purchasing department to improve the quality of the product’s components.

Because the work of many departments is interrelated, managers work closely with heads of other departments such as sales, procurement, and logistics to plan and implement company goals, policies, and procedures. For example, the production manager works with the procurement department to ensure that plant inventories are maintained at their optimal level. This is vital to a firm’s operation because maintaining the inventory of materials necessary for production ties up the firm’s financial resources, yet insufficient quantities cause delays in production. A breakdown in communications between the production manager and the purchasing department can cause slowdowns and a failure to meet production schedules. Just-in-time production techniques have reduced inven-
Most industrial production managers have a college degree.

Most industrial production managers have a college degree. Many industrial production managers have a college degree in business administration, management, industrial technology, or industrial engineering. Others have a master’s degree in industrial management or business administration (MBA). Some are former production-line supervisors who have been promoted. Although many employers prefer candidates with a business or engineering background, some companies hire well-rounded liberal arts graduates.

As production operations become more sophisticated, increasing numbers of employers are looking for candidates with graduate degrees in industrial management or business administration. Combined with an undergraduate degree in engineering, either of these graduate degrees is considered particularly good preparation. Managers who do not have graduate degrees often take courses in decision sciences, which provide them with techniques and mathematical formulas that can be used to maximize efficiency. Companies also are placing greater importance on a candidate’s interpersonal skills. Because the job requires the ability to compromise, persuade, and negotiate, successful production managers must be well-rounded and have excellent communication skills.

Those who enter the field directly from college or graduate school often are unfamiliar with the firm’s production process. As a result, they may spend their first few months on the job in the company’s training program. These programs familiarize trainees with the production line, company policies, and the requirements of the job. In larger companies, they also may include assignments to other departments, such as purchasing and accounting. A number of companies hire college graduates as first-line supervisors and later promote them.

Some industrial production managers have worked their way up the ranks, perhaps after having worked as first-line supervisors. These workers already have an intimate knowledge of the production process and the firm’s organization. To be selected for promotion, however, they must obtain a college degree, must demonstrate leadership qualities, and usually must take company-sponsored courses in management skills and communication techniques.

In addition to formal training, industrial production managers must keep informed of new production technologies and management practices. Many belong to professional organizations and attend trade shows at which new equipment is displayed; they also attend industry conferences and conventions at which changes in production methods and technological advances are discussed.

Industrial production managers with a proven record of superior performance may advance to plant manager or vice president for manufacturing. Others transfer to jobs with more responsibilities at larger firms. Opportunities also exist for consultants. (For more information, see the statement on management analysts elsewhere in the Handbook.)

Training, Other Qualifications, and Advancement

Because of the diversity of manufacturing operations and job requirements, there is no standard preparation for this occupation. However, a college degree is required, even for those who have worked their way up the ranks. Many industrial production managers have a college degree in business administration, management, industrial technology, or industrial engineering. Others have a master’s degree in industrial management or business administration (MBA). Some are former production-line supervisors who have been promoted. Although many employers prefer candidates with a business or engineering background, some companies hire well-rounded liberal arts graduates.

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Job Outlook

Employment of industrial production managers is expected to grow more slowly than the average for all occupations through 2010. However, a number of job openings will stem from the need to replace workers who transfer to other occupations or leave the labor force.
Significant Points

- Little or no change in employment is projected as insurance companies increasingly use computer
  underwriting software that automatically analyzes and rates insurance applications.
- Most large insurance companies prefer college graduates who have a degree in business
  administration or finance with courses in accounting; however, a bachelor’s degree in any field—plus
  courses in business law and accounting—may be sufficient to qualify.

Nature of the Work

Insurance companies protect individuals and organizations from financial loss by assuming billions
of dollars in risks each year. Underwriters are needed to identify and calculate the risk of loss
from policyholders, establish appropriate premium rates, and write policies that cover these risks.
An insurance company may lose business to competitors if the underwriter appraises risks too
conservatively, or it may have to pay excessive claims if the underwriting actions are too liberal.

With the aid of computers, underwriters analyze information in insurance applications to determine if
a risk is acceptable and will not result in a loss. Applications are often supplemented with
reports from loss-control consultants, medical reports, data vendors, and actuarial studies.
Underwriters then must decide whether to issue the policy and the appropriate premium to charge.
In making this determination, underwriters serve as the main link between the insurance carrier
and the insurance agent. On occasion, they accompany sales agents to make presentations to
prospective clients.

Technology plays an important role in an underwriter’s job. Underwriters use computer applications
called “smart systems” to manage risks more efficiently and accurately. These systems
automatically analyze and rate insurance applications, recommend acceptance or denial of the risk,
and adjust the premium rate in accordance with the risk. With these systems, underwriters are
better equipped to make sound decisions and avoid excessive losses.

The Internet also has affected the work of underwriters. Many insurance carriers’ computer systems
are now linked to different databases on the Internet that allow immediate access to information—
such as driving records—necessary in determining a potential client’s risk. This reduces the amount
of time and paperwork necessary for an underwriter to complete a risk assessment.

Most underwriters specialize in one of three major categories of insurance—life, health, or property
and casualty. Life and health insurance underwriters may further specialize in group or individual
policies. The increased complexity of insurance plans and attention to the “bottom line” is changing
the nature of underwriting. In the past, insurance agents acting as underwriters, particularly in the
life and health fields, could accept or reject applications. Now this underwriting role is done mostly
by full-time underwriters in the home or field office of the insurance company.

Property and casualty underwriters usually specialize in either commercial or personal insurance,
and then by type of risk insured, such as fire, homeowners, automobile, marine, liability, or work-
ers’ compensation. In cases where casualty companies provide insurance through a single “package” policy,
covering various types of risks, the underwriter must be familiar with different lines of
insurance. For business insurance, the underwriter often must be able to evaluate the firm’s entire
operation in appraising its application for insurance.

An increasing proportion of insurance sales, particularly in life and health insurance, is being made
through group contracts. A standard group policy insures everyone in a specified group through
a single contract at a standard premium rate. The group underwriter analyzes the overall composition
of the group to assure that the total risk is not excessive. Another type of group policy provides
members of a group—a labor union, for example—with individual policies reflecting their needs.
These usually are casualty policies, such as those covering automobiles. The casualty under-
writer analyzes the application of each group member and makes individual appraisals. Some group
underwriters meet with union or employer representatives to discuss the types of policies available

Insurers Underwriters

(O*NET 13-2053.00)