

*National Survey of  
Professional,  
Administrative,  
Technical,  
and Clerical Pay,  
June 1970*

U.S. Department of Labor  
Bureau of Labor Statistics  
Bulletin 1693  
1971

*National Survey of  
Professional,  
Administrative,  
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and Clerical Pay,  
June 1970*

Accountants and Auditors  
Attorneys  
Personnel Management  
Buyers  
Engineers and Chemists  
Engineering Technicians  
Draftsmen  
Office Clerical

U.S. Department of Labor  
J. D. Hodgson, Secretary

Bureau of Labor Statistics  
Geoffrey H. Moore, Commissioner

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## Preface

This bulletin summarizes the results of the Bureau's annual salary survey of selected professional, administrative, technical, and clerical occupations in private industry. The nationwide salary information, which relates to June 1970, is representative of establishments in a broad spectrum of industries throughout the United States, except Alaska and Hawaii.

The survey was designed by the Bureau of Labor Statistics in cooperation with the Bureau of the Budget and the Civil Service Commission. It provides a fund of broadly based information on salary levels and distributions in private employment. As such, the results are useful as a guide for salary administration purposes and for general economic analysis. In addition, the survey provides information on pay in private industry in a form suitable for use in appraising the compensation of salaried employees in the Federal civil service (appendix D). It should be emphasized that this survey, like any other salary survey, is in no sense calculated to supply mechanical answers to pay policy questions.

The occupations studied span a wide range of duties and responsibilities. Individually, the occupations selected were judged to be (a) surveyable in industry within the framework of a broad survey design and (b) representative of occupational groups which are numerically important in industry as well as in the Federal Service.

Occupational definitions used in the collection of the salary data (appendix C) reflect duties and responsibilities in private industry; however, they are also designed to be translatable to specific pay grades in the General Schedule applying to Federal Classification Act employees. This necessitated limiting some occupations and work levels to specific elements that could be classified uniformly among establishments. The Bureau of Labor Statistics and the Civil Service Commission collaborated in the preparation of the definitions.

The scope of the survey, in terms of industrial, geographic, and minimum establishment-size coverage remained the same as in the 1969 survey. One new occupation, keypunch supervisor was added; the other definitions were the same as used in the 1969 survey.

The survey could not have been accomplished without the cooperation of the many firms whose salary data provide the basis for the statistical information presented in this bulletin. The Bureau, on its own behalf and on behalf of the other Federal agencies that collaborated in planning the survey, wishes to express sincere appreciation for the cooperation it has received.

This study was conducted in the Bureau's Office of Wages and Industrial Relations by the Division of Occupational Wage Structures. The analysis was prepared by Stephen H. Perloff. Field work for the survey was directed by the Bureau's Assistant Regional Directors, Division of Operations.

Although only nationwide salary data are presented in this bulletin, clerical and drafting occupation salary data are available for each of the 89 metropolitan areas in which the Bureau conducts area wage surveys. These area reports also include information on such supplementary benefits as paid vacations, holidays, and health, insurance, and pension plans relating to nonsupervisory office workers. (See the areas listed in the order form at the back of this bulletin.)

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# National Survey of Professional, Administrative, Technical, and Clerical Pay, June 1970

## Summary

Average salaries of workers in the occupations covered by this survey increased at a higher rate between 1969 and 1970 than for any year since the study was initiated. The 6.2 average percent increase for all white-collar occupations combined was one-half percentage point higher than the increase reported between 1968 and 1969. Increases for 9 of 11 professional, administrative, and technical support occupations ranged from 5.5 to 7.4 percent, and averaged 6.2 percent. The average of the increases for clerical occupations also was 6.2 percent; 8 of the 9 advanced between 5.5 and 6.4 percent.

Average monthly salaries for the 81 occupational levels varied from \$343 for clerks engaged in routine filing to \$2,753 for the highest level in the attorney series. For engineers, the largest professional occupation surveyed, salaries ranged from \$851 a month for recent college graduates in trainee positions to \$2,116 for engineers VIII, whose typical responsibilities could include the direction of a highly complex and diversified engineering program consisting of many large and important projects. Average monthly salaries of engineering technicians ranged from \$525 to \$920 among the five work levels. Key punch supervisors, added to the survey in 1970, averaged \$574 a month at level I and \$824 a month at level IV, the highest reported. Monthly salaries averaged \$439 for accounting clerks I, \$522 for secretaries I, \$582 for secretaries II, \$456 for general stenographers, and \$393 for typists I, the largest clerical groups represented in the survey. For most of the occupations, salary levels in metropolitan areas and in large establishments were higher than in all establishments within the full scope of the survey. Salary levels in finance and retail trade industries generally were lower than in other major industry divisions represented in the survey. Reported average standard weekly hours were also generally lower in the finance industries.

## Characteristics of the Survey

This survey, the eleventh in an annual series, provides nationwide salary averages and distributions for 81 work level categories covering 13 broad occupational groups.<sup>1</sup> It relates to establishments in all areas of the United States except Alaska and Hawaii in the following industries: Manufacturing; transportation, communication, electric, gas, and sanitary services; wholesale trade; retail trade; finance, insurance, and real estate; engineering and architectural services; and research, development, and testing laboratories operated on a commercial basis.<sup>2</sup> The minimum size of establishment requirements varied by industry division roughly equalizing minimum size scope in terms of white-collar employment. These requirements ranged from 50 employees in the finance, insurance, and real estate division, which is almost entirely composed of white-collar workers, to 250 employees in the manufacturing and retail trade divisions.<sup>3</sup>

Definitions for the occupations included in this study provide for classification of employees according to appropriate work levels (or classes). Within each occupation, the work levels surveyed, usually designated by Roman numerals with class I assigned to the lowest level, are defined in terms of duties and responsibilities. Specific job factors determining classification, however, varied from occupation to occupation.

<sup>1</sup> Results of the earlier survey reports were presented under the title: National Survey of Professional, Administrative, Technical, and Clerical Pay, Winter 1959-60 (BLS Bulletin 1286, 1960); Winter 1960-61 (BLS Bulletin 1310, 1961); Winter 1961-62 (BLS Bulletin 1346, 1962); February-March 1963 (BLS Bulletin 1387, 1963); February-March 1964 (BLS Bulletin 1422, 1964); February-March 1965 (BLS Bulletin 1469, 1965); February-March 1966 (BLS Bulletin 1535, 1966); June 1967 (BLS Bulletin 1585, 1968); June 1968 (BLS Bulletin 1617, 1969); and June 1969 (BLS Bulletin 1654, 1970).

<sup>2</sup> February-March 1964 and earlier surveys were limited to establishments in metropolitan areas. For a full description of the scope of the 1970 survey, see appendix A.

<sup>3</sup> February-March 1965 and earlier surveys were limited to establishments having 250 employees or more.

The number of work level definitions for each occupation varies from one for office boys or girls to eight each for chemists and engineers. More than one level of work was defined for survey in most of the occupations; however, some occupations were purposely defined to cover specific bands of work levels, which were not intended to represent all levels or all workers that may be found in those occupations.

The survey was designed to permit separate presentation of data for metropolitan areas. Coverage in metropolitan areas includes the 229 Standard Metropolitan Statistical Areas in the United States except Alaska and Hawaii, as revised through January 1968 by the Bureau of the Budget, the same number represented in the previous survey. About four-fifths of the total employment and almost nine-tenths of the employment in professional, administrative, clerical, and related occupations within scope of this survey were accounted for by establishments located in metropolitan areas. Almost nine-tenths of the employees in the selected occupations studied also were employed in metropolitan areas. The proportions varied more for the professional and administrative occupations than for the clerical and drafting occupations.

The selected occupations accounted for more than 1,637,000 employees or almost one-fourth of the estimated total employment in professional, administrative, clerical, and related occupations in all establishments within scope of the survey. Employment in the selected occupations varied widely, reflecting actual differences in employment in the various occupations, as well as differences in the range of duties and responsibilities covered by each occupational definition. Among the professional and administrative occupations, the eight levels of engineers accounted for a total of 384,263 employees, whereas, fewer than 5,000 were employed in each of four of the occupational categories as defined for the study (chief accountants, job analysts, directors of personnel, and keypunch supervisors). (See table 1.) Four occupations at all work levels studied (accounting clerks, secretaries, stenographers, and typists) accounted for about 70 percent of the 907,458 employees in the clerical occupations studied. The selected drafting occupations had aggregate employment of 86,019 and the five engineering technician levels together accounted for about 95,000.

Although women accounted for approximately one-half of the total employment in the occupations studied, they were employed largely in clerical positions. The clerical occupations in which the proportion of women amounted to more than 90 percent of employment at each level were file clerks, keypunch operators, secretaries, stenographers, switchboard operators, and typists. Among tabulating-machine operators, women accounted for 43 percent at level I, 36 percent at level II, and 26 percent at level III. Office girls (46 percent) were outnumbered by office boys (54 percent). Women were usually reported only in the lower levels of the professional, administrative, and technical support occupations. A distribution of the proportions of women reported by occupation and level is shown on page 36.

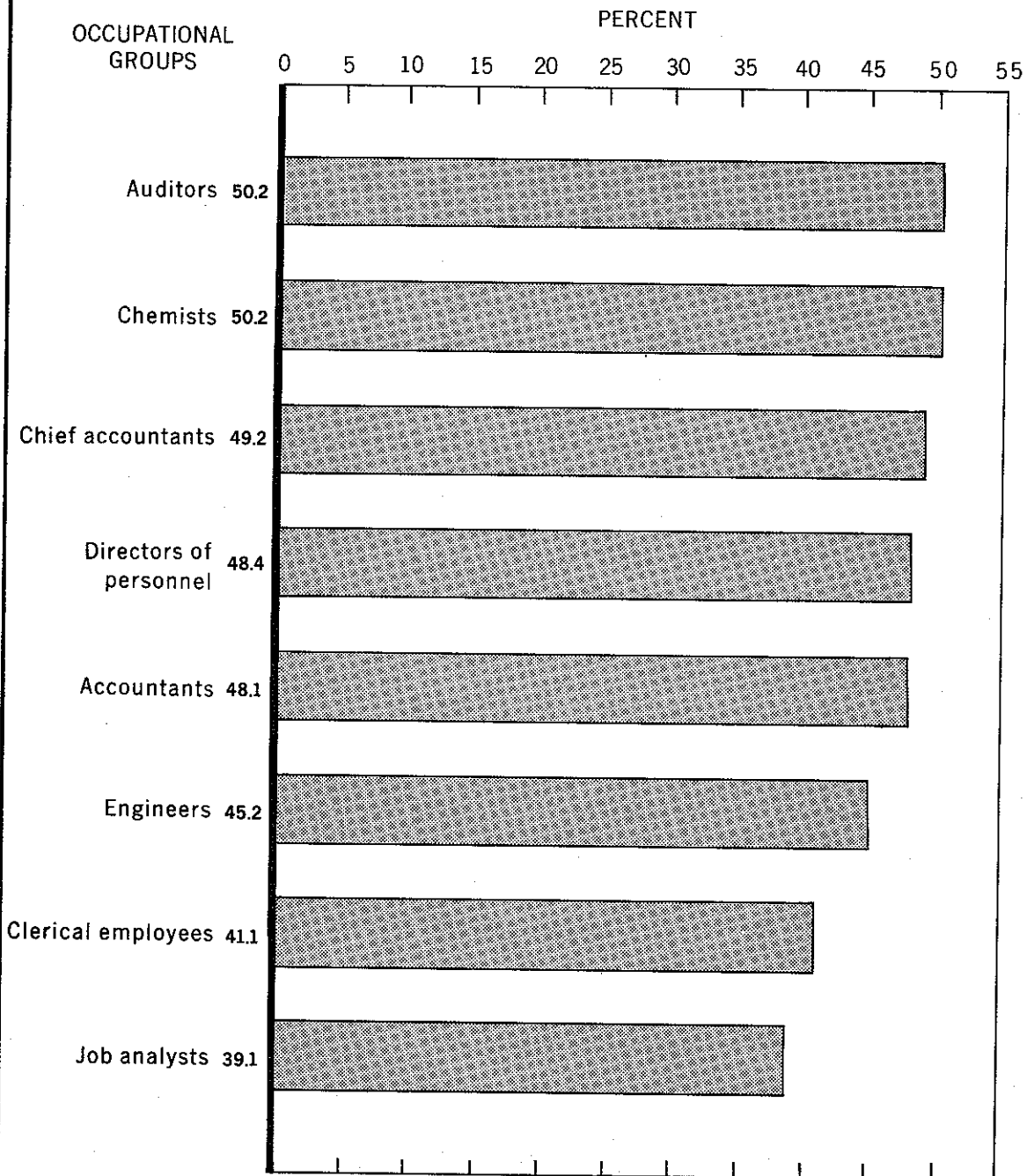
The general level of salaries for each occupation or work level is presented in this study as the arithmetic mean of all the individual salary rates. Median salaries, the amount below and above which the salaries for 50 percent of the employees are found, are also presented in tables 1, 2, and 3.

#### Changes in Salary Levels

The following tabulation presents salary increases that occurred between annual surveys since 1961 for each survey occupation.<sup>4</sup> Also shown are average percent changes for the two broad occupational groups comprising the survey (the professional, administrative, and technical support group, and the clerical group) and the average percent change for the two groups combined. The percent increases for each occupation were obtained by adding the aggregate salaries for each level in each of two successive years (employment in the most recent year, to eliminate the effects of year-to-year employment shifts, multiplied by the average salaries in both years) and dividing the latter sum by the earlier. The resultant relative, less 100, is the percent of increase. Changes in the scope of the survey and in occupational definitions were incorporated into the series on a continuing basis as soon as two comparable periods were available. The increases for each of the two broad occupational groups were obtained by averaging the increases of the occupations within the group. The increases for all survey occupations were determined by averaging the increases for the two broad occupational groups. The annual increases were then linked together to obtain the changes that had occurred since this series began and to compute average annual rates of increase for each occupation and group, and all occupations combined. The 1961-70 percent increases for selected occupations are shown in chart 1.

<sup>4</sup> The increases since 1965 relate to establishments in metropolitan areas and nonmetropolitan counties; all others relate to metropolitan areas only. Establishments employing fewer than 250 workers were excluded before 1966.

**Chart 1. Cumulative Rise in Average (Mean) Salaries for Selected Occupational Groups, 1961 to 1970**



Occupation and group	Percent increases in average salaries									Average annual rate of increase
	1969 to 1970	1968 to 1969	1967 to 1968	1966 to 1967 <sup>1</sup>	1965 to 1966	1964 to 1965	1963 to 1964	1962 to 1963	1961 to 1962	
Professional, administrative, and technical support:										
Accountants -----	6.7	7.0	5.7	4.6	3.8	3.5	2.8	3.3	2.8	4.5
Auditors -----	7.0	7.2	5.5	4.8	3.8	3.9	3.1	3.6	2.9	4.6
Chief accountants -----	7.1	5.8	5.5	5.1	3.3	3.9	4.8	2.8	2.6	4.5
Attorneys -----	7.1	( <sup>2</sup> )	5.3	3.2	4.0	4.2	3.3	4.6	3.2	( <sup>3</sup> )
Buyers -----	6.1	6.6	4.9	4.2	( <sup>4</sup> )	( <sup>4</sup> )	( <sup>4</sup> )	( <sup>4</sup> )	( <sup>4</sup> )	( <sup>4</sup> )
Job analysts -----	4.1	2.1	7.0	3.4	5.4	4.3	3.5	2.6	1.4	3.7
Directors of personnel -----	7.4	5.4	5.4	3.8	3.6	3.5	4.6	3.0	3.7	4.5
Chemists -----	5.9	6.5	5.1	4.4	4.8	3.9	3.3	3.8	3.9	4.6
Engineers -----	5.5	6.2	5.4	4.3	3.7	3.2	2.9	4.4	2.6	4.2
Engineering technicians -----	6.3	5.8	5.1	3.7	2.8	2.3	3.6	2.9	( <sup>4</sup> )	54.1
Drafting -----	4.9	5.8	5.3	3.5	1.5	( <sup>2</sup> )	2.6	3.6	3.2	( <sup>3</sup> )
Average percent increase <sup>6</sup> -----	6.2	5.8	5.5	4.2	3.6	3.7	3.4	3.3	3.0	4.3
Clerical:										
Accounting clerks -----	6.2	4.7	4.7	3.3	3.0	2.2	2.8	2.5	3.0	3.6
File clerks -----	5.5	5.5	6.8	5.1	2.9	2.2	3.1	2.6	( <sup>4</sup> )	54.2
Keypunch operators -----	6.4	5.3	4.9	5.2	3.7	2.3	2.7	2.5	( <sup>4</sup> )	4.1
Office boys or girls -----	6.3	6.7	6.2	5.4	2.8	3.0	2.3	2.8	2.6	4.2
Secretaries -----	6.4	5.3	4.6	( <sup>4</sup> )	( <sup>4</sup> )	( <sup>4</sup> )	( <sup>4</sup> )	( <sup>4</sup> )	( <sup>4</sup> )	( <sup>4</sup> )
Stenographers -----	5.8	5.9	4.9	4.6	2.9	2.3	2.4	2.5	( <sup>2</sup> )	53.9
Switchboard operators -----	3.8	4.8	4.8	4.3	3.0	( <sup>2</sup> )	2.4	3.0	2.8	( <sup>3</sup> )
Tabulating-machine operators -----	7.1	5.4	5.0	4.8	3.2	2.3	2.5	2.4	2.5	3.9
Typists -----	6.0	5.7	5.8	5.4	2.6	2.5	2.6	2.6	2.5	4.0
Average percent increase <sup>6</sup> -----	6.2	5.5	5.3	4.8	3.0	2.4	2.7	2.6	2.8	3.9
All survey occupations:										
Average percent increase <sup>6</sup> -----	6.2	5.7	5.4	4.5	3.3	3.1	3.1	3.0	2.9	4.1

<sup>1</sup> Actual survey-to-survey increases have been prorated to a 12-month period because changes in timing had lengthened the period between the 1966 and 1967 surveys.

<sup>2</sup> Comparable data not available for both years.

<sup>3</sup> Comparison over this period was not possible because of changes in the definition of the occupation.

<sup>4</sup> Not surveyed.

<sup>5</sup> First surveyed in 1962; therefore, the average annual rate of increase relates to the 1962 to 1970 period.

<sup>6</sup> Data for one administrative occupation, managers of office services last surveyed in 1968, and one clerical occupation, bookkeeping-machine operators last surveyed in 1964, not shown above, are included in the average percent increases for the periods during which they were surveyed.

In the 1969-70 period, increases in average salaries for 9 of the 11 professional, administrative, and technical support occupations ranged from 5.5 to 7.4 percent, while 8 of the 9 clerical occupations advanced between 5.5 and 6.4 percent. Increases were generally higher than had been recorded for any other year period since 1961-62, when the Bureau began measuring occupational wage trends on a national basis.

To examine the changes in salaries that have occurred since 1961 for different levels of work, all of the occupational classifications were grouped into the three broad categories described in the tabulation which follows. The year-to-year percent increases for each group were determined by adding average salaries for all occupations in the group for 2 consecutive years, and dividing the latter sum by the earlier sum. The resultant relative, less 100, shows the percent of increase. Changes in the scope of the survey or in the occupational definitions were incorporated into the series as soon as comparable data for 2 consecutive periods were available. The 9 year trends were obtained by linking changes for the individual periods.

Work level categories <sup>1</sup>	Percent increases in average salaries									
	1969 to 1970	1968 to 1969	1967 to 1968	1966 to 1967 <sup>2</sup>	1965 to 1966	1964 to 1965	1963 to 1964	1962 to 1963	1961 to 1962	1961 to 1970 <sup>2</sup>
Group A (GS grades 1-4 in appendix D) ----	6.2	5.5	5.1	4.5	2.9	2.2	2.7	2.7	2.8	40.3
Group B (GS grades 5-10 in appendix D) ---	6.3	6.5	5.8	4.8	3.7	3.3	2.6	4.0	2.6	47.2
Group C (GS grades 11-15 in appendix D) --	6.4	5.9	4.7	4.1	4.2	4.2	3.5	3.7	3.5	48.1

<sup>1</sup> Work levels used for computing 1969 to 1970 increases are:

Group A--All levels of accounting clerks, file clerks, keypunch operators, stenographers, switchboard operators, tabulating-machine operators, and typists; and office boys or girls, secretaries I, draftsmen-tracers, draftsmen I, and engineering technicians I and II.  
 Group B--Accountants I, II, and III; attorneys I, II, and III; buyers I, II, and III; chemists I, II, and III; draftsmen II and III; engineers I, II, and III; engineering technicians III, IV, V, and VI; job analysts I, II, and III; and secretaries II, III, and IV.  
 Group C--Accountants IV and V; attorneys II, III, IV, V, and VI; auditors IV; buyers IV; chemists IV, V, VI, VII, and VIII; chief accountants I, II, III, and IV; directors of personnel I, II, III, and IV; engineers IV, V, VI, VII, and VIII; and job analysts IV.

<sup>2</sup> Actual survey-to-survey increases have been prorated to a 12-month period because changes in timing had lengthened the period between the 1966 and 1967 surveys.



Average salaries increased more for the higher occupational levels (group C), than for the other two groupings from 1961 through 1966, with the exception of the 1962-63 period. During the periods between 1966 and 1969, however, while all three groups showed successively higher year-to-year increase, group B (middle occupational levels) reported larger increases than either group A or C. Between 1969 and 1970, the increases for all three groups were nearly identical; the increase for group C was slightly greater than the other two.

Beginning with the 1965-66 period, pay entry and developmental level professional and administrative positions increased each year at a faster pace than for clerical, technical support, or experienced professional and administrative positions. In the 1969-70 period, however, although again showing the highest percent increase, the entry and developmental group was the only one which increased at a lesser rate than the previous year. By grouping survey occupational levels into the four categories mentioned above, differences in the rate of change in average salaries since 1961 can be illustrated.<sup>5</sup> Relative salary levels were computed in the same manner as the percent increases in the foregoing table and were plotted using a ratio scale. (See chart 2.)

Average salaries of clerical and technical support workers increased over the 9-year period by practically identical percentage amounts, but have not maintained pace with increases for the two professional and administrative occupational groups. For the clerical and technical support groups, salaries increased at an average annual rate of 3.9 percent over the period. For the two professional and administrative categories, the average rates of increase were 4.4 percent for the experienced group and 4.8 percent for the entry and developmental employee group.

Changes in average salaries reflect not only general salary increases and merit or other increases given to individuals while in the same work level category, but they also may reflect other factors such as employee turnover, expansions or reductions in the work force, and changes in staffing patterns within establishments with different salary levels. For example, an expansion in force may increase the proportion of employees at the minimum of the salary range established for a work level, which would tend to lower the average, whereas, a reduction or a low turnover in the work force may have the opposite effect. Similarly, year-to-year promotions of employees to higher work levels of professional and administrative occupations may affect average salaries, lowering or raising the average. For example, the established salary ranges for such occupations are relatively wide, and promoted employees, who may have been paid the maximum of the salary scale for the lower level, are likely to be replaced by less experienced employees who may be paid the minimum; or vacancies may exist at the time of the resurvey. Occupations most likely to reflect such changes in the salary averages are the higher levels of professional and administrative occupations and single-incumbent positions such as chief accountant and director of personnel.<sup>6</sup>

#### Average Salaries, June 1970

Average monthly salaries for the occupations included in this report ranged from \$343 for file clerks I to \$2,753 for the top level of attorney surveyed (table 1). These extremes

<sup>5</sup> The base year 1967=100 is used to conform with uniform Federal statistical practice.

Work levels used for computing 1969-70 increase were:

Clerical - All clerical levels for which data are shown in table 1.

Technical support - All level of draftsmen and engineering technicians for which data are shown in table 1.

Entry and developmental professional and administrative - Accountants I and II; auditors I and II; attorneys I; job analysts I and II; chemists I and II; and engineers I and II.

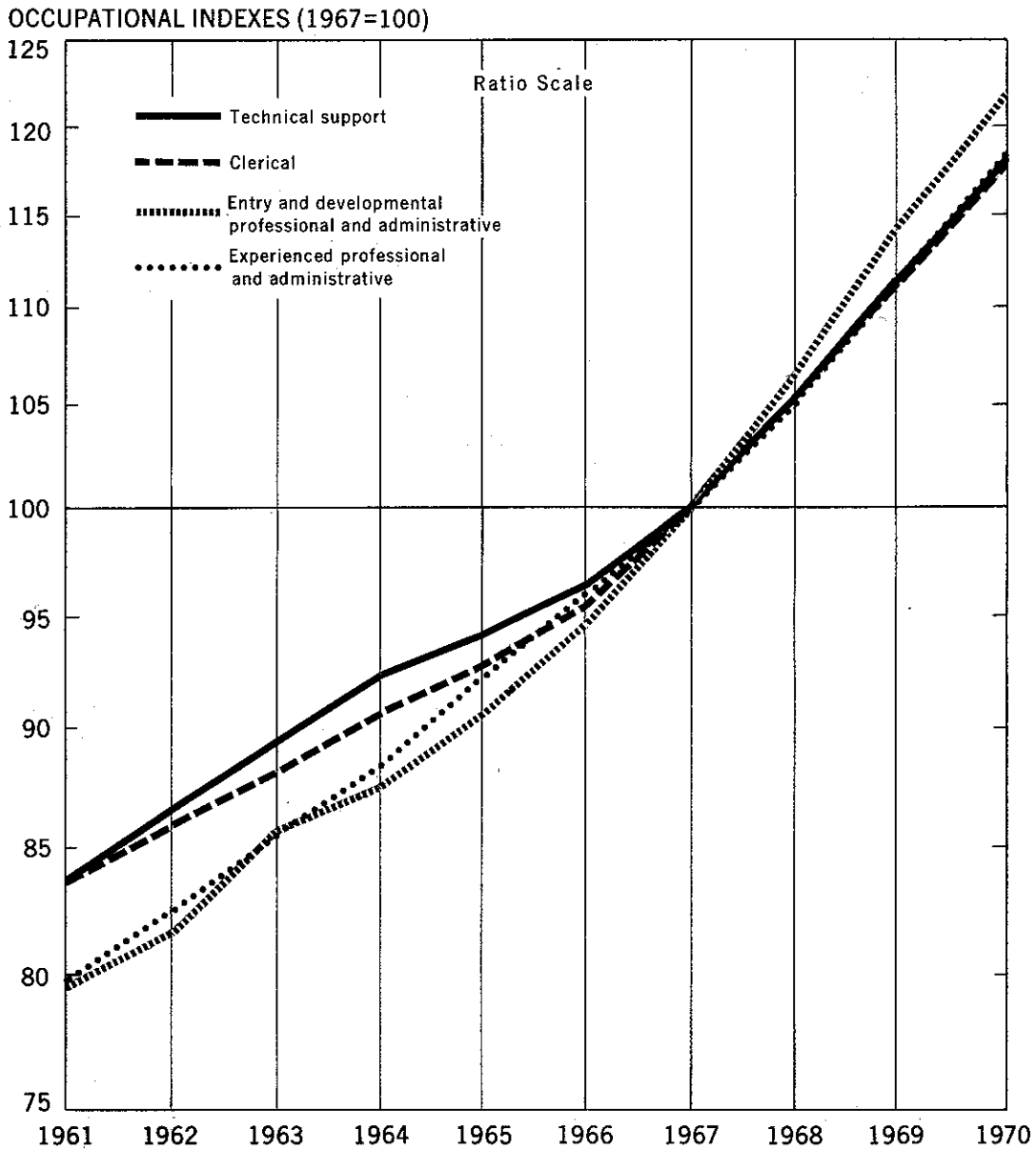
Experienced professional and administrative - Accountants III, IV, and V; auditors III and IV; chief accountants I, II, III, and IV; attorneys II, III, IV, V, and VI; job analysts III and IV; directors of personnel I, II, III, and IV; chemists III, IV, V, VI, VII, and VIII; and engineers III, IV, V, VI, VII, and VIII.

A few survey levels, not readily identifiable with any of the four occupational categories, were not used.

The 1966-67 increases were prorated to a 12-month period. A change in survey timing in 1967 resulted in a longer period between surveys.

<sup>6</sup> These types of occupations also may be subject to greater sampling error, as explained in the last paragraph of appendix A.

**Chart 2. Rates of Salary Changes for Selected Occupational Groups, 1961 to 1970**



reflect the wide range of duties and responsibilities represented by the occupational work levels surveyed. Average salaries for the occupational levels, and a brief indication of the duties and responsibilities they represent, are summarized in the following paragraphs.<sup>7</sup>

Among the five levels of accountants surveyed, average monthly salaries ranged from \$709 for accountants I to \$1,290 for accountants V. Auditors in the four levels defined for survey had average salaries ranging from \$741 a month for auditors I to \$1,170 for auditors IV. Level I in both the accounting and auditing series included trainees who had bachelor's degrees in accounting or the equivalent in education and experience combined. At each corresponding level, average salaries were higher for auditors than for accountants. For level III, the most heavily populated group in both series, monthly salaries averaged \$891 for accountants and \$956 for auditors. Whereas almost 70 percent of the accountants were employed in manufacturing, this industry division employed slightly less than 40 percent of the auditors.<sup>8</sup> Other industry divisions which accounted for large numbers of auditors were finance, insurance, and real estate (29 percent), and public utilities (17 percent). The proportion of employees in each major industry division within scope of the survey is shown by occupation in table 7 and presented graphically in chart 5, page 14.

Chief accountants were surveyed separately from accountants and included those who develop or adapt and direct the accounting program for a company or an establishment (plant) of a company. Level classification was determined by the extent of delegated authority and responsibility; the technical complexity of the system; and, to a lesser degree, the size of the professional staff directed. Chief accountants at level I, who have authority to adapt the accounting system, established at higher levels, to meet the needs of an establishment of a company with relatively few and stable functions and work processes (directing one or two accountants), averaged \$1,160 a month. Chief accountants IV,<sup>9</sup> who have authority to establish and maintain the accounting program, subject to general policy guidelines, for a company with numerous and varied functions and work process (directing as many as 40 accountants), averaged \$1,928 a month. Almost three-fifths of the chief accountants who met the requirements of the definitions for these four levels were employed in manufacturing industries, while almost one-sixth were in the finance, insurance, and real estate divisions.

Attorneys were classified into six levels based upon the difficulty of their assignments and their responsibilities.<sup>10</sup> Attorneys I which included new law graduates with bar membership and those performing work that was relatively uncomplicated due to clearly applicable precedents and well established facts averaged \$988 a month. Attorneys in the top level surveyed, level VI, earned an average of \$2,753 a month. These attorneys dealt with legal matters of critical importance to their organizations, and were usually subordinate only to the general counsel or his immediate deputy in very large firms. Finance, insurance, and real estate industries employed over four-tenths of the attorneys; manufacturing industries employed almost three-tenths; and a high proportion of the remainder were employed in public utilities (almost one-fifth).

Buyers averaged \$709 a month at level I, which included those who purchased "off-the-shelf" and readily available items and services from local sources. Buyers IV, who purchased large amounts of highly complex and technical items, materials, or services were paid monthly salaries averaging \$1,158.<sup>11</sup> Manufacturing industries accounted for 86 percent of the buyers in the four levels.

In the personnel management field, four work levels of job analyst and five levels of directors of personnel were studied.<sup>12</sup> Job analysts I, defined to include trainees under immediate supervision, averaged \$745, compared with \$1,086 for job analysts IV, who analyze

<sup>7</sup> Classification of employees in the occupations and work levels surveyed was based on factors detailed in the definitions in appendix C.

<sup>8</sup> Establishments primarily engaged in providing accounting and auditing services were excluded from the survey.

<sup>9</sup> Although level V was surveyed, as defined in appendix C, too few employees met requirements for this level to warrant presentation of salary figures.

<sup>10</sup> Establishments primarily engaged in offering legal advice or legal services were excluded from the survey.

<sup>11</sup> Although buyers V were surveyed, as defined in appendix D, too few employees met requirements for this level to warrant presentation of salary figures.

<sup>12</sup> Although directors of personnel V were surveyed, as defined in appendix D, too few employees met requirements for this level to warrant presentation of salary figures.

and evaluate a variety of the more difficult jobs under general supervision and who may participate in the development and installation of evaluation or compensation systems. Directors of personnel were limited by definition to those who had programs that included, at a minimum, responsibility for administering a job evaluation system, employment and placement functions, and employee relations and services functions. Those with significant responsibility for actual contract negotiation with labor unions as the principal company representative were excluded. Provisions were made in the definition for weighing various combinations of duties and responsibilities to determine the level classification. Among personnel directors with job functions as specified for the four levels of responsibility, average monthly salaries ranged from \$1,049 for level I to \$1,827 for level IV. Manufacturing industries accounted for 65 percent of the job analysts and 69 percent of the directors of personnel included in the study; the finance, insurance, and real estate industries ranked next, with 23 percent of the job analysts and 14 percent of the directors of personnel.

Chemists and engineers each were surveyed in eight levels. Both series started with a professional trainee level, typically requiring a B.S. degree. The highest level surveyed involved either full responsibility over a very broad and highly complex and diversified engineering or chemical program, with several subordinates each directing large and important segments of the program; or individual research and consultation in difficult problem areas where the engineer or chemist was a recognized authority and where solutions would represent a major scientific or technological advance.<sup>13</sup> Average monthly salaries ranged from \$851 for engineers I to \$2,116 for engineers VIII, and from \$764 for chemists I to \$2,311 for chemists VIII. Although, at level I, the average salaries of engineers exceeded those for chemists by 11 percent, at level IV the difference narrowed to 3 percent, and at level VIII, the average salaries of chemists exceeded those for engineers by 9 percent. Level IV, the largest group in each series, included professional employees who were fully competent in all technical aspects of their assignments, worked with considerable independence, and, in some cases, supervised a few professional and technical workers. Manufacturing industries accounted for almost 80 percent of all engineers and 91 percent of all chemists; public utilities, 10 and less than 1 percent, respectively; and the surveyed engineering and scientific services employed virtually all of the others.

By definition, the five-level series for engineering technicians was limited to employees providing semiprofessional technical support to engineers engaged in such areas as research, design, development, testing, or manufacturing process improvement, and whose work pertained to electrical, electronic, or mechanical components or equipment. Technicians engaged primarily in production or maintenance work were excluded. Engineering technicians I, who performed simple, routine tasks under close supervision, or from detailed procedures, were paid monthly salaries averaging \$525. Engineering technicians V, the highest level surveyed, averaged \$920 a month. That level included fully experienced technicians performing more complex assignments involving responsibility for planning and conducting a complete project of relatively limited scope, or a portion of a larger and more diverse project, in accordance with objectives, requirements, and design approaches as outlined by the supervisor or a professional engineer. Averages for intermediate levels III and IV, at which a majority of the technicians surveyed were classified, were \$712 and \$820, respectively. As might be expected, nearly all of the technicians as defined were employed in manufacturing (77 percent) and in the scientific services industries studied (15 percent). Although the ratio of such technicians to engineers studied was about 1 to 4 in all manufacturing industries, higher ratios of approximately 1 to 3 were found in establishments manufacturing mechanical and electrical equipment and 1 to 2 in research, development, and testing laboratories.

In the drafting field, the definitions used in the survey covered four levels of work—draftsmen-tracers, and draftsmen I, II, and III. Monthly salaries averaged \$473 for draftsmen-tracers and ranged from \$567 to \$850 among the three levels of draftsmen.

<sup>13</sup> It was recognized in the definition that top positions of some companies with unusually extensive and complex engineering or chemical programs were above that level.

Draftsmen-tracers copy plans and drawings prepared by others or prepare simple or repetitive drawings of easily visualized items. The three draftsmen levels as defined ranged from employees preparing detail drawings of single units or parts (level I) to those who, working in close support with the design originator, plan the graphic presentation of complex items having distinctive design features, and either prepare or direct the preparation of the drawings (level III). The drafting employees were distributed by industry in about the same proportion as engineers, with 78 percent in manufacturing, 7 percent in public utilities, and 13 percent in the selected engineering and scientific services industries studied.

Keypunch supervisors, studied for the first time this year, were classified on the basis of combinations of three elements—level of supervisory responsibility, difficulty of keypunch work supervised, and number of employees supervised. Keypunch supervisors I, who were responsible for the day-to-day supervision of fewer than 20 operators performing routine keypunching operations, averaged \$574 a month. At level IV, the highest level reported,<sup>14</sup> keypunch supervisors averaged \$824. Individuals classified at this level had greater responsibilities because they supervised more complex keypunching operations, larger numbers of operators, and/or performed at a higher level of supervisory authority.

Among the 21 clerical jobs included in this study, average monthly salaries for secretaries, the most heavily populated clerical occupation studied, ranged from \$522 at level I to \$679 at level IV. For other large groups, average salaries of \$456 and \$521 were reported for general and senior stenographers; \$439 and \$568 for accounting clerks I and II; and the two levels of typists averaged \$393 and \$456. Generally, average salaries for clerical workers were highest in public utilities and manufacturing industries and lowest in the finance, insurance, and real estate, and retail trade divisions. Employment in manufacturing exceeded that in any of the nonmanufacturing divisions within scope of the survey in 14 of the 21 clerical work levels; highest employment totals in the other seven levels were in the finance, insurance, and real estate division. Women accounted for 95 percent or more of the employees in 14 of the clerical work levels, and men accounted for one-half or more in four (tabulating-machine operators I, II, and III, and office boys or girls).

Median monthly salaries (the amount below and above which 50 percent of the employees were found) for most of the work levels were slightly lower than the weighted averages (means) cited above (i. e., the salaries in the upper halves of the arrays had a greater effect on the averages than did the salaries in the lower halves). The relative difference between the median and the mean was less than 3 percent for 67 of the 81 work levels and as much as 3 but less than 5 percent in the 14 other levels.

#### Salary Levels in Metropolitan Areas

In most of the occupational work levels, average salaries for employees in metropolitan areas (table 2) were either identical to or slightly higher than average salaries for employees in all establishments within full scope of the survey (table 1). Employment in the survey occupations in metropolitan areas accounted for almost nine-tenths of the total nationwide employment reported in these occupations. The proportions varied, however, among occupations and work levels. Nearly all of the attorneys at each level, for example, were employed in metropolitan areas, whereas the proportion of chief accountants and directors of personnel for all levels combined was approximately four-fifths and seven-tenths, respectively, with a smaller proportion at the lowest levels. In 64 of the 81 work levels studied, 85 percent or more of the employment was in metropolitan areas. It is apparent, therefore, that although average salaries usually were lower in nonmetropolitan counties, in those work levels in which nearly all of the employment was

<sup>14</sup> Although keypunch supervisors V were surveyed, as defined in appendix D, too few employees met requirements for this level to warrant presentation of salary figures.

in metropolitan areas, nonmetropolitan counties could have little effect upon the averages for all establishments combined. Only in five of the 81 work levels studied were average salaries more than 1.5 (but not more than 2.5) percent higher in metropolitan areas than in all areas combined; in all of these cases the proportion of the total employment within nonmetropolitan counties ranged approximately between one-tenth and one-third.

Increases in average salaries in metropolitan area establishments from June 1969 to June 1970 were within one-half percentage point of increases reported for all areas studied in 67 of the 77 levels for which year-to-year increases were reported. The year-to-year increases in metropolitan areas compared with all areas were larger for 32, smaller for 30 levels, and the same for 15.

### Salary Levels in Large Establishments

It was possible to present separate data for 75 of the 81 occupation work levels for all establishments with 2,500 employees or more (table 3). Comparisons between employments and relative salary levels in these establishments and all establishments combined also are presented. Establishments employing 2,500 or more accounted for almost three-eighths of the employment in professional, administrative, supervisory, and clerical occupations within scope of the survey, and nearly two-fifths of total employment in the selected occupations studied. Large establishments accounted for varying proportions of total employment in the 75 occupational work levels shown in table 3, ranging from 16 to 75 percent (file clerks I and job analysts IV, respectively).

The salary levels in large establishments, expressed as a percent of levels in all establishments combined ranged from 99 for buyers IV, and attorneys VI to 116 for directors of personnel III. As shown in the following tabulation, salary averages for large establishments exceeded the all establishment averages by 5 percent or more in 19 of 21 clerical jobs, but in only 22 of 54 nonclerical jobs.

Pay levels in large establishments as percent of all establishment average	Number of job categories	
	Professional, administrative, and technical	Clerical
Total -----	54	21
95-100 -----	3	-
101-104 -----	29	2
105-109 -----	15	12
110 and over -----	7	7

The relative salary levels in large establishments tended to be highest for work levels in which such establishments accounted for the smallest proportion of the total employment. Thus, while the degree of employment concentration in large establishments ranged from 16 to 46 percent for clerical jobs, such firms contributed 40 percent or more of the employment in almost three-fifths of the nonclerical jobs.

### Salary Distribution

Percent distributions of employees by monthly salaries are presented for the professional and administrative occupations in table 4, and for engineering technicians and key-punch supervisors in table 5; distributions by weekly salaries are shown for employees in drafting and clerical occupations in table 6.<sup>15</sup> Within almost all of the 81 occupation work levels, salary rates for some of the highest paid employees were twice those of the lowest

<sup>15</sup> Technical considerations dictated the summarization of employee distributions by weekly salaries for drafting and clerical jobs.

paid employees. The absolute spread between highest and lowest paid workers within given work levels tended to widen with each successive work level for most occupations in which two levels or more were surveyed. All occupations in which two levels or more of work were surveyed showed a substantial degree of overlapping of individual salaries between work levels in the same occupation. Ranges in salary rates of employees in established pay grades or work levels within salary structures of individual firms also overlapped substantially.

The middle 50 and 80 percent of the range, and the median salary for each occupation work level have been charted (charts 3 and 4) to point up occupational pay relationships as well as the typically greater degree of salary dispersion associated with the higher work levels in each occupational series.

Distribution of work levels by degree of dispersion  
(salary range of middle 50 percent of employees  
expressed as a percent of median salary)

Occupational group	Total	Degree of dispersion				
		Under 15	15 and under 20	20 and under 25	25 and under 30	30 and over
All levels -----	81	4	23	38	15	1
Accountants-----	5		4	1		
Auditors-----	4		2	2		
Chief accounts-----	4		1	2	1	
Attorneys-----	6		1	4	1	
Buyers-----	4		1	3		
Job analysts-----	4		2	2		
Directors of personnel-----	4			3	1	
Chemists-----	8	1	2	5		
Engineers-----	8	3	4	1		
Engineering technicians-----	5		4	1		
Drafting-----	4		1	2	1	
Keypunch supervisors-----	4			1	3	
Clerical-----	21		1	11	8	1

Expressing the salary range of the middle 50 percent of employees in each work level as a percent of the median salary permitted comparison of salary ranges on the same basis and eliminated extreme low and high salaries from each comparison. As shown in the tabulation, the degree of dispersion was between 15 and 30 percent of the median salary in all but five work levels (11.1, 12.0, and 14.6 for engineers I, II, and III, respectively, 14.9 for chemists II, and 30.4 for switchboard operators I). This relative spread tended to be smaller for the professional, administrative, and engineering technician work levels than for the clerical and drafting levels studied.

Differences in the range of salaries paid individuals within work levels surveyed reflect a variety of factors other than differences in the range of duties and responsibilities encompassed by the various work level definitions. Two of these factors are salary structures within establishments which provide for a range of rates for each grade level and regional variations, particularly in the clerical levels (clerical employees are usually recruited locally, while the job field tends to be broader regionally, often national in scope, for the professional and administrative occupations).<sup>16</sup> As pointed out earlier (and indicated in table 7 and chart 5), employment in the various industries within the scope of the survey varies considerably from occupation to occupation. These variations in employment are reflected also in salary levels and distributions to the extent that salaries differ by industry, as explained in the following section.

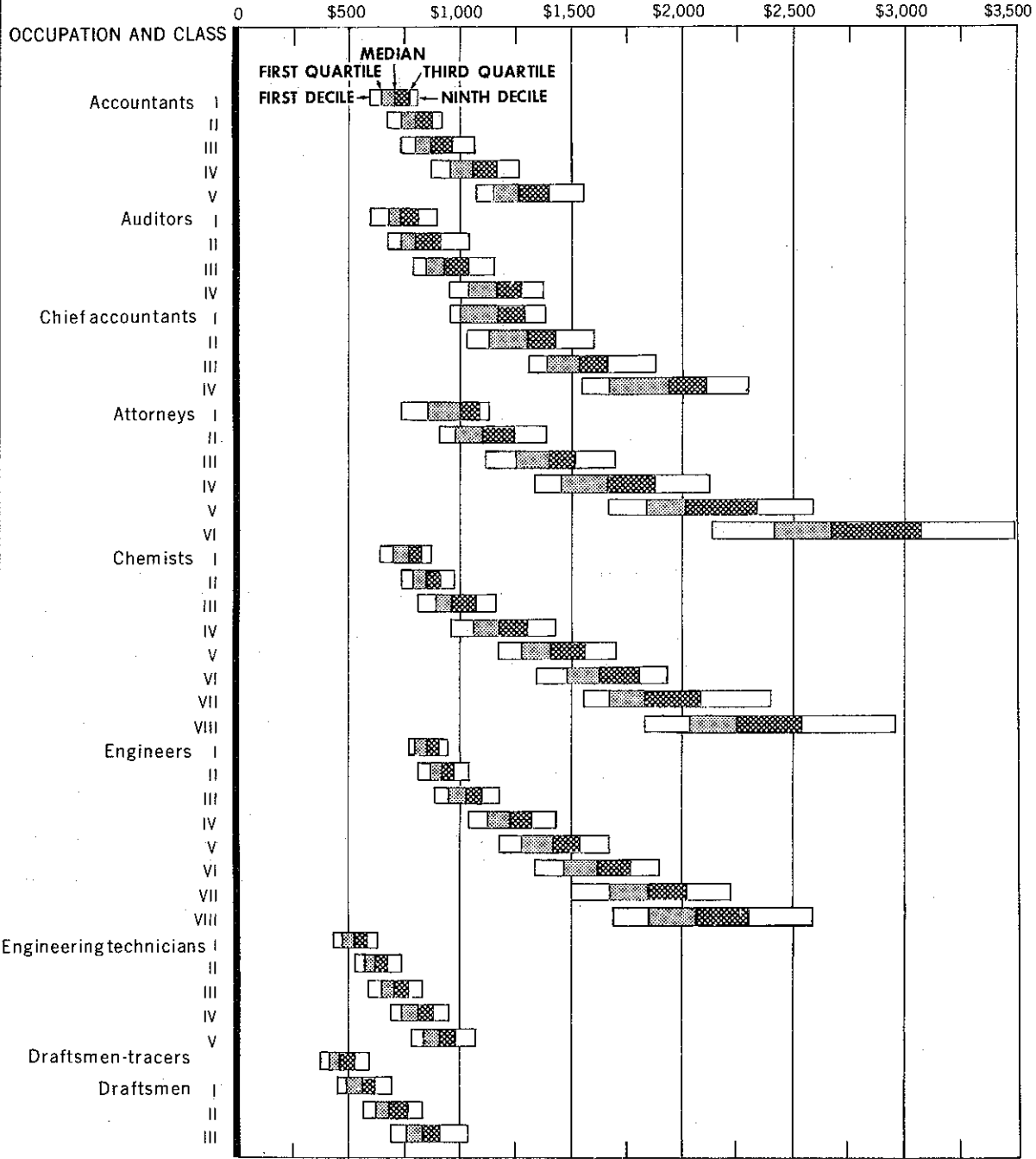
### Pay Differences by Industry

The survey was planned to permit publication of national salary estimates by level of work. By combining the data for all levels of work studied in each occupation, it was possible to present comparisons between relative salary levels in major industry divisions

<sup>16</sup> For an analysis of interarea pay differentials in clerical salaries, see Area Wage Survey: Metropolitan Areas, United States and Regional Summaries, 1968-69 (BLS Bulletin 1625-91, 1970).

### Chart 3. Salaries in Professional and Technical Occupations, June 1970

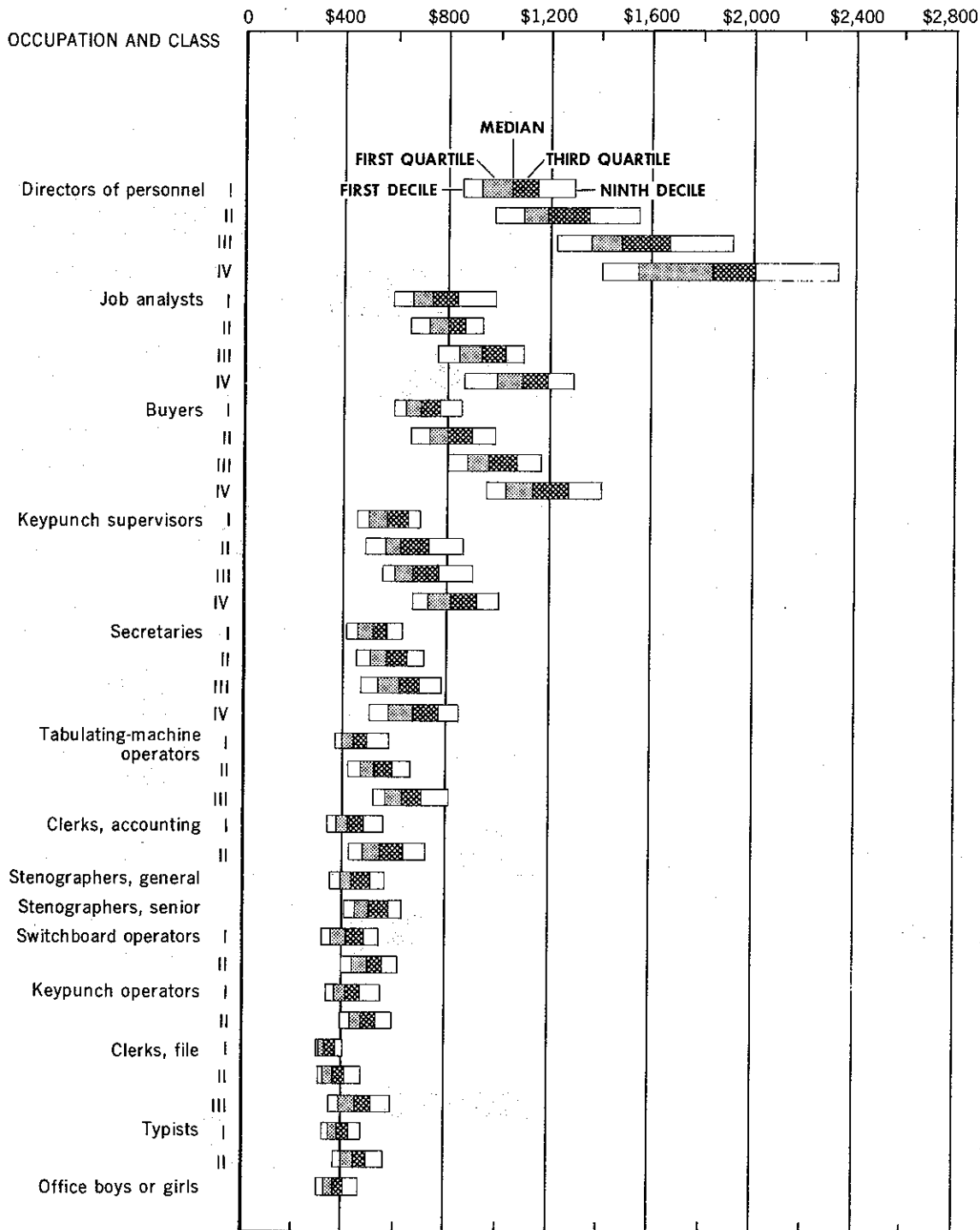
Median Monthly Salaries and Ranges Within Which Fell 50 Percent and 80 Percent of Employees



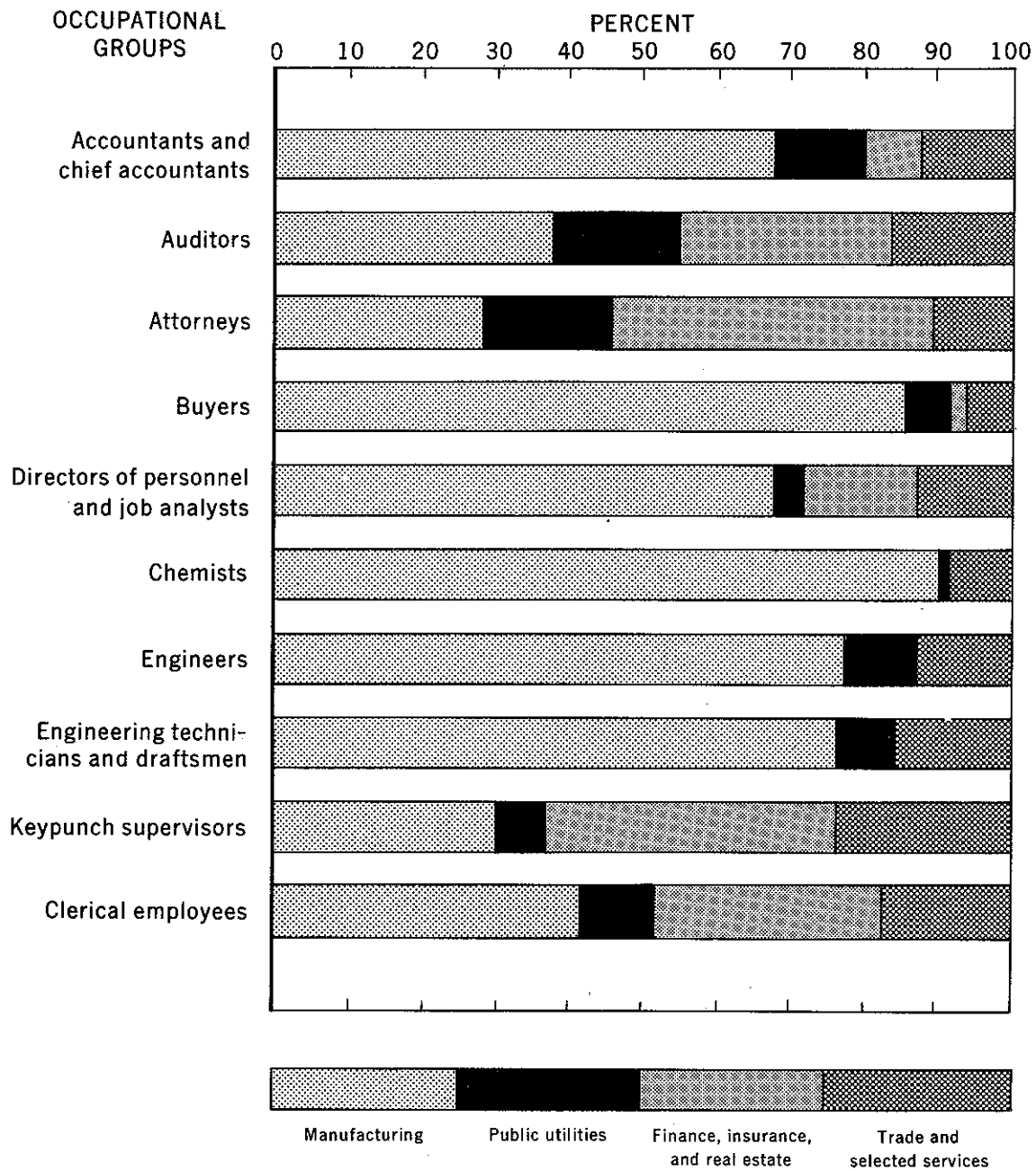


# Chart 4. Salaries in Administrative and Clerical Occupations, June, 1970

Median Monthly Salaries and Ranges Within Which Fell 50 Percent and 80 Percent of Employees



**Chart 5. Relative Employment in Selected Occupational Groups by Industry Division, June 1970**



and all industries combined (table 8). To obtain relative salary levels, the all-industry employment in each work level was used as a constant employment weight to compute aggregates in each industry division to eliminate the influence of differences among industry divisions in the proportion of employment in various work levels. The industry division aggregates for work levels within an occupation were combined and expressed as percentages of the corresponding aggregates in all industries combined.

The relative salary levels for most of the professional, administrative, clerical supervisory, and technical support occupations tended to be nearest 100 percent of the all-industry levels in manufacturing, which had 57 to 91 percent of the employees in 9 of the 12 occupations. Relative salary levels in the public utilities and selected services industries were generally the highest. For engineers, however, the figures were 97 percent for public utilities, 98 percent for selected services, and 101 percent for manufacturing. Conversely, for engineering technicians, public utilities showed a relative salary of 107, while selected services reported 102, and manufacturing 99. Relative salary levels for 8 of the 9 clerical occupations were highest in the public utilities industries.

For all of the clerical occupations studied, and for a majority of the professional and administrative occupations in which comparisons could be made, relative salary levels were lower in retail trade and in finance, insurance, and real estate than in other industry divisions. It is apparent, therefore, that in those occupations in which retail trade and the finance industries include a substantial proportion of the total employment, the average salaries for all industries combined are lowered, and the relative levels in industries such as manufacturing and public utilities tend to be well above 100 percent of the all-industry level. For example, relative pay levels for file clerks of 108 percent in manufacturing and 121 percent in public utilities reflect the influence of lower salaries for the high proportion (59 percent) of all-industry employment included in the finance industries. The finance industries, however, also reported lower average standard weekly hours than in the other industries surveyed, as shown in table 9.

#### Average Standard Weekly Hours

The length of the standard workweek, on which the regular straight-time salary was based, was obtained for individual employees in the occupations studied. When individual weekly hours were not available, particularly for some higher level professional and administrative positions, the predominant workweek of the office work force was used as the standard workweek. The distribution of average weekly hours (rounded to the nearest half hour) is presented in table 9 for all work levels of each occupation combined in major industry divisions surveyed. Average weekly hours were lower in finance, insurance, and real estate than in the other industry divisions. Thus, in finance industries, workweeks averaged 38 hours for a majority of the occupations, compared to 39 or 39.5 hours in the remaining industries surveyed.<sup>17</sup>

<sup>17</sup> For information on schedule weekly hours of office workers employed in metropolitan areas, see Area Wage Survey: Selected Metropolitan Areas, 1968-69 (BLS Bulletin 1625-90, 1970).

Table 1. Average salaries: United States

(Employment and average salaries for selected professional, administrative, technical, and clerical occupations in private industry, United States except Alaska and Hawaii, June 1970, and percent increase in mean salaries during the year<sup>2</sup>)

Occupation and class (See definitions in appendix C)	Number of employees <sup>3</sup>	Monthly salaries <sup>4</sup>				Annual salaries <sup>4</sup>				Percent increase in mean salaries <sup>2</sup>
		Mean	Median	Middle range <sup>5</sup>		Mean	Median	Middle range <sup>5</sup>		
				First quartile	Third quartile			First quartile	Third quartile	
<b>Accountants and auditors</b>										
Accountants I	4,795	\$709	\$710	\$650	\$765	\$8,503	\$8,520	\$7,800	\$9,180	6.3
Accountants II	10,414	801	800	730	871	9,609	9,600	8,760	10,452	6.6
Accountants III	25,777	891	875	800	973	10,686	10,500	9,600	11,676	6.6
Accountants IV	17,559	1,063	1,050	955	1,166	12,755	12,600	11,460	13,992	6.6
Accountants V	6,331	1,290	1,260	1,151	1,400	15,477	15,120	13,812	16,800	7.7
Auditors I	804	741	726	674	816	8,894	8,712	8,088	9,792	6.3
Auditors II	1,842	830	800	735	917	9,955	9,600	8,520	11,004	7.2
Auditors III	4,323	956	937	850	1,041	11,475	11,244	10,200	12,492	7.0
Auditors IV	2,243	1,170	1,166	1,044	1,274	14,044	13,992	12,528	15,288	7.0
Chief accountants I	599	1,160	1,166	1,000	1,295	13,917	13,992	12,000	15,540	5.3
Chief accountants II	1,260	1,304	1,308	1,123	1,426	15,647	15,696	13,476	17,112	6.9
Chief accountants III	703	1,565	1,540	1,390	1,667	18,780	18,480	16,680	20,004	6.0
Chief accountants IV	287	1,928	1,933	1,666	2,104	23,133	23,196	19,992	25,248	12.4
<b>Attorneys</b>										
Attorneys I	634	988	1,000	856	1,083	11,859	12,000	10,272	12,996	7.6
Attorneys II	1,249	1,132	1,110	978	1,250	13,585	13,320	11,736	15,000	6.3
Attorneys III	1,775	1,407	1,403	1,250	1,518	16,884	16,836	15,000	18,216	6.3
Attorneys IV	1,659	1,692	1,666	1,456	1,875	20,304	19,992	17,472	22,500	6.0
Attorneys V	793	2,116	2,083	1,845	2,332	25,391	24,996	22,140	27,984	7.2
Attorneys VI	458	2,753	2,667	2,414	3,073	33,032	32,004	28,968	36,876	12.3
<b>Buyers</b>										
Buyers I	2,490	709	696	639	775	8,512	8,352	7,668	9,300	8.1
Buyers II	10,137	813	800	723	895	9,759	9,600	8,676	10,740	5.3
Buyers III	13,091	972	958	870	1,069	11,665	11,496	10,440	12,828	6.6
Buyers IV	4,968	1,158	1,135	1,025	1,274	13,895	13,620	12,300	15,288	5.7
<b>Personnel management</b>										
Job analysts I	123	745	736	666	835	8,938	8,832	7,992	10,020	9.8
Job analysts II	370	798	803	725	862	9,571	9,636	8,700	10,344	5.4
Job analysts III	609	932	924	839	1,026	11,183	11,088	10,068	12,312	5.5
Job analysts IV	626	1,086	1,091	983	1,191	13,035	13,092	11,796	14,292	1.6
Directors of personnel I	1,057	1,049	1,050	925	1,150	12,593	12,600	11,100	13,800	6.3
Directors of personnel II	1,963	1,236	1,188	1,096	1,350	14,832	14,256	13,152	16,200	6.5
Directors of personnel III	1,035	1,535	1,477	1,356	1,666	18,419	17,724	16,272	19,992	10.0
Directors of personnel IV	409	1,827	1,833	1,550	2,013	21,920	21,996	18,600	24,156	6.5
<b>Chemists and engineers</b>										
Chemists I	1,601	764	765	700	825	9,164	9,180	8,400	9,900	4.9
Chemists II	5,211	853	850	784	911	10,233	10,200	9,408	10,932	6.3
Chemists III	9,158	978	965	880	1,060	11,737	11,580	10,560	12,720	6.1
Chemists IV	11,143	1,185	1,175	1,055	1,307	14,218	14,100	12,660	15,684	6.4
Chemists V	7,407	1,422	1,408	1,275	1,558	17,066	16,896	15,300	18,696	6.1
Chemists VI	4,249	1,642	1,625	1,480	1,813	19,700	19,500	17,760	21,756	6.3
Chemists VII	1,700	1,911	1,843	1,675	2,081	22,937	22,116	20,100	24,972	2.1
Chemists VIII	483	2,311	2,249	2,037	2,542	27,731	26,988	24,444	30,504	2.4
Engineers I	13,028	851	850	806	900	10,209	10,200	9,672	10,800	5.7
Engineers II	32,117	923	917	865	975	11,077	11,004	10,380	11,700	5.9
Engineers III	85,759	1,029	1,025	950	1,100	12,350	12,300	11,400	13,200	5.5
Engineers IV	114,365	1,225	1,216	1,117	1,320	14,695	14,592	13,404	15,840	5.8
Engineers V	78,391	1,417	1,412	1,275	1,540	17,004	16,944	15,300	18,480	5.6
Engineers VI	41,259	1,623	1,621	1,465	1,760	19,471	19,452	17,580	21,120	4.8
Engineers VII	15,460	1,861	1,850	1,674	2,020	22,328	22,200	20,088	24,240	5.3
Engineers VIII	3,884	2,116	2,068	1,851	2,300	25,393	24,816	22,212	27,600	5.7
<b>Technical support</b>										
Engineering technicians I	4,685	525	525	469	576	6,298	6,300	5,628	6,912	6.0
Engineering technicians II	14,546	627	619	570	678	7,520	7,428	6,840	8,136	7.3
Engineering technicians III	26,998	712	706	650	769	8,541	8,472	7,800	9,228	6.2
Engineering technicians IV	31,478	820	815	747	883	9,837	9,780	8,964	10,596	5.8
Engineering technicians V	16,621	920	915	846	991	11,043	10,980	10,152	11,892	7.0

See footnotes at end of table.

Table 1. Average salaries: United States—Continued

(Employment and average salaries for selected professional, administrative, technical, and clerical occupations in private industry,<sup>1</sup> United States except Alaska and Hawaii, June 1970, and percent increase in mean salaries during the year<sup>2</sup>)

Occupation and class (See definitions in appendix C)	Number of employees <sup>3</sup>	Monthly salaries <sup>4</sup>				Annual salaries <sup>4</sup>				Percent increase in mean salaries <sup>2</sup>
		Mean	Median	Middle range <sup>5</sup>		Mean	Median	Middle range <sup>5</sup>		
				First quartile	Third quartile			First quartile	Third quartile	
<b>Technical support—Continued</b>										
Draftsmen-tracers	4,992	\$473	\$458	\$407	\$525	\$5,675	\$5,501	\$4,883	\$6,299	7.1
Draftsmen I	19,932	567	560	491	626	6,805	6,719	5,892	7,510	5.4
Draftsmen II	32,752	697	688	624	765	8,364	8,254	7,486	9,177	4.7
Draftsmen III	28,343	850	833	756	916	10,204	9,990	9,072	10,993	4.6
<b>Clerical supervisory</b>										
Keypunch supervisors I	1,190	574	570	500	650	6,883	6,840	6,000	7,800	(6)
Keypunch supervisors II	1,444	647	625	563	735	7,763	7,500	6,756	8,820	(6)
Keypunch supervisors III	889	691	666	595	769	8,297	7,992	7,140	9,228	(6)
Keypunch supervisors IV	281	824	815	726	917	9,894	9,780	8,712	11,004	(6)
<b>Clerical</b>										
Clerks, accounting I	87,609	439	424	374	489	5,268	5,087	4,484	5,866	6.6
Clerks, accounting II	60,169	568	554	485	641	6,815	6,648	5,826	7,691	5.7
Clerks, file I	31,145	343	331	305	369	4,119	3,968	3,659	4,432	6.1
Clerks, file II	29,941	381	369	330	413	4,571	4,432	3,963	4,953	5.6
Clerks, file III	8,772	459	446	388	517	5,508	5,347	4,659	6,207	3.5
Keypunch operators I	64,645	426	412	366	469	5,114	4,945	4,391	5,631	6.6
Keypunch operators II	49,024	485	478	430	534	5,820	5,735	5,159	6,403	6.2
Office boys or girls	28,845	379	369	332	411	4,548	4,432	3,983	4,934	6.3
Secretaries I	90,862	522	520	460	579	6,259	6,239	5,524	6,943	6.6
Secretaries II	90,995	582	578	513	652	6,979	6,935	6,153	7,821	6.0
Secretaries III	51,723	625	623	543	700	7,506	7,471	6,518	8,398	6.7
Secretaries IV	15,991	679	675	582	766	8,147	8,098	6,987	9,188	5.8
Stenographers, general	68,301	456	448	394	513	5,478	5,370	4,727	6,155	5.5
Stenographers, senior	58,912	521	515	455	587	6,247	6,179	5,459	7,039	6.2
Switchboard operators I	14,146	426	417	359	486	5,109	5,005	4,311	5,830	6.0
Switchboard operators II	11,641	501	497	435	556	6,010	5,965	5,219	6,674	5.6
Tabulating-machine operators I	3,515	461	445	400	504	5,531	5,339	4,799	6,048	10.2
Tabulating-machine operators II	7,950	538	529	474	600	6,462	6,351	5,683	7,195	6.6
Tabulating-machine operators III	4,328	651	639	576	704	7,813	7,665	6,911	8,447	6.0
Typists I	83,788	393	385	348	428	4,717	4,614	4,171	5,140	6.0
Typists II	45,156	456	445	400	499	5,471	5,339	4,799	5,987	6.1

<sup>1</sup> For scope of study, see table in appendix A.

<sup>2</sup> For limitations of percent increase in average salaries as a measure of change in salary scales, see p. 5 of text.

<sup>3</sup> Occupational employment estimates relate to the total in all establishments within scope of the survey and not to the number actually surveyed. For further explanation, see p. 35.

<sup>4</sup> Salaries reported relate to the standard salaries that were paid for standard work schedules; i.e., the straight-time salary corresponding to the employee's normal work schedule excluding overtime hours. Nonproduction bonuses are excluded, but cost-of-living payments and incentive earnings are included.

<sup>5</sup> The middle range (interquartile) used here is the central part of the array excluding the upper and lower fourths of the employee distribution.

<sup>6</sup> Not surveyed in 1969.

**Table 2. Average salaries: Metropolitan areas**

(Employment and average salaries for selected professional, administrative, technical, and clerical occupations in private industry, metropolitan areas, 1 June 1970)

Occupation and class (See definitions in appendix C)	Number of employees <sup>2</sup>	Monthly salaries <sup>3</sup>				Annual salaries <sup>3</sup>			
		Mean	Median	Middle range <sup>4</sup>		Mean	Median	Middle range <sup>4</sup>	
				First quartile	Third quartile			First quartile	Third quartile
<b>Accountants and auditors</b>									
Accountants I	4,189	\$712	\$715	\$652	\$769	\$8,547	\$8,580	\$7,824	\$9,228
Accountants II	9,232	805	805	735	880	9,665	9,660	8,820	10,560
Accountants III	21,446	893	877	800	977	10,722	10,524	9,600	11,724
Accountants IV	14,994	1,064	1,051	956	1,166	12,763	12,612	11,472	13,992
Accountants V	5,447	1,291	1,267	1,166	1,400	15,487	15,204	13,992	16,800
Auditors I	782	747	730	675	824	8,962	8,760	8,100	9,888
Auditors II	1,702	834	800	737	925	10,002	9,600	8,844	11,100
Auditors III	4,004	955	937	850	1,041	11,463	11,244	10,200	12,492
Auditors IV	2,067	1,173	1,166	1,058	1,274	14,074	13,992	12,696	15,288
Chief accountants I	477	1,181	1,166	1,000	1,308	14,167	13,992	12,000	15,696
Chief accountants II	968	1,307	1,312	1,104	1,425	15,681	15,744	13,248	17,100
Chief accountants III	626	1,569	1,537	1,412	1,667	18,829	18,444	16,944	20,004
Chief accountants IV	258	1,925	1,933	1,658	2,137	23,106	23,196	19,896	25,644
<b>Attorneys</b>									
Attorneys I	600	988	1,004	850	1,083	11,859	12,048	10,200	12,996
Attorneys II	1,189	1,132	1,110	978	1,256	13,582	13,320	11,736	15,072
Attorneys III	1,665	1,413	1,412	1,250	1,541	16,958	16,944	15,000	18,492
Attorneys IV	1,617	1,692	1,666	1,456	1,875	20,307	19,992	17,472	22,500
Attorneys V	746	2,119	2,084	1,845	2,335	25,433	25,008	22,140	28,020
Attorneys VI	453	2,754	2,699	2,406	3,082	33,043	32,388	28,872	36,984
<b>Buyers</b>									
Buyers I	2,136	717	701	650	784	8,599	8,412	7,800	9,408
Buyers II	7,924	827	816	740	902	9,920	9,792	8,880	10,824
Buyers III	10,814	975	960	875	1,072	11,702	11,520	10,500	12,864
Buyers IV	4,491	1,161	1,139	1,025	1,276	13,926	13,668	12,300	15,312
<b>Personnel management</b>									
Job analysts I	123	745	736	666	835	8,938	8,832	7,992	10,020
Job analysts II	358	799	804	731	862	9,583	9,648	8,772	10,344
Job analysts III	525	939	935	839	1,036	11,269	11,220	10,068	12,432
Job analysts IV	574	1,081	1,083	983	1,182	12,966	12,996	11,796	14,184
Directors of personnel I	690	1,075	1,083	948	1,160	12,899	12,996	11,376	13,920
Directors of personnel II	1,517	1,242	1,200	1,096	1,360	14,902	14,400	13,152	16,320
Directors of personnel III	803	1,545	1,499	1,355	1,673	18,534	17,988	16,260	20,076
Directors of personnel IV	313	1,819	1,833	1,550	2,013	21,833	21,996	18,600	24,156
<b>Chemists and engineers</b>									
Chemists I	1,374	763	766	688	825	9,151	9,192	8,256	9,900
Chemists II	4,438	856	854	790	911	10,273	10,248	9,480	10,932
Chemists III	7,667	985	975	886	1,075	11,822	11,700	10,632	12,900
Chemists IV	9,299	1,191	1,183	1,061	1,315	14,295	14,196	12,732	15,780
Chemists V	6,277	1,428	1,416	1,280	1,566	17,141	16,992	15,360	18,792
Chemists VI	3,688	1,648	1,624	1,480	1,820	19,771	19,488	17,760	21,640
Chemists VII	1,462	1,927	1,863	1,681	2,083	23,128	22,356	20,172	24,996
Chemists VIII	443	2,325	2,250	2,041	2,600	27,903	27,000	24,492	31,200
Engineers I	12,122	851	850	808	900	10,218	10,200	9,696	10,800
Engineers II	29,215	926	919	866	978	11,110	11,028	10,392	11,736
Engineers III	76,354	1,035	1,032	958	1,105	12,420	12,384	11,496	13,260
Engineers IV	100,930	1,233	1,225	1,128	1,326	14,795	14,700	13,536	15,912
Engineers V	70,297	1,426	1,417	1,286	1,549	17,111	17,004	15,432	18,588
Engineers VI	36,580	1,628	1,625	1,475	1,763	19,534	19,500	17,700	21,156
Engineers VII	14,062	1,863	1,853	1,683	2,020	22,351	22,236	20,196	24,240
Engineers VIII	3,484	2,128	2,083	1,868	2,307	25,530	24,996	22,416	27,684
<b>Technical support</b>									
Engineering technicians I	3,889	531	530	476	580	6,366	6,360	5,712	6,960
Engineering technicians II	11,635	631	621	575	682	7,572	7,452	6,900	8,184
Engineering technicians III	22,524	714	710	652	772	8,571	8,520	7,824	9,264
Engineering technicians IV	27,620	825	819	750	890	9,897	9,828	9,000	10,680
Engineering technicians V	14,687	921	915	845	992	11,053	10,980	10,140	11,904

See footnotes at end of table.

Table 2. Average salaries: Metropolitan areas—Continued

(Employment and average salaries for selected professional, administrative, technical, and clerical occupations in private industry, metropolitan areas, 1 June 1970).

Occupation and class (See definitions in appendix C)	Number of employees <sup>2</sup>	Monthly salaries <sup>3</sup>				Annual salaries <sup>3</sup>			
		Mean	Median	Middle range <sup>4</sup>		Mean	Median	Middle range <sup>4</sup>	
				First quartile	Third quartile			First quartile	Third quartile
<b>Technical support—Continued</b>									
Draftsmen-tracers .....	4,272	\$472	\$453	\$401	\$526	\$5,659	\$5,431	\$4,818	\$6,317
Draftsmen I .....	16,696	570	563	498	630	6,838	6,755	5,970	7,558
Draftsmen II .....	26,850	704	695	630	769	8,449	8,342	7,560	9,229
Draftsmen III .....	24,956	858	840	763	930	10,298	10,078	9,156	11,157
<b>Clerical supervisory</b>									
Keypunch supervisors I .....	1,024	582	576	500	652	6,988	6,912	6,000	7,824
Keypunch supervisors II .....	1,318	650	626	574	729	7,795	7,512	6,888	8,748
Keypunch supervisors III .....	765	700	678	606	785	8,402	8,136	7,272	9,420
Keypunch supervisors IV .....	255	822	815	734	891	9,863	9,780	8,808	10,692
<b>Clerical</b>									
Clerks, accounting I .....	74,081	445	430	375	497	5,335	5,162	4,503	5,965
Clerks, accounting II .....	51,318	572	559	493	645	6,869	6,707	5,920	7,738
Clerks, file I .....	26,121	346	335	309	373	4,152	4,019	3,707	4,472
Clerks, file II .....	26,285	384	369	335	415	4,606	4,432	4,015	4,979
Clerks, file III .....	7,925	461	449	388	521	5,537	5,394	4,659	6,257
Keypunch operators I .....	55,320	434	417	374	478	5,212	5,005	4,484	5,735
Keypunch operators II .....	42,523	491	483	435	541	5,897	5,795	5,214	6,486
Office boys or girls .....	26,605	380	369	335	412	4,554	4,432	4,015	4,943
Secretaries I .....	81,083	527	521	469	584	6,323	6,257	5,625	7,008
Secretaries II .....	82,097	586	583	520	653	7,035	6,994	6,239	7,842
Secretaries III .....	46,713	633	630	552	704	7,601	7,558	6,622	8,447
Secretaries IV .....	14,392	691	691	595	775	8,294	8,290	7,138	9,298
Stenographers, general .....	59,355	461	450	400	518	5,526	5,406	4,797	6,219
Stenographers, senior .....	51,359	526	521	461	590	6,315	6,257	5,527	7,079
Switchboard operators I .....	12,715	430	424	369	491	5,162	5,084	4,425	5,892
Switchboard operators II .....	10,597	505	500	443	558	6,056	5,996	5,318	6,702
Tabulating-machine operators I .....	3,137	463	445	402	505	5,563	5,339	4,823	6,063
Tabulating-machine operators II .....	7,363	540	530	474	600	6,476	6,358	5,684	7,198
Tabulating-machine operators III .....	3,917	654	637	576	715	7,848	7,649	6,911	8,578
Typists I .....	72,917	396	388	350	433	4,754	4,659	4,199	5,195
Typists II .....	41,490	457	446	402	500	5,488	5,351	4,823	5,996

<sup>1</sup> For scope of study, see table in appendix A.

<sup>2</sup> Occupational employment estimates relate to the total in all establishments within scope of the survey and not to the number actually surveyed. For further explanation, see p. 35.

<sup>3</sup> Salaries reported relate to the standard salaries that were paid for standard work schedules; i. e., the straight-time salary corresponding to the employee's normal work schedule excluding overtime hours. Nonproduction bonuses are excluded, but cost-of-living payments and incentive earnings are included.

<sup>4</sup> The middle range (interquartile) used here is the central part of the array excluding the upper and lower fourths of the employee distribution.

Table 3. Average salaries: Establishments employing 2,500 or more

(Employment and average monthly salaries for selected professional, administrative, technical, and clerical occupations in private industry<sup>1</sup> in establishments employing 2,500 workers or more,<sup>2</sup> United States except Alaska and Hawaii, June 1970, percent increase in mean salaries during the year,<sup>3</sup> and comparison with levels in all establishments combined)

Occupation and class (See definitions in appendix C)	Number of employees <sup>4</sup>	Monthly salaries <sup>5</sup>				Percent increase in mean salaries <sup>3</sup>	Levels in large establishments expressed as percent of those in all establishments combined	
		Mean	Median	Middle range <sup>6</sup>			Employment	Mean salaries
				First quartile	Third quartile			
<b>Accountants and auditors</b>								
Accountants I	1,901	\$ 751	\$ 750	\$ 700	\$ 805	7.5	40	106
Accountants II	5,494	837	835	775	912	6.9	53	104
Accountants III	7,948	935	931	843	1,027	6.2	31	105
Accountants IV	5,073	1,099	1,097	991	1,198	6.1	29	103
Accountants V	2,579	1,307	1,290	1,183	1,434	7.4	41	101
Auditors I	388	786	775	700	880	2.7	48	106
Auditors II	822	877	850	766	990	5.6	45	106
Auditors III	1,579	991	975	864	1,100	7.7	37	104
Auditors IV	1,014	1,174	1,175	1,063	1,275	6.7	45	100
Chief accountants III	182	1,717	1,707	1,526	1,880	7.1	26	110
Chief accountants IV	115	2,004	1,999	1,673	2,208	11.7	40	104
<b>Attorneys</b>								
Attorneys I	143	1,132	1,155	1,000	1,250	11.9	23	115
Attorneys II	356	1,277	1,258	1,125	1,416	8.1	29	113
Attorneys III	522	1,553	1,542	1,333	1,700	8.7	29	110
Attorneys IV	517	1,820	1,780	1,600	2,000	9.8	31	108
Attorneys V	337	2,165	2,132	1,846	2,457	5.7	42	102
Attorneys VI	240	2,726	2,667	2,395	2,999	8.0	52	99
<b>Buyers</b>								
Buyers I	757	787	782	713	850	9.0	30	111
Buyers II	2,673	867	853	769	941	6.8	26	107
Buyers III	5,149	1,005	997	899	1,116	7.6	39	103
Buyers IV	2,918	1,151	1,125	1,017	1,254	5.8	59	99
<b>Personnel management</b>								
Job analysts II	206	815	810	735	890	6.0	56	102
Job analysts III	361	946	935	850	1,026	7.4	59	102
Job analysts IV	470	1,106	1,112	1,004	1,200	2.7	75	102
Directors of personnel III	210	1,783	1,740	1,486	2,095	9.8	20	116
Directors of personnel IV	130	2,014	1,934	1,792	2,227	6.9	32	110
<b>Chemists and engineers</b>								
Chemists I	364	827	826	773	875	6.4	23	108
Chemists II	1,829	894	890	824	995	5.8	35	105
Chemists III	3,100	1,043	1,041	940	1,134	6.8	34	107
Chemists IV	3,972	1,243	1,245	1,111	1,373	6.4	36	105
Chemists V	2,781	1,480	1,474	1,333	1,625	6.3	38	104
Chemists VI	1,733	1,679	1,650	1,500	1,830	6.3	41	102
Chemists VII	712	1,984	1,925	1,741	2,164	6.9	42	104
Chemists VIII	251	2,380	2,313	2,085	2,616	5.8	52	103
Engineers I	7,320	859	865	816	905	5.8	56	101
Engineers II	19,072	933	925	875	981	6.5	59	101
Engineers III	49,869	1,048	1,043	975	1,117	5.6	58	102
Engineers IV	69,542	1,255	1,247	1,158	1,345	6.0	61	102
Engineers V	45,553	1,456	1,450	1,325	1,575	6.1	58	103
Engineers VI	22,969	1,678	1,670	1,540	1,800	5.4	56	103
Engineers VII	8,547	1,934	1,912	1,766	2,083	6.1	55	104
Engineers VIII	2,097	2,200	2,137	1,968	2,360	6.0	54	104
<b>Technical support</b>								
Engineering technicians I	2,291	540	534	490	594	3.7	49	103
Engineering technicians II	7,275	643	633	584	695	7.2	50	103
Engineering technicians III	13,485	721	713	660	777	4.8	50	101
Engineering technicians IV	18,186	833	826	756	895	5.8	58	102
Engineering technicians V	10,988	930	925	857	1,002	6.8	66	101

See footnotes at end of table.



Table 3. Average salaries: Establishments employing 2,500 or more—Continued

(Employment and average monthly salaries for selected professional, administrative, technical, and clerical occupations in private industry<sup>1</sup> in establishments employing 2,500 workers or more, <sup>2</sup> United States except Alaska and Hawaii, June 1970, percent increase in mean salaries during the year, <sup>3</sup> and comparison with levels in all establishments combined)

Occupation and class (See definitions in appendix C)	Number of employees <sup>4</sup>	Monthly salaries <sup>5</sup>				Percent increase in mean salaries <sup>3</sup>	Levels in large establishments expressed as percent of those in all establishments combined	
		Mean	Median	Middle range <sup>6</sup>			Employment	Mean salaries
				First quartile	Third quartile			
<b>Technical support—Continued</b>								
Draftsmen-tracers .....	2,129	\$496	\$480	\$419	\$571	4.5	43	105
Draftsmen I .....	6,264	606	600	539	665	6.9	31	107
Draftsmen II .....	11,198	727	714	650	795	5.2	34	104
Draftsmen III .....	12,002	905	878	791	1,003	7.1	42	106
<b>Clerical supervisory</b>								
Keypunch supervisors II .....	289	700	675	616	791	(?)	20	108
Keypunch supervisors III .....	232	742	739	652	838	(?)	26	107
Keypunch supervisors IV .....	127	850	855	726	948	(?)	45	103
<b>Clerical</b>								
Clerks, accounting I .....	16,698	480	470	400	546	4.8	19	110
Clerks, accounting II .....	14,128	617	610	526	699	5.0	23	109
Clerks, file I .....	5,070	381	373	339	412	5.7	16	111
Clerks, file II .....	5,051	427	413	371	478	6.5	20	112
Clerks, file III .....	2,606	505	500	430	575	2.5	30	110
Keypunch operators I .....	16,527	470	455	395	542	6.9	26	110
Keypunch operators II .....	14,492	524	520	461	586	6.7	30	108
Office boys or girls .....	7,252	404	384	354	439	6.3	25	107
Secretaries I .....	24,849	550	544	495	603	6.1	27	105
Secretaries II .....	34,653	626	625	561	685	6.5	38	108
Secretaries III .....	13,663	702	691	625	773	6.5	26	112
Secretaries IV .....	3,880	762	742	687	826	6.7	24	112
Stenographers, general .....	21,614	491	486	430	554	5.8	32	108
Stenographers, senior .....	21,671	556	555	495	624	6.5	37	107
Switchboard operators I .....	3,034	453	442	391	515	6.2	21	106
Switchboard operators II .....	3,541	536	539	470	602	6.1	30	107
Tabulating-machine operators I .....	1,612	487	474	417	556	5.6	46	106
Tabulating-machine operators II .....	3,532	553	546	482	617	6.4	44	103
Tabulating-machine operators III .....	1,781	690	663	602	765	7.4	41	106
Typists I .....	18,338	428	413	380	464	6.0	22	109
Typists II .....	16,521	476	460	415	527	6.0	37	104

<sup>1</sup> For scope of study, see table in appendix A.

<sup>2</sup> Includes data for a few establishments with less than 2,500 employees of 6 large companies studied that provided companywide data unidentified by size of establishment. This applies only to data for occupations other than drafting and clerical.

<sup>3</sup> For limitations of percent increase in average salaries as a measure of change in salary scales, see p. 5.

<sup>4</sup> Occupational employment estimates relate to the total in all establishments within scope of the survey and not to the number actually surveyed. For further explanation, see p. 35.

<sup>5</sup> Salaries reported relate to the standard salaries that were paid for standard work schedules; i.e., the straight-time salary corresponding to the employee's normal work schedule excluding overtime hours. Nonproduction bonuses are excluded, but cost-of-living payments and incentive earnings are included.

<sup>6</sup> The middle range (interquartile) used here is the central part of the array excluding the upper and lower fourths of the employee distribution.

<sup>7</sup> Not surveyed in 1969.

**Table 4. Employment distribution by salary: Professional and administrative occupations**

(Percent distribution of employees in selected professional and administrative occupations, by average monthly salaries, United States except Alaska and Hawaii, June 1970)

Average monthly salaries	Accountants					Auditors				Chief accountants			
	I	II	III	IV	V	I	II	III	IV	I	II	III	IV
\$425 and under \$450	-	-	-	-	-	1.6	-	-	-	-	-	-	-
\$450 and under \$475	-	-	-	-	-	-	-	-	-	-	-	-	-
\$475 and under \$500	-	-	-	-	-	-	-	-	-	-	-	-	-
\$500 and under \$525	(0.9)	-	-	-	-	.1	-	-	-	-	-	-	-
\$525 and under \$550	1.6	-	-	-	-	4.6	-	-	-	-	-	-	-
\$550 and under \$575	4.8	-	-	-	-	.1	-	-	-	-	-	-	-
\$575 and under \$600	2.0	(1.1)	-	-	-	2.4	(0.1)	-	-	-	-	-	-
\$600 and under \$625	5.5	1.8	-	-	-	2.5	2.3	-	-	-	-	-	-
\$625 and under \$650	6.7	2.0	(0.9)	-	-	3.7	3.8	-	-	-	-	-	-
\$650 and under \$675	12.7	5.9	1.1	-	-	10.1	2.9	-	-	-	-	-	-
\$675 and under \$700	7.6	4.5	1.5	-	-	8.0	4.5	(2.5)	-	-	-	-	-
\$700 and under \$725	13.6	7.9	3.2	-	-	12.4	8.1	1.3	-	-	-	-	-
\$725 and under \$750	10.7	6.3	3.8	-	-	7.0	7.5	2.0	-	-	-	-	-
\$750 and under \$775	11.3	10.0	6.3	-	-	12.7	8.4	1.5	-	-	-	-	-
\$775 and under \$800	7.7	9.8	6.5	(1.8)	-	6.0	11.2	3.2	-	-	-	-	-
\$800 and under \$825	6.1	9.2	9.0	1.5	-	4.5	6.5	4.7	-	3.0	-	-	-
\$825 and under \$850	4.0	9.4	7.7	2.8	-	5.5	7.2	7.7	(1.3)	-	-	-	-
\$850 and under \$875	2.3	7.3	8.5	3.7	-	4.5	4.8	7.8	1.6	-	-	-	-
\$875 and under \$900	(2.4)	5.8	7.5	2.8	-	4.6	3.1	6.8	1.1	-	0.5	-	-
\$900 and under \$925	-	10.9	7.8	5.4	-	5.7	5.4	6.9	3.5	1.7	3.0	-	-
\$925 and under \$950	-	2.4	5.4	4.6	(2.1)	1.0	2.8	7.7	1.3	-	-	-	-
\$950 and under \$975	-	2.3	6.1	5.9	1.3	.9	5.8	6.3	3.3	12.5	3.0	-	-
\$975 and under \$1,000	-	1.0	4.5	5.8	1.1	.7	3.4	6.0	2.5	1.0	-	-	-
\$1,000 and under \$1,050	-	1.2	9.1	14.6	4.1	1.1	3.5	11.9	10.5	11.7	5.8	-	-
\$1,050 and under \$1,100	-	(1.0)	5.9	11.9	6.4	(.4)	5.7	7.1	6.0	2.5	5.9	-	-
\$1,100 and under \$1,150	-	-	2.7	11.1	9.1	-	2.2	5.7	11.2	13.5	8.6	(1.3)	-
\$1,150 and under \$1,200	-	-	1.2	9.2	8.5	-	(.9)	3.7	14.0	19.5	3.7	1.8	-
\$1,200 and under \$1,250	-	-	(1.4)	7.0	11.6	-	-	2.5	12.6	4.5	4.0	1.1	-
\$1,250 and under \$1,300	-	-	-	5.2	10.8	-	-	2.3	11.0	8.0	10.2	3.3	-
\$1,300 and under \$1,350	-	-	-	3.2	8.6	-	-	.9	7.6	8.3	18.4	6.8	-
\$1,350 and under \$1,400	-	-	-	1.5	10.5	-	-	1.0	4.3	4.5	9.0	11.1	(1.7)
\$1,400 and under \$1,450	-	-	-	(2.0)	6.5	-	-	(.3)	2.8	4.5	7.4	6.4	2.8
\$1,450 and under \$1,500	-	-	-	-	5.3	-	-	-	2.5	.8	1.6	12.8	4.2
\$1,500 and under \$1,550	-	-	-	-	4.3	-	-	-	1.4	2.7	5.3	6.8	3.8
\$1,550 and under \$1,600	-	-	-	-	3.2	-	-	-	(1.5)	-	2.1	12.5	4.5
\$1,600 and under \$1,650	-	-	-	-	3.4	-	-	-	-	-	2.7	8.4	5.2
\$1,650 and under \$1,700	-	-	-	-	1.1	-	-	-	-	-	4.9	6.4	4.9
\$1,700 and under \$1,750	-	-	-	-	(2.3)	-	-	-	-	-	1.3	2.3	4.2
\$1,750 and under \$1,800	-	-	-	-	-	-	-	-	-	-	.3	1.3	4.2
\$1,800 and under \$1,850	-	-	-	-	-	-	-	-	-	-	1.4	4.6	4.9
\$1,850 and under \$1,900	-	-	-	-	-	-	-	-	-	-	(.7)	3.6	3.8
\$1,900 and under \$1,950	-	-	-	-	-	-	-	-	-	-	-	1.0	5.9
\$1,950 and under \$2,000	-	-	-	-	-	-	-	-	-	-	-	2.7	19.5
\$2,000 and under \$2,050	-	-	-	-	-	-	-	-	-	-	-	.3	2.1
\$2,050 and under \$2,100	-	-	-	-	-	-	-	-	-	-	-	2.1	2.4
\$2,100 and under \$2,150	-	-	-	-	-	-	-	-	-	-	-	.6	4.5
\$2,150 and under \$2,200	-	-	-	-	-	-	-	-	-	-	-	1.8	5.2
\$2,200 and under \$2,250	-	-	-	-	-	-	-	-	-	-	-	(1.0)	2.4
\$2,250 and under \$2,300	-	-	-	-	-	-	-	-	-	-	-	-	3.5
\$2,300 and under \$2,350	-	-	-	-	-	-	-	-	-	-	-	-	1.0
\$2,350 and under \$2,400	-	-	-	-	-	-	-	-	-	-	-	-	.3
\$2,400 and under \$2,450	-	-	-	-	-	-	-	-	-	-	-	-	.7
\$2,450 and under \$2,500	-	-	-	-	-	-	-	-	-	-	-	-	.7
\$2,500 and under \$2,550	-	-	-	-	-	-	-	-	-	-	-	-	1.0
\$2,550 and under \$2,600	-	-	-	-	-	-	-	-	-	-	-	-	1.0
\$2,600 and under \$2,650	-	-	-	-	-	-	-	-	-	-	-	-	2.1
\$2,650 and under \$2,700	-	-	-	-	-	-	-	-	-	-	-	-	1.0
\$2,700 and under \$2,750	-	-	-	-	-	-	-	-	-	-	-	-	1.0
\$2,750 and over	-	-	-	-	-	-	-	-	-	-	-	-	1.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of employees	4,795	10,414	25,777	17,559	6,331	8,004	1,842	4,323	2,243	599	1,260	703	287
Average monthly salaries	\$709	\$801	\$891	\$1,063	\$1,290	\$741	\$830	\$956	\$1,170	\$1,160	\$1,304	\$1,565	\$1,928

See footnote at end of table.

Table 4. Employment distribution by salary: Professional and administrative occupations—Continued

(Percent distribution of employees in selected professional and administrative occupations, by average monthly salaries, United States except Alaska and Hawaii, 1 June 1970)

Average monthly salaries	Attorneys						Buyers			
	I	II	III	IV	V	VI	I	II	III	IV
\$475 and under \$500	-	-	-	-	-	-	1.0	-	-	-
\$500 and under \$525	-	-	-	-	-	-	2.0	-	-	-
\$525 and under \$550	-	-	-	-	-	-	2.9	-	-	-
\$550 and under \$575	-	-	-	-	-	-	1.2	(1.7)	-	-
\$575 and under \$600	-	-	-	-	-	-	5.2	1.4	-	-
\$600 and under \$625	-	-	-	-	-	-	9.7	2.7	-	-
\$625 and under \$650	-	-	-	-	-	-	4.9	3.1	-	-
\$650 and under \$675	-	-	-	-	-	-	14.5	4.7	-	-
\$675 and under \$700	5.8	-	-	-	-	-	8.7	4.8	(1.9)	-
\$700 and under \$725	.5	-	-	-	-	-	10.3	6.6	2.0	-
\$725 and under \$750	5.7	-	-	-	-	-	6.8	6.1	1.3	-
\$750 and under \$775	7.7	1.0	-	-	-	-	7.4	9.7	2.3	-
\$775 and under \$800	-	.2	-	-	-	-	6.8	7.9	2.0	-
\$800 and under \$825	1.1	1.4	-	-	-	-	5.0	6.9	4.4	(1.8)
\$825 and under \$850	1.1	1.0	-	-	-	-	3.9	8.9	4.7	1.0
\$850 and under \$875	5.8	1.4	-	-	-	-	1.7	7.1	6.7	.9
\$875 and under \$900	3.0	2.0	-	-	-	-	1.4	4.5	6.3	1.2
\$900 and under \$925	3.2	8.7	0.1	-	-	-	1.9	6.0	8.4	2.5
\$925 and under \$950	2.2	1.6	1.8	-	-	-	.8	3.7	7.1	3.0
\$950 and under \$975	9.0	4.6	.2	-	-	-	1.4	2.6	0.4	3.9
\$975 and under \$1,000	3.3	6.7	2.5	-	-	-	(2.5)	2.6	5.9	4.6
\$1,000 and under \$1,050	20.3	13.7	1.7	-	-	-	-	4.0	11.7	11.2
\$1,050 and under \$1,100	8.4	6.3	3.0	-	-	-	-	1.9	9.4	10.7
\$1,100 and under \$1,150	6.2	8.2	2.7	0.6	-	-	-	1.1	6.8	11.6
\$1,150 and under \$1,200	4.7	5.2	7.3	1.4	-	-	-	(2.0)	5.5	9.4
\$1,200 and under \$1,250	2.1	9.9	3.3	.2	-	-	-	-	3.7	9.5
\$1,250 and under \$1,300	5.5	9.1	11.0	5.6	-	-	-	-	1.4	8.1
\$1,300 and under \$1,350	.5	5.9	6.6	3.5	-	-	-	-	1.3	6.3
\$1,350 and under \$1,400	.8	3.0	8.1	3.1	-	-	-	-	(.8)	4.1
\$1,400 and under \$1,450	1.3	3.4	12.1	10.4	-	-	-	-	-	3.9
\$1,450 and under \$1,500	1.1	2.2	10.2	6.4	(1.4)	-	-	-	-	1.9
\$1,500 and under \$1,550	(.8)	1.0	6.9	8.3	1.6	-	-	-	-	1.5
\$1,550 and under \$1,600	-	1.0	3.7	5.9	2.9	-	-	-	-	.5
\$1,600 and under \$1,650	-	(2.3)	2.8	3.8	1.3	-	-	-	-	.7
\$1,650 and under \$1,700	-	-	5.0	8.3	4.8	-	-	-	-	1.0
\$1,700 and under \$1,750	-	-	2.3	4.7	5.5	-	-	-	-	(.8)
\$1,750 and under \$1,800	-	-	2.3	4.3	3.4	(0.7)	-	-	-	-
\$1,800 and under \$1,850	-	-	1.9	5.1	4.7	1.1	-	-	-	-
\$1,850 and under \$1,900	-	-	.6	4.4	4.2	.7	-	-	-	-
\$1,900 and under \$1,950	-	-	1.0	2.7	3.5	2.0	-	-	-	-
\$1,950 and under \$2,000	-	-	(3.0)	3.3	6.8	2.6	-	-	-	-
\$2,000 and under \$2,050	-	-	-	3.3	3.4	.4	-	-	-	-
\$2,050 and under \$2,100	-	-	-	3.7	8.6	1.5	-	-	-	-
\$2,100 and under \$2,150	-	-	-	1.0	4.9	1.5	-	-	-	-
\$2,150 and under \$2,200	-	-	-	3.0	4.0	2.6	-	-	-	-
\$2,200 and under \$2,250	-	-	-	1.6	5.4	6.8	-	-	-	-
\$2,250 and under \$2,300	-	-	-	.5	7.1	2.4	-	-	-	-
\$2,300 and under \$2,350	-	-	-	1.3	3.2	.2	-	-	-	-
\$2,350 and under \$2,400	-	-	-	1.0	2.0	2.2	-	-	-	-
\$2,400 and under \$2,450	-	-	-	(2.6)	2.6	1.5	-	-	-	-
\$2,450 and under \$2,500	-	-	-	-	3.0	5.2	-	-	-	-
\$2,500 and under \$2,550	-	-	-	-	4.5	5.2	-	-	-	-
\$2,550 and under \$2,600	-	-	-	-	1.5	5.9	-	-	-	-
\$2,600 and under \$2,650	-	-	-	-	1.9	2.0	-	-	-	-
\$2,650 and under \$2,700	-	-	-	-	1.1	6.1	-	-	-	-
\$2,700 and under \$2,750	-	-	-	-	1.3	3.5	-	-	-	-
\$2,750 and under \$2,800	-	-	-	-	1.5	4.1	-	-	-	-
\$2,800 and under \$2,850	-	-	-	-	(3.8)	3.9	-	-	-	-
\$2,850 and under \$2,900	-	-	-	-	-	1.7	-	-	-	-
\$2,900 and under \$2,950	-	-	-	-	-	5.2	-	-	-	-
\$2,950 and under \$3,000	-	-	-	-	-	3.7	-	-	-	-
\$3,000 and under \$3,050	-	-	-	-	-	1.5	-	-	-	-
\$3,050 and under \$3,100	-	-	-	-	-	2.0	-	-	-	-
\$3,100 and under \$3,150	-	-	-	-	-	.7	-	-	-	-
\$3,150 and under \$3,200	-	-	-	-	-	1.5	-	-	-	-
\$3,200 and under \$3,250	-	-	-	-	-	1.5	-	-	-	-
\$3,250 and under \$3,300	-	-	-	-	-	.4	-	-	-	-
\$3,300 and under \$3,350	-	-	-	-	-	5.2	-	-	-	-
\$3,350 and under \$3,400	-	-	-	-	-	.9	-	-	-	-
\$3,400 and under \$3,450	-	-	-	-	-	.7	-	-	-	-
\$3,450 and under \$3,500	-	-	-	-	-	4.8	-	-	-	-
\$3,500 and under \$3,550	-	-	-	-	-	3.7	-	-	-	-
\$3,550 and over	-	-	-	-	-	4.1	-	-	-	-
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of employees	634	1,249	1,775	1,659	793	458	2,490	10,137	13,091	4,968
Average monthly salaries	\$988	\$1,132	\$1,407	\$1,692	\$2,116	\$2,753	\$709	\$813	\$972	\$1,158

See footnote at end of table.

Table 4. Employment distribution by salary: Professional and administrative occupations—Continued

(Percent distribution of employees in selected professional and administrative occupations, by average monthly salaries, United States except Alaska and Hawaii, June 1970)

Average monthly salaries	Job analysts				Directors of personnel			
	I	II	III	IV	I	II	III	IV
\$500 and under \$525	0.8	-	-	-	-	-	-	-
\$525 and under \$550	1.6	(1.1)	-	-	-	-	-	-
\$550 and under \$575	1.6	3.5	-	-	-	-	-	-
\$575 and under \$600	6.5	1.1	-	-	-	-	-	-
\$600 and under \$625	5.7	1.1	-	-	-	-	-	-
\$625 and under \$650	4.1	4.6	-	-	-	-	-	-
\$650 and under \$675	8.1	3.5	(1.6)	-	-	-	-	-
\$675 and under \$700	4.9	5.7	2.3	1.0	-	-	-	-
\$700 and under \$725	8.9	4.1	2.0	.2	-	-	-	-
\$725 and under \$750	9.8	7.0	3.4	-	3.2	-	-	-
\$750 and under \$775	2.4	7.6	2.0	1.6	.6	-	-	-
\$775 and under \$800	9.8	8.1	4.1	1.6	1.0	-	-	-
\$800 and under \$825	9.8	9.5	5.1	.6	1.7	-	-	-
\$825 and under \$850	8.1	7.0	9.9	3.7	2.5	-	-	-
\$850 and under \$875	4.1	12.7	6.4	3.0	8.5	-	-	-
\$875 and under \$900	8.1	7.3	6.1	2.4	3.0	(1.3)	-	-
\$900 and under \$925	2.4	4.6	7.4	3.7	3.4	3.2	-	-
\$925 and under \$950	.8	2.4	6.6	2.2	8.9	.7	-	-
\$950 and under \$975	1.6	3.8	3.9	2.6	5.7	3.8	-	-
\$975 and under \$1,000	.8	.5	5.9	5.8	1.7	3.3	-	-
\$1,000 and under \$1,050	-	3.5	15.9	10.7	9.4	5.5	-	-
\$1,050 and under \$1,100	-	(1.4)	8.2	12.0	17.3	8.4	(0.8)	-
\$1,100 and under \$1,150	-	-	2.5	9.4	5.7	13.3	3.6	-
\$1,150 and under \$1,200	-	-	3.4	16.8	7.5	11.2	1.4	-
\$1,200 and under \$1,250	-	-	1.3	8.0	4.3	10.0	5.8	(1.7)
\$1,250 and under \$1,300	-	-	1.1	5.6	5.5	8.5	6.4	2.2
\$1,300 and under \$1,350	-	-	(.8)	4.6	5.1	5.6	5.5	2.4
\$1,350 and under \$1,400	-	-	-	2.1	2.3	5.6	14.4	3.4
\$1,400 and under \$1,450	-	-	-	1.0	1.4	4.8	7.3	3.4
\$1,450 and under \$1,500	-	-	-	1.1	(1.4)	2.2	7.1	5.1
\$1,500 and under \$1,550	-	-	-	(.5)	-	1.8	9.4	5.1
\$1,550 and under \$1,600	-	-	-	-	-	3.4	5.6	6.6
\$1,600 and under \$1,650	-	-	-	-	-	.4	4.3	4.2
\$1,650 and under \$1,700	-	-	-	-	-	1.6	8.7	3.9
\$1,700 and under \$1,750	-	-	-	-	-	1.4	2.6	4.4
\$1,750 and under \$1,800	-	-	-	-	-	.3	1.5	1.0
\$1,800 and under \$1,850	-	-	-	-	-	1.9	3.3	15.9
\$1,850 and under \$1,900	-	-	-	-	-	(1.9)	1.4	6.8
\$1,900 and under \$1,950	-	-	-	-	-	-	1.4	5.9
\$1,950 and under \$2,000	-	-	-	-	-	-	1.2	1.7
\$2,000 and under \$2,050	-	-	-	-	-	-	.8	4.6
\$2,050 and under \$2,100	-	-	-	-	-	-	2.1	3.2
\$2,100 and under \$2,150	-	-	-	-	-	-	.8	.7
\$2,150 and under \$2,200	-	-	-	-	-	-	.7	2.2
\$2,200 and under \$2,250	-	-	-	-	-	-	.3	2.9
\$2,250 and under \$2,300	-	-	-	-	-	-	2.9	2.2
\$2,300 and under \$2,350	-	-	-	-	-	-	(1.1)	3.4
\$2,350 and under \$2,400	-	-	-	-	-	-	-	1.7
\$2,400 and under \$2,450	-	-	-	-	-	-	-	.5
\$2,450 and under \$2,500	-	-	-	-	-	-	-	.2
\$2,500 and under \$2,550	-	-	-	-	-	-	-	1.0
\$2,550 and over	-	-	-	-	-	-	-	3.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of employees	123	370	609	626	1,057	1,963	1,035	409
Average monthly salaries	\$745	\$798	\$932	\$1,086	\$1,049	\$1,236	\$1,535	\$1,827

See footnote at end of table.

Table 4. Employment distribution by salary: Professional and administrative occupations—Continued

(Percent distribution of employees in selected professional and administrative occupations, by average monthly salaries, United States except Alaska and Hawaii, June 1970)

Average monthly salaries	Chemists							
	I	II	III	IV	V	VI	VII	VIII
Under \$550	2.2	-	-	-	-	-	-	-
\$550 and under \$575	1.0	-	-	-	-	-	-	-
\$575 and under \$600	.6	-	-	-	-	-	-	-
\$600 and under \$625	.6	-	-	-	-	-	-	-
\$625 and under \$650	6.0	(0.3)	-	-	-	-	-	-
\$650 and under \$675	9.6	1.9	-	-	-	-	-	-
\$675 and under \$700	4.9	1.5	-	-	-	-	-	-
\$700 and under \$725	6.8	4.6	(1.2)	-	-	-	-	-
\$725 and under \$750	7.9	3.1	1.5	-	-	-	-	-
\$750 and under \$775	15.0	10.0	2.7	-	-	-	-	-
\$775 and under \$800	10.4	8.0	2.6	-	-	-	-	-
\$800 and under \$825	9.2	9.7	2.8	-	-	-	-	-
\$825 and under \$850	7.4	8.9	5.3	-	-	-	-	-
\$850 and under \$875	5.9	10.9	4.9	(2.8)	-	-	-	-
\$875 and under \$900	4.4	11.0	7.9	1.0	-	-	-	-
\$900 and under \$925	4.5	8.5	7.1	1.4	-	-	-	-
\$925 and under \$950	1.7	6.6	7.0	2.7	-	-	-	-
\$950 and under \$975	(2.0)	4.5	9.0	3.4	-	-	-	-
\$975 and under \$1,000	-	3.5	7.6	2.7	(0.8)	-	-	-
\$1,000 and under \$1,050	-	4.1	12.8	9.5	1.5	-	-	-
\$1,050 and under \$1,100	-	1.9	9.4	10.2	2.6	-	-	-
\$1,100 and under \$1,150	-	(1.1)	6.5	10.5	3.0	-	-	-
\$1,150 and under \$1,200	-	-	5.1	10.7	4.4	(1.8)	-	-
\$1,200 and under \$1,250	-	-	3.2	10.8	6.2	1.8	-	-
\$1,250 and under \$1,300	-	-	1.7	7.9	10.3	2.5	-	-
\$1,300 and under \$1,350	-	-	(1.7)	7.1	9.9	4.0	-	-
\$1,350 and under \$1,400	-	-	-	6.2	9.7	4.7	-	-
\$1,400 and under \$1,450	-	-	-	5.0	8.4	5.7	(1.6)	-
\$1,450 and under \$1,500	-	-	-	3.3	9.5	8.8	4.9	-
\$1,500 and under \$1,550	-	-	-	2.3	7.7	7.3	2.9	-
\$1,550 and under \$1,600	-	-	-	1.4	7.0	9.0	3.3	1.0
\$1,600 and under \$1,650	-	-	-	(1.3)	5.0	8.4	4.9	-
\$1,650 and under \$1,700	-	-	-	-	3.9	7.8	10.8	.2
\$1,700 and under \$1,750	-	-	-	-	3.8	6.2	8.2	1.9
\$1,750 and under \$1,800	-	-	-	-	2.2	5.3	9.1	5.4
\$1,800 and under \$1,850	-	-	-	-	1.5	8.3	5.4	3.3
\$1,850 and under \$1,900	-	-	-	-	1.1	5.0	7.1	5.5
\$1,900 and under \$1,950	-	-	-	-	(1.6)	3.5	4.4	3.9
\$1,950 and under \$2,000	-	-	-	-	-	3.1	6.6	3.7
\$2,000 and under \$2,050	-	-	-	-	-	2.0	3.1	9.9
\$2,050 and under \$2,100	-	-	-	-	-	1.2	5.2	4.1
\$2,100 and under \$2,150	-	-	-	-	-	(3.4)	1.8	3.5
\$2,150 and under \$2,200	-	-	-	-	-	-	2.6	6.2
\$2,200 and under \$2,250	-	-	-	-	-	-	2.2	3.9
\$2,250 and under \$2,300	-	-	-	-	-	-	2.0	4.8
\$2,300 and under \$2,350	-	-	-	-	-	-	1.8	7.2
\$2,350 and under \$2,400	-	-	-	-	-	-	1.2	2.7
\$2,400 and under \$2,450	-	-	-	-	-	-	2.0	3.3
\$2,450 and under \$2,500	-	-	-	-	-	-	1.6	2.9
\$2,500 and under \$2,550	-	-	-	-	-	-	.8	3.5
\$2,550 and under \$2,600	-	-	-	-	-	-	1.1	1.9
\$2,600 and under \$2,650	-	-	-	-	-	-	1.4	1.4
\$2,650 and under \$2,700	-	-	-	-	-	-	1.4	2.5
\$2,700 and under \$2,750	-	-	-	-	-	-	(2.5)	3.5
\$2,750 and under \$2,800	-	-	-	-	-	-	-	1.9
\$2,800 and under \$2,850	-	-	-	-	-	-	-	1.2
\$2,850 and under \$2,900	-	-	-	-	-	-	-	1.0
\$2,900 and under \$2,950	-	-	-	-	-	-	-	.6
\$2,950 and under \$3,000	-	-	-	-	-	-	-	2.9
\$3,000 and under \$3,050	-	-	-	-	-	-	-	1.7
\$3,050 and under \$3,100	-	-	-	-	-	-	-	.8
\$3,100 and under \$3,150	-	-	-	-	-	-	-	.8
\$3,150 and under \$3,200	-	-	-	-	-	-	-	.2
\$3,200 and under \$3,250	-	-	-	-	-	-	-	1.0
\$3,250 and under \$3,300	-	-	-	-	-	-	-	.8
\$3,300 and under \$3,350	-	-	-	-	-	-	-	1.0
\$3,350 and under \$3,400	-	-	-	-	-	-	-	1.4
\$3,400 and over	-	-	-	-	-	-	-	1.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of employees	1,601	5,211	9,158	11,143	7,407	4,249	1,700	483
Average monthly salaries	\$764	\$853	\$978	\$1,185	\$1,422	\$1,642	\$1,911	\$2,311

See footnote at end of table.

Table 4. Employment distribution by salary: Professional and administrative occupations—Continued

(Percent distribution of employees in selected professional and administrative occupations, by average monthly salaries, United States except Alaska and Hawaii, June 1970)

Average monthly salaries	Engineers							
	I	II	III	IV	V	VI	VII	VIII
\$ 650 and under \$ 675	(1.9)	-	-	-	-	-	-	-
\$ 675 and under \$ 700	1.2	-	-	-	-	-	-	-
\$ 700 and under \$ 725	1.8	-	-	-	-	-	-	-
\$ 725 and under \$ 750	2.3	(1.8)	-	-	-	-	-	-
\$ 750 and under \$ 775	4.5	1.8	-	-	-	-	-	-
\$ 775 and under \$ 800	6.9	2.2	(1.4)	-	-	-	-	-
\$ 800 and under \$ 825	12.3	4.9	1.1	-	-	-	-	-
\$ 825 and under \$ 850	14.9	8.0	1.7	-	-	-	-	-
\$ 850 and under \$ 875	14.6	10.3	2.9	-	-	-	-	-
\$ 875 and under \$ 900	14.4	10.9	3.7	-	-	-	-	-
\$ 900 and under \$ 925	11.1	13.2	6.3	-	-	-	-	-
\$ 925 and under \$ 950	5.7	10.9	6.4	(2.4)	-	-	-	-
\$ 950 and under \$ 975	3.7	10.7	8.6	1.5	-	-	-	-
\$ 975 and under \$ 1,000	2.1	7.5	8.7	2.0	-	-	-	-
\$ 1,000 and under \$ 1,050	2.0	9.3	17.0	6.5	(1.7)	-	-	-
\$ 1,050 and under \$ 1,100	(.5)	4.9	16.1	8.3	2.3	-	-	-
\$ 1,100 and under \$ 1,150	-	2.2	11.7	10.9	3.4	(0.7)	-	-
\$ 1,150 and under \$ 1,200	-	(1.5)	7.2	13.2	5.0	1.4	-	-
\$ 1,200 and under \$ 1,250	-	-	3.4	14.3	8.0	2.4	(0.3)	-
\$ 1,250 and under \$ 1,300	-	-	2.4	10.8	8.2	2.4	1.6	-
\$ 1,300 and under \$ 1,350	-	-	(1.3)	9.8	9.2	4.0	1.4	-
\$ 1,350 and under \$ 1,400	-	-	-	7.4	9.5	5.2	1.3	-
\$ 1,400 and under \$ 1,450	-	-	-	4.9	10.2	6.4	2.0	-
\$ 1,450 and under \$ 1,500	-	-	-	3.2	10.4	6.9	3.0	(0.8)
\$ 1,500 and under \$ 1,550	-	-	-	2.1	8.5	7.8	3.2	1.1
\$ 1,550 and under \$ 1,600	-	-	-	1.1	6.5	8.8	3.9	2.5
\$ 1,600 and under \$ 1,650	-	-	-	(1.7)	5.3	9.0	4.8	2.9
\$ 1,650 and under \$ 1,700	-	-	-	-	3.8	9.7	5.6	3.1
\$ 1,700 and under \$ 1,750	-	-	-	-	2.7	8.4	6.5	3.3
\$ 1,750 and under \$ 1,800	-	-	-	-	1.9	7.3	7.5	4.2
\$ 1,800 and under \$ 1,850	-	-	-	-	1.1	5.3	8.3	5.7
\$ 1,850 and under \$ 1,900	-	-	-	-	(2.2)	3.9	7.5	5.8
\$ 1,900 and under \$ 1,950	-	-	-	-	-	3.0	7.3	4.6
\$ 1,950 and under \$ 2,000	-	-	-	-	-	2.2	7.8	6.4
\$ 2,000 and under \$ 2,050	-	-	-	-	-	1.5	6.5	6.1
\$ 2,050 and under \$ 2,100	-	-	-	-	-	1.2	4.8	7.7
\$ 2,100 and under \$ 2,150	-	-	-	-	-	(2.6)	2.7	4.6
\$ 2,150 and under \$ 2,200	-	-	-	-	-	-	3.0	5.9
\$ 2,200 and under \$ 2,250	-	-	-	-	-	-	1.9	5.6
\$ 2,250 and under \$ 2,300	-	-	-	-	-	-	2.3	3.9
\$ 2,300 and under \$ 2,350	-	-	-	-	-	-	1.6	4.7
\$ 2,350 and under \$ 2,400	-	-	-	-	-	-	1.0	2.6
\$ 2,400 and under \$ 2,450	-	-	-	-	-	-	(4.1)	2.2
\$ 2,450 and under \$ 2,500	-	-	-	-	-	-	-	2.3
\$ 2,500 and under \$ 2,550	-	-	-	-	-	-	-	2.7
\$ 2,550 and under \$ 2,600	-	-	-	-	-	-	-	1.2
\$ 2,600 and under \$ 2,650	-	-	-	-	-	-	-	1.4
\$ 2,650 and under \$ 2,700	-	-	-	-	-	-	-	1.6
\$ 2,700 and under \$ 2,750	-	-	-	-	-	-	-	1.1
\$ 2,750 and over	-	-	-	-	-	-	-	5.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of employees	13,028	32,117	85,759	114,365	78,391	41,259	15,460	3,884
Average monthly salaries	\$851	\$923	\$1,029	\$1,225	\$1,417	\$1,623	\$1,861	\$2,116

<sup>1</sup> For scope of study, see table in appendix A. To avoid showing small proportions of employees scattered at or near the extremes of the distribution for some occupations, the percentages of employees in these intervals have been accumulated and are shown in the interval above or below the extreme interval containing at least 1 percent. The percentages representing these employees are shown in parentheses.

NOTE: Because of rounding, sums of individual items may not equal 100.

Table 5. Employment distribution by salary: Engineering technicians and keypunch supervisors

(Percent distribution of engineering technicians and keypunch supervisors, by average monthly salaries, United States except Alaska and Hawaii, June 1970)

Average monthly salaries	Engineering technicians					Keypunch supervisors			
	I	II	III	IV	V	I	II	III	IV
Under \$ 375	0.7	-	-	-	-	-	-	-	-
\$ 375 and under \$ 400	1.9	-	-	-	-	-	-	-	-
\$ 400 and under \$ 425	4.1	-	-	-	-	8.2	(1.0)	4.3	-
\$ 425 and under \$ 450	8.9	(1.3)	-	-	-	2.1	1.3	-	-
\$ 450 and under \$ 475	11.5	1.8	-	-	-	3.6	6.1	1.1	-
\$ 475 and under \$ 500	11.1	2.4	(0.5)	-	-	7.4	5.9	-	-
\$ 500 and under \$ 525	11.6	5.4	1.0	-	-	16.6	4.1	1.6	-
\$ 525 and under \$ 550	14.1	6.2	1.8	-	-	3.2	4.7	3.7	2.8
\$ 550 and under \$ 575	10.6	9.2	3.7	-	-	10.3	4.6	4.7	.4
\$ 575 and under \$ 600	8.2	11.6	3.9	(0.9)	-	9.6	11.7	10.9	.4
\$ 600 and under \$ 625	7.4	14.3	5.7	1.5	-	9.4	7.2	13.3	1.4
\$ 625 and under \$ 650	4.7	12.6	7.5	1.8	-	4.0	12.5	5.7	1.1
\$ 650 and under \$ 675	2.9	9.4	10.6	3.2	-	8.9	5.7	8.0	5.7
\$ 675 and under \$ 700	1.8	7.1	12.0	4.4	(1.4)	5.0	2.6	8.1	5.0
\$ 700 and under \$ 725	(.4)	6.0	11.8	5.7	1.1	4.2	5.1	4.6	7.8
\$ 725 and under \$ 750	-	3.4	9.8	8.2	2.1	3.7	3.3	7.1	4.6
\$ 750 and under \$ 775	-	3.0	7.9	8.5	3.4	1.5	7.3	2.9	5.7
\$ 775 and under \$ 800	-	2.0	6.2	9.8	4.3	.3	2.2	2.7	5.0
\$ 800 and under \$ 825	-	1.2	5.4	10.1	5.6	.8	2.1	2.8	12.5
\$ 825 and under \$ 850	-	1.3	4.0	9.1	7.9	1.0	2.0	2.5	4.6
\$ 850 and under \$ 875	-	(1.6)	3.2	8.3	9.1	(.4)	3.4	4.8	9.6
\$ 875 and under \$ 900	-	-	1.5	7.2	9.3	-	1.5	3.3	6.8
\$ 900 and under \$ 925	-	-	1.4	6.2	8.8	-	4.0	.4	2.5
\$ 925 and under \$ 950	-	-	1.0	4.5	8.4	-	(1.5)	3.0	6.8
\$ 950 and under \$ 975	-	-	(1.2)	3.0	7.9	-	-	2.1	4.6
\$ 975 and under \$ 1,000	-	-	-	1.6	7.5	-	-	.2	5.0
\$ 1,000 and under \$ 1,050	-	-	-	3.0	10.7	-	-	1.5	3.2
\$ 1,050 and under \$ 1,100	-	-	-	1.0	7.4	-	-	1.5	2.1
\$ 1,100 and under \$ 1,150	-	-	-	1.7	3.2	-	-	(.1)	1.1
\$ 1,150 and under \$ 1,200	-	-	-	(.1)	1.2	-	-	-	1.1
\$ 1,200 and over	-	-	-	-	.6	-	-	-	.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of employees	4,685	14,546	26,998	31,478	16,621	1,190	1,444	889	281
Average monthly salaries	\$ 525	\$ 627	\$ 712	\$ 820	\$ 920	\$ 574	\$ 647	\$ 691	\$ 824

<sup>1</sup> For scope of study, see table in appendix A. To avoid showing small proportions of employees scattered at or near the extremes of the distribution for some occupations, the percentages of employees in these intervals have been accumulated and are shown in the interval above or below the extreme interval containing at least 1 percent. The percentages representing these employees are shown in parentheses.

NOTE: Because of rounding, sums of individual items may not equal 100.

Table 6. Employment distribution by salary: Drafting and clerical occupations

(Percent distribution of employees in selected drafting and clerical occupations, by average weekly salaries, United States except Alaska and Hawaii, June 1970)

Average weekly salaries	Draftsmen-tracers	Draftsmen			Clerks, accounting		Clerks, file			Key punch operators		Office boys or girls
		I	II	III	I	II	I	II	III	I	II	
Under \$60	-	-	-	-	-	-	0.2	0.1	-	-	-	0.1
\$60 and under \$65	-	-	-	-	0.4	-	4.4	1.5	-	0.1	-	2.7
\$65 and under \$70	-	-	-	-	1.9	-	14.9	5.5	(0.4)	2.1	-	5.7
\$70 and under \$75	(1.6)	-	-	-	4.1	-	22.2	13.9	1.3	4.5	(0.5)	12.3
\$75 and under \$80	1.9	-	-	-	6.4	(0.5)	19.0	13.5	5.2	7.7	1.0	12.0
\$80 and under \$85	5.5	(0.4)	-	-	9.4	1.1	13.9	15.4	7.8	11.2	3.5	16.7
\$85 and under \$90	7.0	1.0	-	-	10.6	1.5	9.6	12.7	11.3	12.0	4.5	15.5
\$90 and under \$95	10.3	1.9	-	-	11.5	3.5	6.8	12.1	10.1	12.5	8.1	10.5
\$95 and under \$100	10.2	3.6	-	-	9.7	3.9	3.8	6.8	8.4	10.6	8.9	7.3
\$100 and under \$105	11.8	5.8	-	-	9.5	5.4	2.1	5.1	10.1	9.6	11.4	5.2
\$105 and under \$110	7.1	6.4	-	-	7.3	6.1	(3.0)	3.5	7.8	6.7	11.5	2.9
\$110 and under \$115	9.2	7.4	(1.7)	-	6.1	6.3	-	3.3	6.8	5.3	10.6	3.1
\$115 and under \$120	6.7	8.3	1.9	-	5.4	7.7	-	1.8	6.4	3.5	10.3	2.2
\$120 and under \$125	6.8	8.6	2.9	-	3.8	8.9	-	1.6	6.2	3.4	7.2	1.5
\$125 and under \$130	4.5	7.7	3.4	-	3.1	8.2	-	1.0	3.7	2.4	5.8	1.0
\$130 and under \$135	6.2	8.8	4.6	-	2.6	7.1	-	1.0	4.5	2.5	4.8	(1.3)
\$135 and under \$140	2.7	8.4	5.7	(1.5)	2.6	5.6	-	(1.1)	3.0	2.6	4.1	-
\$140 and under \$145	3.2	7.5	7.4	1.4	2.0	5.8	-	-	2.4	1.1	3.6	-
\$145 and under \$150	1.4	5.6	7.5	1.5	1.3	5.8	-	-	2.5	.5	1.7	-
\$150 and under \$160	2.3	8.0	17.2	5.1	1.6	8.2	-	-	1.1	1.2	1.5	-
\$160 and under \$170	1.0	4.1	14.4	9.5	(.9)	6.4	-	-	(.8)	(.3)	(.9)	-
\$170 and under \$180	(.4)	2.9	12.5	12.7	-	3.5	-	-	-	-	-	-
\$180 and under \$190	-	2.2	8.8	15.4	-	2.7	-	-	-	-	-	-
\$190 and under \$200	-	(1.4)	4.3	14.1	-	(1.9)	-	-	-	-	-	-
\$200 and under \$210	-	-	3.7	12.0	-	-	-	-	-	-	-	-
\$210 and under \$220	-	-	1.8	8.3	-	-	-	-	-	-	-	-
\$220 and under \$230	-	-	1.4	4.8	-	-	-	-	-	-	-	-
\$230 and under \$240	-	-	(.8)	3.6	-	-	-	-	-	-	-	-
\$240 and under \$250	-	-	-	2.2	-	-	-	-	-	-	-	-
\$250 and under \$260	-	-	-	2.4	-	-	-	-	-	-	-	-
\$260 and under \$270	-	-	-	2.0	-	-	-	-	-	-	-	-
\$270 and under \$280	-	-	-	2.5	-	-	-	-	-	-	-	-
\$280 and over	-	-	-	1.0	-	-	-	-	-	-	-	-
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of employees	4,992	19,932	32,752	28,343	87,609	60,169	31,145	29,941	8,772	64,645	49,024	28,845
Average weekly salaries	\$109	\$131	\$160	\$196	\$101	\$131	\$79	\$88	\$106	\$98	\$112	\$87

See footnote at end of table.



Table 6. Employment distribution by salary: Drafting and clerical occupations—Continued

(Percent distribution of employees in selected drafting and clerical occupations, by average weekly salaries, United States except Alaska and Hawaii, <sup>1</sup> June 1970)

Average weekly salaries	Secretaries				Steno-graphers, general	Steno-graphers, senior	Switchboard operators		Tabulating-machine operators			Typists	
	I	II	III	IV			I	II	I	II	III	I	II
Under \$60	-	-	-	-	-	-	0.3	-	-	-	-	0.2	-
\$60 and under \$65	-	-	-	-	-	-	2.5	-	-	-	-	.5	-
\$65 and under \$70	-	-	-	-	(0.7)	-	2.7	-	-	-	-	2.9	-
\$70 and under \$75	-	-	-	-	2.7	-	5.5	(1.1)	(1.1)	-	-	8.5	(0.9)
\$75 and under \$80	(1.1)	-	-	-	4.2	(1.4)	6.8	1.3	3.4	(0.6)	-	10.8	2.9
\$80 and under \$85	1.6	(1.3)	(0.7)	-	6.5	1.6	9.7	2.3	7.5	1.7	-	15.2	5.7
\$85 and under \$90	2.7	1.0	1.1	-	8.5	3.0	8.0	3.6	9.6	2.4	-	15.5	9.0
\$90 and under \$95	4.4	1.8	1.5	-	11.2	5.0	10.3	6.8	8.4	3.1	-	13.1	12.0
\$95 and under \$100	5.5	2.3	1.7	(2.8)	9.7	5.6	10.4	7.6	11.6	4.9	-	10.2	12.8
\$100 and under \$105	7.5	4.0	2.9	1.1	10.4	8.9	9.8	9.4	12.5	6.1	(2.1)	7.9	12.6
\$105 and under \$110	8.7	4.2	2.9	2.3	7.9	8.3	5.3	9.3	8.3	7.7	1.8	5.2	10.8
\$110 and under \$115	8.4	5.2	3.0	1.8	8.4	8.1	7.1	9.1	10.2	8.6	2.2	3.3	8.3
\$115 and under \$120	10.8	7.2	4.7	3.4	6.6	10.0	6.0	9.3	6.4	10.1	3.2	2.0	6.4
\$120 and under \$125	9.9	8.1	5.4	4.7	5.6	8.0	5.3	9.1	3.6	10.6	6.9	1.8	5.1
\$125 and under \$130	8.6	8.8	6.2	3.8	5.1	7.8	4.8	9.1	4.2	7.9	4.9	1.1	3.5
\$130 and under \$135	7.7	8.8	7.4	5.7	4.2	7.2	1.9	5.9	2.8	7.6	8.8	1.0	3.1
\$135 and under \$140	6.4	7.9	7.7	6.4	4.2	6.7	1.5	4.2	2.8	6.5	8.0	(.8)	2.3
\$140 and under \$145	5.4	7.7	7.3	5.5	1.7	7.7	(1.8)	3.7	3.6	7.3	8.0	-	1.9
\$145 and under \$150	3.7	6.4	6.9	5.4	.8	3.5	-	2.9	1.5	3.1	9.8	-	1.1
\$150 and under \$160	4.8	11.7	13.4	11.2	1.1	4.2	-	3.7	1.5	5.5	15.3	-	1.3
\$160 and under \$170	1.6	6.9	10.3	13.6	(.2)	2.3	-	1.2	(.9)	3.7	8.8	-	(.4)
\$170 and under \$180	(1.0)	3.9	6.9	10.5	-	(.7)	-	-	-	1.8	7.1	-	-
\$180 and under \$190	-	2.0	4.5	7.5	-	-	-	-	-	1.4	3.5	-	-
\$190 and under \$200	-	(.6)	2.3	5.4	-	-	-	-	-	.1	4.4	-	-
\$200 and under \$210	-	-	1.6	3.5	-	-	-	-	-	-	2.1	-	-
\$210 and under \$220	-	-	(1.6)	2.5	-	-	-	-	-	-	1.4	-	-
\$220 and under \$230	-	-	-	1.1	-	-	-	-	-	-	1.5	-	-
\$230 and over	-	-	-	1.7	-	-	-	-	-	-	.2	-	-
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of employees	90,862	90,995	51,723	15,991	68,301	58,912	14,146	11,641	3,515	7,950	4,328	83,788	45,156
Average weekly salaries	\$120	\$134	\$144	\$156	\$105	\$120	\$98	\$115	\$106	\$124	\$150	\$90	\$105

<sup>1</sup> For scope of study, see table in appendix A. To avoid showing small proportions of employees scattered at or near the extremes of the distribution for some occupations, the percentages of employees in these intervals have been accumulated and are shown in the interval above or below the extreme interval containing at least 1 percent. The percentages representing these employees are shown in parentheses.

NOTE: Because of rounding, sums of individual items may not equal 100.

Table 7. Occupational employment distribution: By industry division

(Percent distribution of employees in selected professional, administrative, technical, and clerical occupations,<sup>1</sup> by industry division,<sup>2</sup> United States except Alaska and Hawaii, June 1970)

Occupation	Manu- facturing	Public utilities <sup>3</sup>	Wholesale trade	Retail trade	Finance, insurance, and real estate	Selected services <sup>4</sup>
<u>Professional and administrative</u>						
Accountants.....	68	12	7	( <sup>5</sup> )	8	( <sup>5</sup> )
Auditors.....	38	17	8	7	29	( <sup>5</sup> )
Chief accountants.....	57	8	10	7	15	( <sup>5</sup> )
Attorneys.....	28	18	5	( <sup>5</sup> )	44	( <sup>5</sup> )
Buyers.....	86	6	( <sup>5</sup> )	( <sup>5</sup> )	( <sup>5</sup> )	( <sup>5</sup> )
Job analysts.....	65	5	( <sup>5</sup> )	( <sup>5</sup> )	23	4
Directors of personnel.....	69	( <sup>5</sup> )	7	6	14	( <sup>5</sup> )
Chemists.....	91	( <sup>5</sup> )	( <sup>5</sup> )	( <sup>5</sup> )	( <sup>5</sup> )	8
Engineers.....	78	10	( <sup>5</sup> )	( <sup>5</sup> )	( <sup>5</sup> )	11
<u>Technical support</u>						
Engineering technicians.....	77	8	( <sup>5</sup> )	( <sup>5</sup> )	( <sup>5</sup> )	15
Draftsmen.....	78	7	( <sup>5</sup> )	( <sup>5</sup> )	( <sup>5</sup> )	13
<u>Clerical supervisory</u>						
Keypunch supervisors.....	30	7	14	7	40	( <sup>5</sup> )
<u>Clerical</u>						
Clerks, accounting.....	39	14	13	12	21	( <sup>5</sup> )
Clerks, file.....	19	5	7	8	59	( <sup>5</sup> )
Keypunch operators.....	41	10	12	9	27	( <sup>5</sup> )
Office boys or girls.....	33	13	9	4	38	( <sup>5</sup> )
Secretaries.....	50	8	7	5	26	4
Stenographers.....	49	14	8	( <sup>5</sup> )	25	( <sup>5</sup> )
Switchboard operators.....	32	13	7	14	32	( <sup>5</sup> )
Tabulating-machine operators.....	41	16	10	4	28	( <sup>5</sup> )
Typists.....	39	7	5	4	42	( <sup>5</sup> )

<sup>1</sup> Each occupation includes the work levels, as defined for the survey, for which employment estimates in all industries within scope of the study are shown in table 1.

<sup>2</sup> For scope of study, see table in appendix A.

<sup>3</sup> Transportation (limited to railroad, local and suburban passenger, deep sea water, and air transportation industries), communication, electric, gas, and sanitary services.

<sup>4</sup> Engineering and architectural services; and commercially operated research, development, and testing laboratories only.

<sup>5</sup> Less than 4 percent.

Table 8. Relative salary levels: Occupation by industry division

(Relative salary levels for selected professional, administrative, technical, and clerical occupations,<sup>1</sup> by industry division,<sup>2</sup> United States except Alaska and Hawaii, June 1970)

(Average salary for each occupation in all industries=100)

Occupation	Manu- facturing	Public utilities <sup>3</sup>	Wholesale trade	Retail trade	Finance, insurance, and real estate	Selected services <sup>4</sup>
<u>Professional and administrative</u>						
Accountants .....	100	103	98	98	97	99
Auditors .....	104	100	103	95	94	115
Chief accountants .....	102	102	( <sup>5</sup> )	( <sup>5</sup> )	99	( <sup>5</sup> )
Attorneys .....	106	103	113	98	96	106
Buyers .....	100	104	109	109	( <sup>5</sup> )	98
Job analysts .....	103	108	( <sup>5</sup> )	( <sup>5</sup> )	88	113
Directors of personnel .....	100	107	94	103	101	104
Chemists .....	100	( <sup>5</sup> )	( <sup>5</sup> )	( <sup>5</sup> )	( <sup>5</sup> )	106
Engineers .....	101	97	( <sup>5</sup> )	( <sup>5</sup> )	( <sup>5</sup> )	98
<u>Technical support</u>						
Engineering technicians.....	99	107	( <sup>5</sup> )	( <sup>5</sup> )	( <sup>5</sup> )	102
Draftsmen .....	100	100	101	99	101	99
<u>Clerical supervisory</u>						
Keypunch supervisors .....	102	116	102	100	94	107
<u>Clerical</u>						
Clerks, accounting .....	104	107	104	92	91	104
Clerks, file .....	108	121	102	97	95	110
Keypunch operators .....	102	110	101	97	94	104
Office boys or girls .....	104	109	99	97	94	104
Secretaries .....	102	109	103	91	93	104
Stenographers .....	102	106	102	97	91	99
Switchboard operators.....	105	112	105	86	96	106
Tabulating machine operators.....	105	101	100	93	93	98
Typists .....	104	106	102	98	95	101

<sup>1</sup> Each occupation includes the work levels, as defined for the survey, for which data are presented in table 1. In computing relative salary levels for each occupation by industry division, the total employment in each work level in all industries surveyed was used as a constant employment weight to eliminate the effect of differences in the proportion of employment in various work levels within each occupation.

<sup>2</sup> For scope of study, see table in appendix A.

<sup>3</sup> Transportation (limited to railroad, local and suburban passenger, deep sea water, and air transportation industries), communication, electric, gas, and sanitary services.

<sup>4</sup> Engineering and architectural services; and commercially operated research, development, and testing laboratories only.

<sup>5</sup> Insufficient employment in 1 work level or more to warrant separate presentation of data.

Table 9. Average standard weekly hours: Occupation by industry division

(Average weekly hours<sup>1</sup> for employees in selected professional, administrative, technical, and clerical occupations,<sup>2</sup> by industry division,<sup>3</sup> United States except Alaska and Hawaii, June 1970)

Occupation	Manu- facturing	Public utilities <sup>4</sup>	Wholesale trade	Retail trade	Finance, insurance, and real estate	Selected services <sup>5</sup>
<u>Professional and administrative</u>						
Accountants .....	39.5	39.5	39.5	39.5	38.0	39.5
Auditors .....	39.0	39.5	39.5	40.0	38.0	39.5
Chief accountants .....	39.5	39.5	( <sup>6</sup> )	( <sup>6</sup> )	38.0	( <sup>6</sup> )
Attorneys .....	38.5	39.5	37.5	40.0	37.5	39.0
Buyers .....	40.0	39.5	39.0	39.5	( <sup>6</sup> )	39.5
Job analysts .....	39.5	39.5	( <sup>6</sup> )	( <sup>6</sup> )	38.0	40.0
Directors of personnel .....	40.0	39.5	38.5	40.5	39.0	40.0
Chemists .....	39.5	( <sup>6</sup> )	( <sup>6</sup> )	( <sup>6</sup> )	( <sup>6</sup> )	39.5
Engineers .....	40.0	39.5	( <sup>6</sup> )	( <sup>6</sup> )	( <sup>6</sup> )	39.5
<u>Technical support</u>						
Engineering technicians .....	40.0	39.5	( <sup>6</sup> )	( <sup>6</sup> )	( <sup>6</sup> )	39.5
Draftsmen .....	40.0	39.5	39.5	38.0	38.5	39.5
<u>Clerical supervisory</u>						
Keypunch supervisors .....	39.5	39.0	39.5	39.0	38.5	39.0
<u>Clerical</u>						
Clerks, accounting .....	39.5	39.0	39.5	39.5	38.5	39.5
Clerks, file .....	39.0	38.5	39.0	39.5	38.0	39.0
Keypunch operators .....	39.5	39.0	39.5	39.5	38.0	39.5
Office boys or girls .....	39.0	38.5	39.0	39.0	38.0	39.0
Secretaries .....	39.0	38.5	38.5	39.0	38.0	39.5
Stenographers .....	39.5	39.5	39.0	39.0	38.0	39.5
Switchboard operators .....	39.5	39.5	39.0	39.5	38.0	39.5
Tabulating-machine operators .....	39.5	39.0	39.5	39.5	37.5	39.5
Typists .....	39.5	39.0	39.0	39.0	38.0	39.5

<sup>1</sup> Based on the standard workweek for which employees receive their regular straight-time salary. If standard hours were not available, the standard hours applicable for a majority of the office work force in the establishment were used. The average for each job category was rounded to the nearest half hour.

<sup>2</sup> Each occupation includes the work levels, as defined for the survey, for which data are presented in table 1.

<sup>3</sup> For scope of study, see table in appendix A.

<sup>4</sup> Transportation (limited to railroad, local and suburban passenger, deep sea water, and air transportation industries), communication, electric, gas, and sanitary services.

<sup>5</sup> Engineering and architectural services; and commercially operated research, development, and testing laboratories only.

<sup>6</sup> Insufficient employment in 1 work level or more to warrant separate presentation of data.

## Appendix A. Scope and Method of Survey

### Scope of Survey

The survey relates to establishments in the United States except Alaska and Hawaii in the following industries: Manufacturing; transportation, communication, electric, gas, and sanitary services; wholesale trade; retail trade; finance, insurance, and real estate; engineering and architectural services; and commercially operated research, development, and testing laboratories. Excluded are establishments employing fewer than the minimum number of workers, as indicated in the accompanying table for each industry division, at the time of reference of the universe data (generally, first quarter of 1969). The variable minimum employment size, which was adopted in the 1966 survey, more nearly equalizes the minimum white-collar employment of establishments among the various industry divisions.

The estimated number of establishments and the total employment within scope of this survey, and within the samples actually studied, are shown for each major industry division in the accompanying table. These estimates also are shown separately for establishments employing 2,500 workers or more and those located in Standard Metropolitan Statistical Areas.<sup>1</sup>

As indicated in the table, the scope of the study was the same for all occupations; however, the clerical and drafting occupations were studied in a larger number of establishments than were the professional, administrative, engineering technician, and keypunch supervisor occupations. The sampling methods used for studying each of these occupational groups are described in detail under Sampling and Estimating Procedures.

### Timing of Survey

Survey data collection was planned so that the data would reflect an average reference period of June 1970.<sup>2</sup> The data for the professional, administrative, engineering technician, and keypunch supervisor occupations were obtained from a nationwide sample of establishments contacted largely between March and September.

The average reference month for clerical and drafting occupations was also June 1970. Data for these occupations were obtained from two sources: The Bureau's occupational wage studies in 44 metropolitan areas which had reference dates of March through September 1970; and in all other areas, from the same sample of establishments that were visited for the professional and administrative occupations.

### Method of Collection

Data were obtained by Bureau field economists, largely by personal visits, from representative establishments within the scope of the survey.<sup>3</sup> Employees were classified according to occupation and level, with the assistance of company officials, on the basis of the BLS job definitions which appear in appendix C. In comparing actual duties and responsibilities of employees with those in the survey definitions, extensive use was made of company occupational descriptions, organization charts, and other personnel records.

<sup>1</sup> The metropolitan area data in the 1970 survey relate to all 229 SMSA's (within the 48 States surveyed) as revised through January 1968 by the Bureau of the Budget. Earlier surveys represented SMSA's ranging in numbers from 188 in 1962 and earlier surveys to 227 in the 1969 survey.

<sup>2</sup> Prior to the 1967 study, the average reference period for clerical and drafting jobs was February, and it was March for all other occupations. Until 1963, reports listed "Winter" as the reference period. From 1963 through 1966, the more specific designation, "February-March," was used. Beginning with 1967, the reference period was changed to June.

<sup>3</sup> The surveys in metropolitan areas, used to develop the nationwide estimates for the drafting and clerical occupations, provide for collection by a combination of mail and personal visits in alternate years.

Number of establishments and workers within scope of survey<sup>1</sup> and number studied by industry division, June 1970

Industry division	Minimum employment in establishments in scope of survey	Within scope of survey <sup>1</sup>			Studied for professional and administrative occupations		Studied for drafting and clerical occupations <sup>2</sup>	
		Number of establishments	Workers in establishments		Number of establishments	Total workers in establishments	Number of establishments	Total workers in establishments
			Total	Professional, administrative, supervisory, and clerical <sup>3</sup>				
United States—all industries <sup>1</sup>		33,003	19,837,209	7,396,199	3,042	6,806,384	5,690	8,516,598
Manufacturing	250	14,266	12,310,793	3,454,058	1,831	4,542,042	2,822	5,340,895
Nonmanufacturing:								
Transportation, <sup>4</sup> communication, electric, gas, and sanitary services	100	2,781	2,160,122	1,011,078	305	1,023,144	661	1,258,540
Wholesale trade	100	4,264	963,564	469,862	186	79,443	519	183,737
Retail trade	250	2,495	2,237,282	464,636	223	546,013	660	972,686
Finance, insurance, and real estate	50	8,680	1,924,791	1,831,072	400	478,110	875	605,930
Services:								
Engineering and architectural services; and commercially operated research, development, and testing laboratories only	100	517	240,657	165,493	97	137,632	153	154,808
Metropolitan areas—all industries <sup>5</sup>		25,154	15,840,705	6,490,327	2,447	6,100,687	5,095	7,810,901
Manufacturing	250	9,246	8,918,595	2,839,459	1,343	3,889,473	2,334	4,688,326
Nonmanufacturing:								
Transportation, <sup>4</sup> communication, electric, gas, and sanitary services	100	2,010	1,953,385	937,502	271	1,007,038	627	1,242,434
Wholesale trade	100	3,807	874,814	435,829	170	75,173	503	179,467
Retail trade	250	2,229	2,104,501	442,094	212	538,271	649	964,946
Finance, insurance, and real estate	50	7,360	1,770,700	1,681,993	364	471,243	839	599,063
Services:								
Engineering and architectural services; and commercially operated research, development, and testing laboratories only	100	502	218,710	153,450	87	119,489	143	136,665
Establishments employing 2,500 workers or more—all industries		1,153	6,727,868	2,521,306	709	5,138,313	782	5,269,459
Manufacturing	-	764	4,513,035	1,524,920	461	3,510,001	478	3,565,819

<sup>1</sup> The study relates to establishments in industries listed, with total employment at or above the minimum limitation indicated in the first column, in the United States except Alaska and Hawaii.

<sup>2</sup> The drafting and clerical occupations were studied in the same sample of establishments as were the professional and administrative occupations, except in SMSA's. For these areas, the drafting and clerical data were obtained from the Bureau's more intensively sampled surveys of separate metropolitan areas. (For a more detailed explanation, see Sampling and Estimating Procedures, p. 36.)

<sup>3</sup> Includes executive, administrative, professional, supervisory, and clerical employees, but excludes technicians and draftsmen, and sales personnel.

<sup>4</sup> Limited to railroad, local and suburban passenger, deep sea water (foreign and domestic), and air transportation industries as defined in the 1967 edition of the Standard Industrial Classification Manual.

<sup>5</sup> Standard Metropolitan Statistical Areas in the United States, except Alaska and Hawaii, as revised through January 1968 by the Bureau of the Budget.

## Nature of Data Collected and Presented

The reported salaries relate to standard salaries paid for standard work schedules, i. e., to the straight-time salary corresponding to the employee's normal work schedule excluding overtime hours. Nonproduction bonuses are excluded, but cost-of-living payments and incentive earnings are included. The average salaries presented relate to full-time employees for whom salary data were available.

About 5 percent of the establishments asked to supply data on professional, administrative, engineering technician, and keypunch supervisor occupations would not do so. These corresponded to an estimated total in the universe studied of approximately 1,004,000 workers, about 5 percent of 19,837,000. A lower refusal rate was found in the surveys of clerical and drafting occupations. The noncooperating units were replaced by others in the same industry-size-location classes. Where no such substitutes were available, since all similar units were already in the sample, the weights of the included establishments were increased to account for the missing units.

Under established policies of some companies, officials were not authorized to provide information relating to salaries for all occupations studied. In nearly all instances, however, information was provided on the number of such employees and the appropriate occupational classification. It was thus possible to estimate the proportion of employees for whom salary data were not available. These policies more often related to the higher level positions, mainly because of policies not to disclose pay data for employees considered a part of the management group or classified in occupational levels involving a single employee.

Number of job categories	Percent of employees classified in professional, administrative, and engineering technician occupations surveyed for whom salary data were not available
1 -----	10 percent or more Directors of personnel IV (19 percent)
4 -----	5 to 9.9 percent Chief accountants III Directors of personnel III Chemists VIII Engineers VIII
18 -----	1 to 4.9 percent
33 -----	Less than 1 percent

Comparisons between establishments that provided salary data for each specific occupation level and those not doing so indicated that the two classes of establishments did not differ materially in industries represented, employment, or salary levels for other jobs in this series for which data were available.

Occupational employment estimates relate to the total in all establishments within the scope of the survey and not the number actually surveyed. Employees for whom salary data were not available were not taken into account in the estimates.<sup>4</sup> These estimates were derived by weighting full-time employees in the occupations studied in each sample establishment in proportion to the number of establishments it represented within the scope of the survey. For example, if the sample establishment was selected from a group of four establishments with similar employment in the same industry and region, each full-time employee found in an occupation studied was counted as four employees in compiling the employment

<sup>4</sup> Also not taken into account were a few instances in which salary data were available for employees in an occupation, but where there was no satisfactory basis for classifying the employees by the appropriate work levels.

estimates for the occupations. In addition, the professional and administrative occupations were limited to employees meeting the specific criteria in each survey definition and were not intended to include all employees in each field of work.<sup>5</sup> For these reasons, and because of differences in occupational structure among establishments, the estimates of occupational employment obtained from the sample of establishments studied serve only to indicate the relative importance of the occupations and levels as defined for the survey. These qualifications of the employment estimates do not materially affect the accuracy of the earnings data.

Wherever possible, data were collected for men and women identified by sex. If separate identification of individuals was not possible, all workers were reported as the predominant sex. In the professional, administrative, and technical support occupations, men were sufficiently predominant to preclude presentation of separate data by sex. For those clerical occupations in which both men and women are commonly employed, separate data by sex are available from the area wage survey reports compiled by metropolitan area. The occupations and work levels included in this study, and in which women accounted for 5 percent or more of the employment, were distributed according to the proportion of women employees, as follows:

Women (percent)	Occupation and level
95 or more-----	File clerks I and II, all levels of keypunch operators, secretaries, stenographers, switchboard operators, and typists
90-94-----	Accounting clerks I, file clerks III and keypunch supervisors I
85-89-----	Keypunch supervisors II
75-79-----	Keypunch supervisors III
70-74-----	Accounting clerks II
50-54-----	Keypunch supervisors IV
45-49-----	Office boys or girls
40-44-----	Tabulating-machine operators I
35-39-----	Tabulating-machine operators II
30-34-----	Job analysts I
25-29-----	Draftsmen-tracers, engineering technicians I, and tabulating-machine operators III
20-24-----	Job analysts II
15-19-----	Chemists I and II
10-14-----	Accountants I, buyers I, job analysts III, and engineering technicians II
5- 9-----	Accountants II, auditors I, attorneys II, job analysts IV, directors of personnel I and II, chemists III, and draftsmen I

### Sampling and Estimating Procedures

As indicated earlier, this survey relates to all establishments in the United States, except Alaska and Hawaii, within the industry and minimum size scope. Although one sample of establishments was selected for studying the professional, administrative, engineering technician, and keypunch supervisor occupations, and another for the drafting and clerical occupations, both relate to the same population of geographic, industry, and size-of-establishment characteristics. The procedures used for selecting samples for these two groups of occupations are explained in the following paragraphs.

Professional, Administrative, Engineering Technician, and Keypunch Supervisor Occupations. The sampling procedures called for the detailed stratification of all establishments within scope of the survey by location, industry, and size of employment. From this universe, a nationwide sample of about 3,000 establishments (not companies) was selected systematically.<sup>6</sup> Each industry was sampled separately, the sampling rates dependent on the importance of the industry as an employer having the survey jobs. Within each industry, a

<sup>5</sup> Engineers, for example, are defined to permit classification of employees engaged in engineering work within a band of eight levels, starting with inexperienced engineering graduates and excluding only those within certain fields of specialization or in positions above those covered by level VIII. By way of contrast, such occupations as chief accountants and directors of personnel are defined to include only those with responsibility for a specified program and with duties and responsibilities as indicated for each of the more limited number of work levels selected for study.

<sup>6</sup> A few of the largest employers, together employing approximately one and a quarter million workers, gave data on a company-wide basis. These companies were eliminated from the universe to which the preceding procedure applies. The sample count includes the establishments of these companies within the scope of the survey.



greater proportion of large than of small establishments was included. In combining the data, each establishment was weighted according to its probability of selection, so that unbiased estimates were generated. To illustrate the process, where one establishment out of four was selected, it was given a weight of 4, thus representing itself plus three others. In instances where data were not available for the original sample member, an alternate of the same original probability of selection was chosen in the same industry-size classification. Where there was no suitable substitution for the original sample member, the missing unit was accounted for by assigning additional weight to an existing sample member that was as nearly similar as possible to the missing unit.

Clerical and Drafting Occupations. The nationwide estimates for the clerical and drafting occupations are, in large part, a byproduct of the Bureau's surveys of these occupations in 89 metropolitan areas. Data from 44 of these area wage surveys were adjusted to the scope of the national survey and were included to represent themselves.<sup>7</sup> The sampling of establishments within each of these areas was designed to yield estimates of the area as a whole, and for major industry divisions within the area. As described in the preceding section, the establishments were stratified by industry and employment size, and sample members selected at random for each stratum.

For all remaining areas, clerical and drafting data were obtained from the same nationwide sample of establishments used for the professional, administrative, engineering technician, and keypunch supervisor occupations. Within this sample there were approximately 750 establishments in areas where locality studies had been done between October 1969 and February 1970. Where possible, clerical and drafting data reported in these studies were updated to reflect general increases occurring to the time professional and administrative data were collected. In all other establishments, clerical and drafting data were collected in conjunction with professional and administrative data.

#### Conversion of Salary Rates

Salary data for the selected occupations were collected in the form in which it was most readily available from company records, i. e., on a weekly, biweekly, semimonthly, monthly, or annual basis. For the initial tabulations, the salary data were first converted to a weekly basis for the clerical and drafting occupations and to a monthly basis for the professional, administrative, and engineering technician occupations. The factors used to convert these data for the two groups of occupations were as follows:

Time interval represented by salary	Salaries for clerical and drafting occupations to weekly basis	Salaries for professional and administrative occupa- tions and for engineering technicians and keypunch supervisors to monthly basis
Weekly-----	1.0000	4.3450
Biweekly-----	.5000	2.1725
Semimonthly-----	.4602	2.0000
Monthly-----	.2301	1.0000
Annual-----	.0192	.0833

Average monthly salaries presented in tables 1, 2, and 3 and annual salaries presented in tables 1 and 2 for the clerical and drafting occupations are derived from the average weekly salaries (to the nearest penny) by use of factors 4.345 and 52.14, respectively, and rounding results to the nearest dollar. Average weekly salaries for these occupations, presented in table 6, are rounded to the nearest half dollar. Average monthly salaries presented in tables 1, 2, and 3 for the professional and administrative occupations and for engineering technicians are rounded to the nearest dollar. To obtain the annual salaries, average monthly salaries (to the nearest penny) are multiplied by 12 and rounded to the nearest dollar.

<sup>7</sup> These were the 44 area wage surveys (excluding Cleveland, Kansas City (Mo.), Omaha, San Jose, Sioux Falls, and Trenton) which had payroll reference dates of March through September 1970, and were, therefore, representative of the same collection time period that applied for the national survey.

### Method of Determining Median and Quartile Values

Median and quartile values presented in this report were derived from distributions of employees by salary using \$1 class intervals. Weekly salary class intervals were used for draftsmen and clerical occupations and monthly salary class intervals were used for all other occupations. The weekly values were multiplied by 4.345 to obtain monthly values and by 52.14 to obtain annual values. The annual values for other than draftsmen and clerical occupations were obtained by multiplying monthly values by 12.

### Estimates of Sampling Error

The survey procedure yields estimates with widely varying sampling errors, depending on the frequency with which the job occurs, and the dispersion of salaries. Thus, for the professional, administrative, engineering technician, and keypunch supervisor occupation work levels, the relative sampling errors of the average salaries were distributed as follows: 32 were under 2 percent; 14 were 2 and under 4 percent; 5 were 4 and under 6 percent; and 5 were 6 percent and over.<sup>8</sup> The nationwide estimates for the clerical and drafting room occupations, based on the much larger sample, are subject to smaller sampling error—2 percent or less in all cases except for accounting clerks I (2.7 percent), file clerks I, II, and III (2.4, 4.3, 3.8 percent, respectively), and switchboard operators I (2.5 percent). These sampling errors measure the validity of the band within which the true average is likely to fall. Thus, for an occupation with a sample average monthly salary of \$1,000 and a sampling error of 4 percent, the chances are 19 out of 20 that the true average lies within the band from \$960 and \$1,040.

<sup>8</sup> The 6 percent and over group included: Keypunch supervisor II—9 percent; chief accountant I—8 percent; attorney I—7.9 percent; keypunch supervisor I—7.2 percent; and attorney VI—6.1 percent.

## Appendix B. Survey Changes in 1970

### Change in Occupational Coverage

A five-level keypunch supervisor occupation was added to the survey. See appendix C for the definition used to classify the occupation.

## Appendix C. Occupational Definitions

The primary purpose of preparing job definitions for the Bureau's wage surveys is to assist its field staff in classifying into appropriate occupations, or levels within occupations, workers who are employed under a variety of payroll titles and different work arrangements from establishment to establishment and from area to area. This permits the grouping of occupational wage rates representing comparable job content. To secure comparability of job content, some occupations and work levels are defined to include only those workers meeting specific criteria as to training, job functions, and responsibilities. Because of this emphasis on inter-establishment and interarea comparability of occupational content, the Bureau's occupational definitions may differ significantly from those in use in individual establishments or those prepared for other purposes. Also see note referring to the definitions for the drafting and clerical occupations on page 78.

### ACCOUNTANTS AND AUDITORS

#### ACCOUNTANT

Performs professional accounting work requiring knowledge of the theory and practice of recording, classifying, examining, and analyzing the data and records of financial transactions. The work generally requires a bachelor's degree in accounting or, in rare instances, equivalent experience and education combined. Positions covered by this definition are characterized by the inclusion of work that is analytical, creative, evaluative, and advisory in nature. The work draws upon and requires a thorough knowledge of the fundamental doctrines, theories, principles, and terminology of accountancy, and often entails some understanding of such related fields as business law, statistics, and general management. (See also chief accountant.)

Professional responsibilities in accountant positions above the entry and developmental levels include several such duties as:

Analyzing the effects of transactions upon account relationships;

Evaluating alternative means of treating transactions;

Planning the manner in which account structures should be developed or modified;

Assuring the adequacy of the accounting system as the basis for reporting to management;

Considering the need for new or changed controls;

Projecting accounting data to show the effects of proposed plans on capital investments, income, cash position, and overall financial condition;

Interpreting the meaning of accounting records, reports, and statements;

Advising operating officials on accounting matters; and

Recommending improvements, adaptations, or revisions in the accounting system and procedures.

(Entry and developmental level positions provide opportunity to develop ability to perform professional duties such as those enumerated above.)

## ACCOUNTANT—Continued

In addition to such professional work, most accountants are also responsible for assuring the proper recording and documentation of transactions in the accounts. They, therefore, frequently direct nonprofessional personnel in the actual day-to-day maintenance of books of accounts, the accumulation of cost or other comparable data, the preparation of standard reports and statements, and similar work. (Positions involving such supervisory work but not including professional duties as described above, are not included in this description.)

Excluded are accountants whose principal or sole duties consist of designing or improving accounting systems or other nonoperating staff work, e.g., financial analysis, financial forecasting, tax advising, etc. (The criteria that follow for distinguishing among the several levels of work are inappropriate for such jobs.) Note, however, that professional accountant positions with responsibility for recording or reporting accounting data relative to taxes are included, as are operating or cost accountants whose work includes, but is not limited to, improvement of the accounting system.

Some accountants use electronic data processing equipment to process, record, and report accounting data. In some such cases the machine unit is a subordinate segment of the accounting system; in others it is a separate entity or is attached to some other organization. In either instance, providing the primary responsibility of the position is professional accounting work of the type otherwise included, the use of data processing equipment of any type does not of itself exclude a position from the accountant description nor does it change its level.

### Accountant I

General characteristics. At this beginning professional level, the accountant learns to apply the principles, theories, and concepts of accounting to a specific system. The position is distinguishable from nonprofessional positions by the variety of assignments; rate and scope of development expected of the incumbent; and the existence, implicit or explicit, of a planned training program designed to give the entering accountant practical experience. (Terminal positions are excluded.)

Direction received. Works under close supervision of an experienced accountant whose guidance is directed primarily to the development of the trainee's professional ability and to the evaluation of his potential for advancement. Limits of assignments are clearly defined, methods of procedure are specified, and kinds of items to be noted and referred to supervisor are identified.

Typical duties and responsibilities. Performs a variety of accounting tasks such as: Examining a variety of financial statements for completeness, internal accuracy, and conformance with uniform accounting classifications or other specific accounting requirements; reconciling reports and financial data with financial statements already on file, and pointing out apparent inconsistencies or errors; carrying out assigned steps in an accounting analysis, such as computing standard ratios; assembling and summarizing accounting literature on a given subject; preparing relatively simple financial statements, not involving problems of analysis or presentation; and preparing charts, tables, and other exhibits to be used in reports. In addition to such work, may also perform some nonprofessional tasks for training purposes.

Responsibility for direction of others. Usually none.

### Accountant II

General characteristics. At this continuing developmental level the professional accountant makes practical applications of technical accounting practices and concepts beyond the mere application of detailed rules and instructions. Assignments are designed to expand his practical experience and to develop his professional judgment in the application of basic

## ACCOUNTANT—Continued

accounting techniques to simple professional problems. He is expected to be competent in the application of standard procedures and requirements to routine transactions, to raise questions about unusual or questionable items, and to suggest solutions. (Terminal positions are excluded.)

Direction received. Work is reviewed closely to verify its general accuracy and coverage of unusual problems, to insure conformance with required procedures and special instructions, and to assure his professional growth. His progress is evaluated in terms of his ability to apply his professional knowledge to basic accounting problems in the day-to-day operations of an established accounting system.

Typical duties and responsibilities. Performs a variety of accounting tasks, e.g., prepares routine working papers, schedules, exhibits, and summaries indicating the extent of his examination, and presenting and supporting his findings and recommendations. Examines a variety of accounting documents to verify accuracy of computations and to ascertain that all transactions are properly supported, are in accordance with pertinent policies and procedures, and are classified and recorded according to acceptable accounting standards.

Responsibility for direction of others. Usually none, although he may supervise a few clerks.

### Accountant III

General characteristics. Performs professional operating or cost accounting work requiring the standardized application of well established accounting principles, theories, concepts, and practices. Receives detailed instructions concerning the overall accounting system and its objectives, the policies and procedures under which it is operated, and the nature of changes in the system or its operation. Characteristically, the accounting system or assigned segment is stable and well established (i.e., the basic chart of accounts, classifications, the nature of the cost accounting system, the report requirements, and the procedures are changed infrequently).

Depending upon the workload involved, the accountant may have such assignments as supervision of the day-to-day operation of: (a) The entire system of a subordinate establishment, or (b) a major segment (e.g., general accounting; cost accounting; or financial statements and reports) of a somewhat larger system, or (c) in a very large and complex system, may be assigned to a relatively narrow and specialized segment dealing with some problem, function, or portion of work which is itself of the level of difficulty characteristic of this level.

Direction received. A higher level professional accountant normally is available to furnish advice and assistance as needed. Work is reviewed for technical accuracy, adequacy of professional judgment, and compliance with instructions through spot checks, appraisal of results, subsequent processing, analysis of reports and statements, and other appropriate means.

Typical duties and responsibilities. The primary responsibility of most positions at this level is to assure that the assigned day-to-day operations are carried out in accordance with established accounting principles, policies, and objectives. The accountant performs such professional work as: Developing nonstandard reports and statements (e.g., those containing cash forecasts reflecting the interrelations of accounting, cost budgeting, or comparable information); interpreting and pointing out trends or deviations from standards; projecting data into the future; predicting the effects of changes in operating programs; or identifying management informational needs, and refining account structures or reports accordingly.

## ACCOUNTANT—Continued

Within the limits of his delegated responsibility, makes day-to-day decisions concerning the accounting treatment of financial transactions. Is expected to recommend solutions to complex problems and propose changes in the accounting system for approval at higher levels. Such recommendations are derived from his own knowledge of the application of well-established principles and practices.

Responsibility for the direction of others. In most instances he directs the work of a subordinate nonprofessional staff.

### Accountant IV

General characteristics. Performs professional operating or cost accounting work which requires the application of well-established accounting principles, theories, concepts, and practices to a wide variety of difficult problems. Receives instructions concerning the objectives and operations of the overall accounting system. At this level, compared with level III, the accounting system or assigned segment is more complex, i. e., (a) is relatively unstable, (b) must adjust to new or changing company operations, (c) serves organizations of unusually large size, or (d) is complicated by the need to provide and coordinate separate or specialized accounting treatment and reporting (e. g., cost accounting using standard cost, process cost, and job order techniques) for different operations or divisions of company.

Depending upon the workload and degree of coordination involved, the accountant IV may have such assignments as the supervision of the day-to-day operation of: (a) The entire accounting system of a subordinate establishment; or (b) a major segment (e. g., general accounting; cost accounting; or financial statements and reports) of an accounting system serving a larger and more complex establishment, or (c) the entire accounting system of a large (e. g., employing several thousand persons) subordinate establishment which in other respects has an accounting system of the complexity that characterizes level III.

Direction received. A higher level accountant normally is available to furnish advice and assistance as needed. Work is reviewed by spot checks and appraisal of results for adequacy of professional judgment, compliance with instructions, and overall accuracy and quality.

Typical duties and responsibilities. As at level III, a primary characteristic of most positions at this level is the responsibility of operating an accounting system or major segment of a system in the intended manner.

The accountant IV exercises professional judgment in making frequent appropriate recommendations for: New accounts; revisions in the account structure; new types of ledgers; revisions in reporting system or subsidiary records; changes in instructions regarding the use of accounts; new or refined account classifications or definitions; etc. He also makes day-to-day decisions concerning the accounting treatment of financial transactions and is expected to recommend solutions to complex problems beyond the scope of his responsibility.

Responsibility for direction of others. Accounting staff he supervises, if any, may include professional accountants.

### Accountant V

General characteristics. Performs professional operating or cost accounting work which is of greater than average professional difficulty and responsibility because of the presence of unusual and novel problems or the unusual magnitude or impact of the accounting program. Typically this level of difficulty arises from (a) the large size of the accounting and operating organization, (b) the atypical nature of the accounting problems encountered, or (c) the unusually great involvement in accounting systems design and development.

Examples of assignments characteristic of this level are the supervision of the day-to-day operation of: (a) The entire accounting system of a subordinate establishment having an unusually novel and complex accounting system, or (b) the entire accounting system of a large (e. g., employing several thousand persons) subordinate establishment which in

## ACCOUNTANT—Continued

other respects has an accounting system of the complexity that characterizes level IV, or (c) the entire accounting system of a company or corporation that has a relatively stable and conventional accounting system and employs several thousand persons and has a few subordinate establishments which include accounting units, or (d) a major segment of an accounting system that substantially exceeds the characteristics described in any one of the preceding examples.

Direction received. An accountant of higher level normally is available to furnish advice and assistance as needed. Work is reviewed for adequacy of professional judgment, compliance with instructions, and overall quality.

Typical duties and responsibility. The work is characterized by its unusual difficulty or responsibility. Accountants V typically are directly concerned on a relatively continuous basis with what the nature of the accounting system should be, with the devising or revising of the operating accounting policies and procedures that are necessary, and with the managerial as well as the accounting meaning of the reports and statements for which he is responsible. Accountants V are necessarily deeply involved in fundamental and complex accounting matters and in the managerial problems that are affected.

Responsibility for direction of others. Accounting staff he supervises generally includes professional accountants.

## AUDITOR

Performs professional auditing work requiring a bachelor's degree in accounting or, in rare instances, equivalent experience and education combined. Audits the financial records and practices of a company, or of divisions or components of the company, to appraise systematically and verify the accounting accuracy of records and reports and to assure the consistent application of accepted accounting principles. Evaluates the adequacy of the accounting system and internal financial control. Makes appropriate recommendations for improvement as necessary. To the extent determined necessary, examines the transactions entering into the balance sheet and the transactions entering into income, expense, and cost accounts. Determines:

- (1) The existence of recorded assets (including the observation of the taking of physical inventories) and the all-inclusiveness of recorded liabilities.
- (2) The accuracy of financial statements or reports and the fairness of presentation of facts therein.
- (3) The propriety or legality of transactions.
- (4) The degree of compliance with established policies and procedures concerning financial transactions.

Excluded are positions which do not require full professional accounting training because the work is confined on a relatively permanent basis to repetitive examinations of a limited area of company operations and accounting processes, e.g., only accounts payable and receivable; demurrage records and related functions, or station operations only of a railroad company; branch offices which do not engage in the full range of banking and accounting activities of the main bank; warehouse operations only of a mail order company; checking transactions to determine whether or not they conform to prescribed routines or procedures. (Examinations of such repetitive or limited nature normally do not require or permit professional audit work to be performed.)



## AUDITOR—Continued

### Auditor I

General characteristics. As a trainee auditor at the entering professional level, performs a variety of routine assignments. Typically, he is rotated through a variety of tasks under a planned training program designed to provide practical experience in applying the principles, theories, and concepts of accounting and auditing to specific situations. (Terminal positions are excluded.)

Direction received. Works under close supervision of an experienced auditor whose guidance is directed primarily to the development of the trainee's professional ability and to the evaluation of his potential for advancement. Limits of assignments are clearly defined, methods of procedure are specified, and kinds of items to be noted and referred to supervisor are identified.

Typical duties and responsibilities. Assists in making audits by performing such tasks as: Verification of the accuracy of the balances in various records; examination of a variety of types of documents and vouchers for accuracy of computations; checking transactions to assure they are properly documented and have been recorded in accordance with correct accounting classifications; verifying the count of inventories; preparing detailed statements, schedules, and standard audit working papers; counting cash and other assets; preparing simple reconciliations; and similar functions.

### Auditor II

General characteristics. At this continuing developmental level the professional auditor serves as a junior member of an audit team, independently performing selected portions of the audit which are limited in scope and complexity. Auditors at this level typically have acquired knowledge of company operations, policies, and procedures. (Terminal positions are excluded.)

Direction received. Detailed instructions are furnished and the work is reviewed to the extent necessary to verify its general accuracy and coverage of unusual problems, to insure conformance with required procedures and special instructions, and to assure the auditor's professional growth. Any technical problems not covered by instructions are brought to the attention of a superior. His progress is evaluated in terms of his ability to apply his professional knowledge to basic auditing situations.

Typical duties and responsibilities. Applies knowledge of accounting theory and audit practices to a variety of relatively simple professional problems in his audit assignments, including such tasks as: The verification of reports against source accounts and records to determine their reliability; reconciliation of bank and other accounts and verifying the detail of recorded transactions; detailed examinations of cash receipts and disbursement vouchers, payroll records, requisitions, work orders, receiving reports, and other accounting documents to ascertain that transactions are properly supported and are recorded correctly from an accounting or regulatory standpoint; or preparing working papers, schedules, and summaries.

### Auditor III

General characteristics. Work at this level consists of the audit of operations and accounting processes that are relatively stable, well-established, and typical of the industry. The audits primarily involve the collection and analysis of readily available findings; there is previous audit experience that is directly applicable; the audit reports are normally prepared in a prescribed format using a standard method of presentation; and few if any major problems are anticipated. The work performed requires the application of substantial knowledges of accounting principles and practices, e.g., bases for distinguishing among capital maintenance and operating expenses; accruing reserves for taxes; and other accounting considerations of an equivalent nature.

## AUDITOR—Continued

Direction received. Work is normally within an established audit program and supervision is provided by a higher level auditor who outlines and discusses assignments. Work is spot-checked in progress. Completed assignments are reviewed for adequacy of coverage, soundness of judgment, compliance with professional standards, and adherence to policies.

Typical duties and responsibilities. The auditor examines transactions and verifies accounts; observes and evaluates accounting procedures and internal controls; prepares audit working papers and submits an audit report in the required pattern containing recommendations for needed changes or improvements. He is usually responsible for selecting the detailed audit methods to follow, choosing the audit sample and its size, determining the extent to which discrepancies need to be investigated, and deciding the depth of the analyses required to support reported findings and conclusions.

Examples of assignments involving work of this level:

(1) As a team leader or working alone, independently conducts audits of the complete accounts and related operations of smaller or less complex companies (e.g., involving a centralized accounting system with few or no subordinate, subsidiary, or branch accounting records) or of comparable segments of larger companies.

(2) As a member of an audit team independently accomplishes varied audit assignments of the above described characteristics, typically major segments of complete audits, or assignments otherwise limited in scope of larger and more complex companies (e.g., complex in that the accounting system entails cost, inventory, and comparable specialized systems integrated with the general accounting system).

Illustrative of such assignments are the audit and initial review of accounting treatment and validity of reporting of overhead expenses in a large manufacturing or maintenance organization (e.g., major repair yard of a railroad); or, the checking, verification, and balancing of all accounts receivable and accounts payable; or, the analysis and verification of assets and reserves; or, the inspection and evaluation of accounting controls and procedures.

### Auditor IV

General characteristics. Auditors at this level are experienced professionals who apply thorough knowledge of accounting principles and theory in connection with a variety of audits. Work at this level is characterized by the audit of organizations and accounting processes which are complex and difficult because of such factors as: Presence of new or changed programs and accounting systems; existence of major specialized accounting functions (e.g., cost accounting, inventory accounting, sales accounting), in addition to general accounting; need to consider extensive and complicated regulatory requirements; lack of or difficulty in obtaining information; and other similar factors. Typically, a variety of different assignments are encountered over a period of time, e.g., 1 year. The audit reports prepared are comprehensive, explain irregularities, cite rules or regulations violated, recommend remedial actions, and contain analyses of items of special importance or interest to company management.

Direction received. Within an established audit program, have responsibility for independently planning and executing audits. Unusually difficult problems are discussed with the supervisor who also reviews completed assignments for adherence to principles and standards and the soundness of conclusions.

Typical duties and responsibilities. Auditors at this level have full responsibility for planning the audit, including determination of the aspects to emphasize, methods to be used, development of nonstandard or specialized audit aids such as questionnaires, etc., where previous audit experience and plans are of limited applicability.

## AUDITOR—Continued

Included in the scope of work that characterizes this level are such functions as: Evaluation of methods used for determining depreciation rates of equipment; evaluation of assets where original costs are unknown; evaluation of the reliability of accounting and reporting systems; analysis of cost accounting systems and cost reports to evaluate the basis for cost and price setting; evaluation of accounting procurement and supply management records, controls, and procedures; and many others.

Examples of assignments involving work at this level:

(1) As a team leader or working alone, independently plans and conducts audits of the complete accounts and related operations of relatively large and complex companies (e.g., complex in that the accounting system entails cost, inventory, and comparable specialized accounting systems integrated with the general accounting system) or of company branch, subsidiary, or affiliated organizations which are individually of comparable size and complexity, or

(2) As a member of an audit team independently plans and accomplishes audit assignments that constitute major segments of audits of very large and complex organizations, for example, those with financial responsibilities so great as to involve specialized subordinate, subsidiary, or affiliate accounting systems that are complete in themselves.

NOTE: Excluded from level IV are auditors who, as team leader or working alone, conduct complete audits of very large and complex organizations, for example, those with financial responsibilities so great as to involve specialized subordinate, subsidiary, or affiliate accounting systems that are complete in themselves; or are team members assigned to major segments of audits of even larger or more complex organizations.

## CHIEF ACCOUNTANT

As the top technical expert in accounting, is responsible for directing the accounting program for a company or for an establishment of a company. The minimum accounting program includes: (1) General accounting (assets, liabilities, income, expense, and capital accounts, including responsibility for profit and loss and balance sheet statements); and (2) at least one other major accounting activity, typically tax accounting, cost accounting, property accounting, or sales accounting. It may also include such other activities as payroll and timekeeping, and mechanical or electronic data processing operations which are an adjunct of the accounting system. (Responsibility for an internal audit program is typically not included.)

The responsibilities of the chief accountant include all of the following:

(1) On own responsibility, developing or adapting or revising an accounting system to meet the needs of the organization.

(2) Supervising, either directly or through subordinate supervisors, the operation of the system with full management responsibility for the quality and quantity of work performed, training and development of subordinates, work scheduling and review, coordination with other parts of the organization served, etc.

(3) Providing directly or through an official such as a comptroller, advisory services to the top management officials of the organization served as to:

(a) The status of financial resources and the financial trends or results of operations as revealed by accounting data, and selecting a manner of presentation that is meaningful to management.

(b) Methods for improving operations as suggested by his expert knowledge of accounting, e.g., proposals for improving cost control, property management, credit and collection, tax reduction, or similar programs.

## CHIEF ACCOUNTANT—Continued

Excluded are positions with responsibility for the accounting program if they also include (as a major part of the job) responsibility for budgeting; work measurement; organization, methods and procedures studies; or similar nonaccounting functions. (Positions of such breadth are sometimes titled comptroller, budget and accounting manager, financial manager, etc.)

Some positions responsible for supervising general accounting and one or more other major accounting activities but which do not fully meet all of the responsibilities of a chief accountant specified above may be covered by the descriptions for accountant.

Chief accountant jobs which meet the above characteristics are classified by level<sup>1</sup> of work according to (a) authority and responsibility and (b) technical complexity, using the chart which follows the definitions below.

### Authority and Responsibility

AR-1. The accounting system (i. e., accounts, procedures, and reports to be used) has been prescribed in considerable detail by higher levels in the company or organization. The chief accountant has final, unreviewed authority within the prescribed system, to expand it to fit the particular needs of the organization served, e. g., in the following or comparable ways:

Provides greater detail in accounts and reports or financial statements;

Establishes additional accounting controls, accounts, subaccounts, and subsidiary records; and

Provides special or interim reports and statements needed by the manager responsible for the day-to-day operations of the organization served.

AR-2. The basic accounting system is prescribed in broad outlines rather than in specific detail. While certain major financial reports, overall accounts, and general policies are required by the basic system, the chief accountant has broad latitude and authority to decide the specific methods, procedures, accounts, reports, etc.—to be used within the organizational segment served. He must secure prior approval from higher levels for only those changes which would basically affect the broad requirements prescribed by such higher levels. Typical responsibilities include:

Evaluating and taking final action on recommendations proposed by subordinate establishments for changes in aspects of the accounting system or activities not prescribed by higher authority;

Extending cost accounting operations to areas not previously covered;

Changing from one cost accounting method to another;

Expanding the utilization of computers within the accounting process; and

Preparing accounting reports and statements reflecting the events and progress of the entire organization for which he is responsible; often consolidating data submitted by subordinate segments.

This degree of authority is most typically found at intermediate organizational levels such as regional offices, or division or subsidiary headquarters. It is also found in some company level situations where the authority of the chief accountant is less extensive than is described in AR-3. More rarely it is found in plant level chief accountants who have been delegated more authority than usual for such positions as described in AR-1.

<sup>1</sup> Insufficient data were obtained for level V to warrant presentation of average salaries.

CHIEF ACCOUNTANT—Continued

AR-3. Has complete responsibility for establishing and maintaining the framework for the basic accounting system used in the company, subject only to general policy guidance and control from a higher level company official responsible for general financial management. Typical responsibilities include:

Determining the basic characteristics of the company's accounting system and the specific accounts to be used;

Devising and preparing accounting reports and statements required to meet management's needs for data;

Establishing basic accounting policies, interpretations, and procedures;

Reviewing and taking action on proposed revisions to the company's accounting system suggested by subordinate units; and

Taking final action on all technical accounting matters.

Characteristically, participates extensively in broad company management processes by providing accounting advice, interpretations, or recommendations based on data accumulated in the accounting system and on his professional judgment and experience.

Technical Complexity

TC-1. The organization which the accounting program serves has relatively few functions, products, work processes, etc., and these tend to be stable and unchanging. The accounting system operates in accordance with well-established principles and practices or those of equivalent difficulty which are typical of that industry.

TC-2. The organization which the accounting program serves has a relatively large number of functions, products, work processes, etc., which require substantial and frequent adaptations of the basic system to meet management needs (e.g., adoption of new accounts, subaccounts, and subsidiary records; revision of instructions for the use of accounts; improvement or expansion of methods for accumulating and reporting cost data in connection with new or changed work processes).

TC-3. The organization which the accounting program serves puts a heavy demand on the accounting organization for specialized and extensive adaptations of the basic system to meet management needs. Such demands arise because the functions, products, work processes, etc., of the organization are very numerous, diverse, unique, or specialized, or there are other comparable complexities. Consequently, the accounting system, to a considerable degree, is developed well beyond established principles and accounting practices in order to:

Provide for the solution of problems for which no clear precedents exist; or

Provide for the development or extension of accounting theories and practices to deal with problems to which these theories and practices have not previously been applied.

Subordinate Staff

In the chart that follows, the number of professional accountants supervised is recognized to be a relatively crude criterion for distinguishing between various classes. It is to be considered less important in the matching process than the other criteria. In addition to the staff of professional accountants in the system for which the chief accountant is responsible, there are clerical, machine operation, bookkeeping, and related personnel.

CHIEF ACCOUNTANT—Continued

Class	Authority and responsibility *	Technical complexity <sup>1</sup>	Subordinate staff of professional accountants in the system for which he is responsible.
I	AR-1	TC-1	Only one or two professional accountants, who do not exceed the accountant III job definition.
II	AR-1	TC-2	About 5 to 10 professional accountants, with at least one or two matching the accountant IV job definition.
	<u>or</u>		
	AR-2	TC-1	About 5 to 10 professional accountants. Most of these match the accountant III job definition, but one or two may match the accountant IV job definition.
III	<u>or</u>		
	AR-3	TC-1	Only one or two professional accountants, who do not exceed the accountant IV job definition.
	AR-1	TC-3	About 15 to 20 professional accountants. At least one or two match the accountant V job definition.
IV	<u>or</u>		
	AR-2	TC-2	About 15 to 20 professional accountants. Many of these match the accountant IV job definition, but some may match the accountant V job definition.
	<u>or</u>		
V	AR-3	TC-1	About 5 to 10 professional accountants. Most of these match the accountant III job definition, but one or two may match as high as accountant V.
	<u>or</u>		
	AR-2	TC-3	About 25 to 40 professional accountants. Many of these match the accountant V job definition, but several may exceed that level.
V	<u>or</u>		
	AR-3	TC-2	About 15 to 20 professional accountants. Most of these match the accountant IV job definition, but several may match the accountant V and one or two may exceed that level.
V	AR-3	TC-3	About 25 to 40 professional accountants. Many of these match the accountant V job definition, but several may exceed that level.

\* AR-1, -2, and -3; and TC-1, -2, and -3 are explained on the preceding pages.

## ATTORNEYS

### ATTORNEY

Performs consultation and advisory work and carries out the legal processes necessary to effect the rights, privileges, and obligations of the company. The work performed requires completion of law school with an LL.B. degree (or the equivalent) and admission to the bar. Responsibilities or functions include one or more of the following or comparable duties:

Preparing and reviewing various legal instruments and documents, such as contracts, leases, licenses, purchases, sales, real estate, etc.;

Acting as agent of the company in its transactions;

Examining material (e.g., advertisements, publications, etc.) for legal implications; advising officials of proposed legislation which might affect the company;

Applying for patents, copyrights, or registration of company's products, processes, devices and trademarks; advising whether to instigate or defend lawsuits;

Conducting pre-trial preparations; defending the company in lawsuits; and

Advising officials on tax matters, Government regulations, and/or corporate rights.

Excluded from this definition are:

Patent work which requires professional training in addition to legal training (typically, a degree in engineering or in a science);

Claims examining, claims investigating or similar work for which professional legal training and bar membership is not essential;

Attorneys, frequently titled "general counsel" (and their immediate full associates or deputies), who serve as company officers or the equivalent and are responsible for participating in the overall management and formulation of policy for the company in addition to directing its legal work. (The duties and responsibilities of such positions exceed level VI as described below.)

Attorney jobs which meet the above definitions are to be classified and coded in accordance with the chart below.

Class	Difficulty level of legal work*	Responsibility level of job*	Experience required
I	This is the entry level. The duties and responsibilities after initial orientation and training are those described in D-1 and R-1.		Completion of law school with an LL.B. or J.D. degree plus admission to the bar.
II	D-1 <u>or</u> D-2	R-2  R-1	Sufficient professional experience (at least 1 year, usually more) at the "D-1" level to assure competence as an attorney
III	<u>or</u> D-2 D-3	R-2 R-1	At least 1 year, usually more, of professional experience at the "D-2" level.

ATTORNEY—Continued

Class	Difficulty level of legal work*	Responsibility level of job*	Experience required
IV	<u>or</u> D-2 D-3	R-3 R-2	Extensive professional experience at the "D-2" or a higher level.
V	D-3	R-3	Extensive professional experience at the "D-3" level.
VI	D-3	R-4	Extensive professional experience at the "D-3" and "R-3" levels.

\* D-1, D-2, D-3, and R-1, R-2, R-3, and R-4 are explained below.

D-1. Legal questions are characterized by: Facts that are well-established; clearly applicable legal precedents; and matters not of substantial importance to the organization. (Usually relatively limited sums of money, e.g., a few thousand dollars, are involved.)

Examples of D-1 work:

(a) Legal investigation, negotiation, and research preparatory to defending the organization in potential or actual lawsuits involving alleged negligence where the facts can be firmly established and there are precedent cases directly applicable to the situation.

(b) Searching case reports, legal documents, periodicals, textbooks, and other legal references, and preparing draft opinions on employee compensation or benefit questions when there is a substantial amount of clearly applicable statutory, regulatory, and case material.

(c) Drawing up contracts and other legal documents in connection with real property transactions requiring the development of detailed information but not involving serious questions regarding titles to property or other major factual or legal issues.

D-2. Legal work is regularly difficult by reason of one or more of the following: The absence of clear and directly applicable legal precedents; the different possible interpretations that can be placed on either the facts, the laws, or the precedents involved; the substantial importance of the legal matters to the organization (e.g., sums as large as \$100,000 are generally directly or indirectly involved); the matter is being strongly pressed or contested in formal proceedings or in negotiations by the individuals, corporations, or Government agencies involved.

Examples of D-2 work:

(a) Advising on the legal implications of advertising representations when the facts supporting the representations and the applicable precedent cases are subject to different interpretations.

(b) Reviewing and advising on the implications of new or revised laws affecting the organization.

(c) Presenting the organization's defense in court in a negligence lawsuit which is strongly pressed by counsel for an organized group.

(d) Providing legal counsel on tax questions complicated by the absence of precedent decisions that are directly applicable to the organization's situation.



D-3. Legal work is typically complex and difficult because of one or more of the following: The questions are unique and require a high order of original and creative legal endeavor for their solution; the questions require extensive research and analysis and the obtaining and evaluating of expert testimony regarding controversial issues in a scientific, financial, corporate organization, engineering, or other highly technical area; the legal matter is of critical importance to the organization and is being vigorously pressed or contested (e.g., sums such as \$1 million or more are generally directly or indirectly involved).

Examples of D-3 work:

(a) Advising on the legal aspects and implications of Federal antitrust laws to projected greatly expanded marketing operations involving joint ventures with several other organizations.

(b) Planning legal strategy and representing a utility company in rate or Government franchise cases involving a geographic area including parts or all of several States.

(c) Preparing and presenting a case before an appellate court where the case is highly important to the future operation of the organization and is vigorously contested by very distinguished (e.g., having a broad regional or national reputation) legal talent.

(d) Serving as the principal counsel to the officers and staff of an insurance company on the legal problems in the sale, underwriting, and administration of group contracts involving nationwide or multistate coverages and laws.

(e) Performing the principal legal work in a nonroutine major revision of the company's charter or in effectuating new major financing steps.

R-1. Responsibility for final action is usually limited to matters covered by legal precedents and in which little deviation from standard practice is involved. Any decisions or actions having a significant bearing on the organization's business are reviewed. (Is given guidance in the initial stages of his assignment (e.g., in planning and organizing legal research and studies). Assignments are then carried out with moderate independence although guidance is generally available and is sought from time-to-time on problem points.)

R-2. Usually works independently in investigating the facts, searching legal precedents, defining the legal and factual issues, drafting the necessary legal documents and developing conclusions and recommendations. Decisions having an important bearing on the organization's business are reviewed. (Receives information from supervisor regarding unusual circumstances or important policy considerations pertaining to a legal problem. If trials are involved, may receive guidance from a supervisor regarding presentation, line of approach, possible line of opposition to be encountered, etc. In the case of non-routine written presentations the final product is reviewed carefully, but primarily for overall soundness of legal reasoning and consistency with organization policy. Some, but not all attorneys, make assignments to one or more lower level attorneys, aids, or clerks.)

R-3. Carries out assignments independently and makes final legal determinations in matters of substantial importance to his organization. Such determinations are subject to review only for consistency with company policy, possible precedent effect, and overall effectiveness. To carry out his assignments he deals regularly with company officers and top level management officials and confers or negotiates regularly with senior attorneys and officials in other companies or in Government agencies on various aspects of his assigned work. (Receives little or no preliminary instruction on legal problems and a minimum of technical legal supervision. May assign and review work of a few attorneys, but this is not a primary responsibility.)

R-4. Carries out assignments which entail independently planning investigations and negotiations on legal problems of the highest importance to his organization and developing completed briefs, opinions, contracts, or other legal products. To carry out his assignments he represents his organization at conferences, hearings, or trials, and personally confers and negotiates with top attorneys and top-ranking officials in private companies or in Government agencies. On various aspects of his assigned work may give advice

directly and personally to corporation officers and top level managers, or may work through the general counsel of the company in advising officers. (Generally receives no preliminary instruction on legal problems. On matters requiring the concentrated efforts of several attorneys or other specialists, is responsible for directing, coordinating and reviewing the work of the attorneys involved.)

OR

As a primary responsibility, directs the work of a staff of attorneys, one, but usually more, of whom regularly perform D-3 legal work. With respect to the work directed, gives advice directly to corporation officers and top managerial officers, or may give such advice through the general counsel. (Receives guidance as to organization policy but no technical supervision or assistance except when he might request advice from, or be briefed on, the overall approach to the most difficult, novel or important legal questions, by the general counsel. Usually reports to the general counsel or his deputy.)

BUYERS

BUYER

Purchases materials, supplies, equipment, and services (e.g., utilities, maintenance, and repair). In some instances items are of types that must be specially designed, produced, or modified by the vendor in accordance with drawings or engineering specifications.

Solicits bids, analyzes quotations received, and selects or recommends supplier. May interview prospective vendors. Purchases items and services at the most favorable price consistent with quality, quantity, specification requirements, and other factors. Prepares or supervises preparation of purchase orders from requisitions. May expedite delivery and visit vendors' offices and plants.

Normally, purchases are unreviewed when they are consistent with past experience, and are in conformance with established rules and policies. Proposed purchase transactions that deviate from the usual or from past experience in terms of prices, quality of items, quantities, etc., or that may set precedents for future purchases, are reviewed by higher authority prior to final action.

In addition to the work described above, some (but not all) buyers direct the work of one or a few clerks who perform routine aspects of the work. As a secondary and subsidiary duty, some buyers may also sell or dispose of surplus, salvage, or used materials, equipment, or supplies.

NOTE: Some buyers are responsible for the purchasing of a variety of items and materials. When the variety includes items and work described at more than one of the following levels, the position should be considered to equal the highest level that characterizes at least a substantial portion of the buyer's time.

Excluded are:

- (a) Buyers of items for direct sale, either wholesale or retail;
- (b) Brokers and dealers buying for clients or for investment purposes;
- (c) Positions that specifically require professional education and qualifications in a physical science or in engineering (e.g., chemist, mechanical engineer);

BUYER—Continued

(d) Buyers who specialize in purchasing a single or a few related items of highly variable quality such as raw cotton or wool, tobacco, cattle, or leather for shoe uppers, etc. Expert personal knowledge of the item is required to judge the relative value of the goods offered, and to decide the quantity, quality, and price of each purchase in terms of its probable effect on the organization's profit and competitive status;

(e) Buyers whose principal responsibility is the supervision of other buyers or the management, direction, or supervision of a purchasing program;

(f) Persons predominantly concerned with contract or subcontract administration;

(g) Persons whose major duties consist of ordering, reordering, or requisitioning items under existing contracts; and

(h) Positions restricted to the clerical functions or to purchase expediting work.

Buyer I

Purchases "off-the-shelf" types of readily available, commonly used materials, supplies, tools, furniture, services, etc.

Transactions usually involve local retailers, wholesalers, jobbers, and manufacturers' sales representatives.

Quantities purchased are generally small amounts, e.g., those available from local sources.

Examples of items purchased include: Common stationery and office supplies; standard types of office furniture and fixtures; standard nuts, bolts, screws; janitorial and common building maintenance supplies; and common building maintenance or common utility services.

Buyer II

Purchases "off-the-shelf" types of standard, generally available technical items, materials, and services.

Transactions usually involve dealing directly with manufacturers, distributors, jobbers, etc.

Quantities of items and materials purchased may be relatively large, particularly in the case of contracts for continuing supply over a period of time.

May be responsible for locating or promoting possible new sources of supply. Usually is expected to keep abreast of market trends, changes in business practices in the assigned markets, new or altered types of materials entering the market, etc.

Examples of items purchased include: Industrial types of handtools; electronic tube and component test instruments; standard electronic parts and components; electric motors; gasoline service station equipment; PBX or other specialized telephone services; and routine purchases of common raw materials such as standard grades and sizes of steel bars, rods, and angles.

Also included at this level are buyers of materials of the types described for buyer I when the quantities purchased are large so that local sources of supply are generally inadequate and the buyer must deal directly with manufacturers on a broader than local scale.

Buyer III

Purchases items, materials, or services of a technical and specialized nature. The items, while of a common general type, are usually made, altered, or customized to meet the user's specific needs and specifications.

## BUYER—Continued

Transactions usually require dealing with manufacturers. The number of potential vendors is likely to be small and price differentials often reflect important factors (quality, delivery dates, and places, etc.) that are difficult to evaluate.

The quantities purchased of any item or service may be large.

Many of the purchases involve one or more of such complications as: Specifications that detail, in technical terms, the required physical, chemical, electrical, or other comparable properties; special testing prior to acceptance; grouping of items for lot bidding and awards; specialized processing, packing, or packaging requirements; export packs; overseas port differentials; etc.

Is expected to keep abreast of market and product developments. May be required to locate new sources of supply.

Some positions may involve assisting in the training or supervising of lower level buyers or clerks.

Examples of items purchased include: Castings; special extruded shapes of normal size and material; special formula paints; electric motors of special shape or speed; special packaging of items; and raw materials in substantial quantities.

### Buyer IV

Purchases highly complex and technical items, materials, or services, usually those specially designed and manufactured exclusively for the purchaser.

Transactions require dealing with manufacturers and often involve persuading potential vendors to undertake the manufacturing of custom designed items according to complex and rigid specifications.

Quantities of items and materials purchased are often large in order to satisfy the requirements for an entire large organization for an extended period of time. Complex schedules of delivery are often involved. Buyer determines appropriate quantities to be contracted for at any given period of time.

Transactions are often complicated by the presence of one or more such matters as inclusion of: Requirements for spare parts, preproduction samples and testing, or technical literature; or patent and royalty provisions.

Keeps abreast of market and product developments. Develops new sources of supply.

In addition to the work described above, a few positions may also require supervision over a few lower level buyers or clerks. (No position is included in this level solely because supervisory duties are performed.)

Examples of items purchased include: Special purpose high cost machine tools and production facilities; raw materials of critically important characteristics or quality; parts, subassemblies, components, etc., specially designed and made to order (e.g., communications equipment for installation in aircraft being manufactured; component assemblies for missiles and rockets; and motor vehicle frames).

### Buyer V <sup>2</sup>

Purchases items or materials, either technical or nontechnical, in such unusually large quantities that individual purchases can affect the overall market price of the commodity. (NOTE: Only the very largest organizations, e.g., those employing more than 10,000 persons, are able to buy in the quantities contemplated in this paragraph. Even in the very large organizations this level of buying is often absent and even when present, is restricted to a very few buyers or is assigned, not to a buyer but to some higher ranking official.)

<sup>2</sup> Insufficient data were obtained for level V to warrant presentation of average salaries.

## BUYER—Continued

Alternatively, may purchase items of extraordinary technical complexity (e. g., missile guidance systems; items that involve the outermost limits of the physical sciences or engineering) or of unusually high individual value (e. g., multiengine jet aircraft; large capacity computers; and high capacity turbine-generators).

Usually is required to identify and consider all possible sources of supply.

The transactions are so large that they often affect a considerable portion of the industry or trade concerned, resulting in complex scheduling and difficulty in negotiating mutually acceptable arrangements.

Frequently is required to develop new sources of supply through persuasion of manufacturers or other concerns to expand or convert plants and facilities.

In addition to the work described above, a few positions may also require supervision over a few lower grade buyers or clerks. (No position is included in this level solely because supervisory duties are performed.)

## PERSONNEL MANAGEMENT

### JOB ANALYST

Performs work involved in collecting, analyzing, and developing occupational data relative to jobs, job qualifications, and worker characteristics as a basis for compensating employees in a fair, equitable, and uniform manner. Performs such duties as studying and analyzing jobs and preparing descriptions of duties and responsibilities and of the physical and mental requirements needed by workers; evaluating jobs and determining appropriate wage or salary levels in accordance with their difficulty and responsibility; independently conducting or participating with representatives of other companies in conducting compensation surveys within a locality or labor market area; assisting in administering merit rating program; reviewing changes in wages and salaries indicated by surveys and recommending changes in pay scales; and auditing individual jobs to check the propriety of evaluations and to apply current job classifications.

#### Job Analyst I

As a trainee, performs work in designated areas and of limited occupational scope. Receives immediate supervision in assignments designed to provide training in the application of established methods and techniques of job analysis. Studies the least difficult jobs and prepares reports for review by a job analyst of higher level.

#### Job Analyst II

Studies, describes, and evaluates jobs in accordance with established procedures. Is usually assigned to the simpler kinds of both wage and salaried jobs in the establishment. Works independently on such assignments but is limited by instructions of his superior and by defined area of assignment.

#### Job Analyst III

Analyzes and evaluates a variety of wage and salaried jobs in accordance with established evaluation systems and procedures. May conduct wage surveys within the locality or participate in conducting surveys of broad compensation areas. May assist in developing survey methods and plans. Receives general supervision but responsibility for final action is limited.

## JOB ANALYST—Continued

### Job Analyst IV

Analyzes and evaluates a variety of jobs in accordance with established evaluation systems and procedures, and is given assignment which regularly includes responsibility for the more difficult kinds of jobs. ("More difficult" means jobs which consist of hard-to-understand work processes; e.g., professional, scientific, administrative, or technical; or jobs in new or emerging occupational fields; or jobs which are being established as part of the creation of new organizations; or where other special considerations of these types apply.) Receives general supervision, but responsibility for final action is limited. May participate in the development and installation of evaluation or compensation systems, which may include those for merit rating programs. May plan survey methods and conduct or direct wage surveys within a broad compensation area.

## DIRECTOR OF PERSONNEL

Directs a personnel management program for a company or a segment of a company. Serves top management officials of the organization as the source of advice and assistance on personnel management matters and problems generally; is typically consulted on the personnel implications of planned changes in management policy or program, the effects on the organization of economic or market trends, product or production method changes, etc.; represents management in contacts with other companies, trade associations, government agencies, etc., dealing primarily with personnel management matters.

Typically the director of personnel for a company reports to a company officer in charge of industrial relations and personnel management activities or an officer of similar level. Below the company level the director of personnel typically reports to a company officer or a high management official who has responsibility for the operation of a plant, establishment, or other segment of the company.

For a job to be covered by this definition, the personnel management program must include responsibility for all three of the following functions:

(1) Administering a job evaluation system; i.e., a system in which there are established procedures by which jobs are analyzed and evaluated on the basis of their duties, responsibilities, and qualification requirements in order to provide a foundation for equitable compensation. Typically, such a system includes the use of one or more sets of job evaluation factors and the preparation of formal job descriptions. It may also include such related functions as wage and salary surveys or merit rating system administration. The job evaluation system(s) does not necessarily cover all jobs in the organization, but does cover a substantial portion of the organization.

(2) Employment and placement functions; i.e., recruiting actively for at least some kinds of workers through a variety of sources (e.g., schools or colleges, employment agencies, professional societies, etc.); evaluating applicants against demands of particular jobs by use of such techniques as job analysis to determine requirements, interviews, written tests of aptitude, knowledge, skill, reference checks, experience evaluations, etc.; recommending selections and job placements to management, etc.

(3) Employee relations and services functions; i.e., functions designed to maintain employees' morale and productivity at a high level (for example administering a formal or informal grievance procedure; identifying and recommending solutions for personnel problems such as absenteeism, high turnover, low productivity, etc.; administration of beneficial suggestions system, retirement, pension, or insurance plans, merit rating system, etc.; overseeing cafeteria operations, recreational programs, industrial health and safety programs, etc.).

DIRECTOR OF PERSONNEL—Continued

In addition, positions covered by this definition may, but do not necessarily, include responsibilities in the following areas:

- a. Employee training and development
- b. Labor relations activities which are confined mainly to the administration, interpretation, and application of those aspects of labor union contracts that are essentially of the type described under (3) above. May also participate in bargaining of a subordinate nature, e.g., to negotiate detailed settlement of such matters as specific rates, job classifications, work rules, hiring or layoff procedures, etc., within the broad terms of a general agreement reached at higher levels, or to supply advice and information on technical points to the company's principal representative.

Excluded are positions in which responsibility for actual contract negotiation with labor unions as the principal company representative is a significant aspect of the job, i.e., a responsibility which serves as a primary basis for qualification requirements and compensation.

Directors of personnel jobs which meet the above definition are classified by level<sup>3</sup> of work in accordance with the following tabulation:

Number of employees in work force serviced	"Operations level" personnel program <sup>1</sup>		"Development level" personnel program <sup>2</sup>	
	"Type A" organization serviced <sup>3</sup>	"Type B" organization serviced <sup>4</sup>	"Type A" organization serviced <sup>3</sup>	"Type B" organization serviced <sup>4</sup>
250-750 -----	I	II	II	III
1,000-5,000 -----	II	III	III	IV
6,000-12,000 -----	III	IV	IV	V
15,000-25,000 -----	IV	V	V	

<sup>1</sup> "Operations level" personnel program—director of personnel servicing an organizational segment (e.g., a plant) of a company, where the basic personnel program policies, plans, objectives, etc., are established at company headquarters or at some other higher level between the plant and the company headquarters level. The personnel director's responsibility is to put these into operation at the local level, in such a manner as to most effectively serve the local management needs.

<sup>2</sup> "Development level" personnel program—either:

(a) Director of personnel servicing an entire company (with or without subordinate establishments) where the personnel director plays an important role in establishment of basic personnel policies, plans, objectives, etc., for the company, subject to policy direction and control from company officers, or

(b) Director of personnel servicing an intermediate organization below the company level, e.g., a division or a subsidiary, to which a relatively complete delegation of personnel program planning and development responsibility is made. In this situation only basic policy direction is given by the parent company and local officers. The director of personnel has essentially the same degree of latitude and responsibility for establishment of basic personnel policies, plans, objectives, etc., as described above in paragraph (a).

<sup>3</sup> "Type A" - organization serviced—most jobs serviced do not present particularly difficult or unusual recruitment, job evaluation, or training problems because the jobs consist of relatively easy-to-understand work processes, and an adequate labor supply is available. These conditions are most likely to be found in organizations in which the work force and organizational structure are relatively stable.

<sup>4</sup> "Type B" - organization serviced—a substantial number of jobs present difficult recruitment, job evaluation, or training problems because the jobs: consist of hard-to-understand work processes (e.g., professional, scientific, administrative, or technical); have hard-to-match skill requirements; are in new or emerging occupations; or are extremely hard to fill. These conditions are most likely to be found in organizations in which the work force, organizational structure, work processes or functions, etc., are complicated or unstable.

NOTE: There are gaps between different degrees of all three elements used to determine job level matches. These gaps have been provided purposely to allow room for judgment in getting the best overall job level match for each job. Thus, a job which services a work force of 850 employees should be matched with level II if it is a personnel program operations level job where the nature of the organization serviced seems to fall slightly below the definition for the type B degree. However, the same job should be matched with level I if the nature of the organization serviced clearly falls well within the definition for the type A degree.

<sup>3</sup> Insufficient data were obtained for level V to warrant presentation of average salaries.

## CHEMISTS AND ENGINEERS

### CHEMIST

Performs professional work in research, development, interpretation, and analysis to determine the composition, molecular structure, and properties of substances; to develop or investigate new materials and processes; and to investigate the transformation which substances undergo. Work typically requires a B.S. degree in chemistry or equivalent in appropriate and substantial college level study of chemistry plus experience.

#### Chemist I

General characteristics. This is the entry level of professional work requiring a bachelor's degree in chemistry and no experience, or the equivalent (to a degree) in appropriate education and experience. Performs assignments designed to develop professional capabilities and to provide experience in the application of training in chemistry as it relates to the company's programs. May also receive formal classroom or seminar type training. (Terminal positions are excluded.)

Direction received. Works under close supervision. Receives specific and detailed instructions as to required tasks and results expected. Work is checked during progress, and is reviewed for accuracy upon completion.

Typical duties and responsibilities. Performs a variety of routine tasks that are planned to provide experience and familiarization with the chemistry staff, methods, practices and programs of the company. The work includes a variety of routine qualitative and quantitative analyses; physical tests to determine properties such as viscosity, tensile strength, and melting point; and assisting more experienced chemists to gain additional knowledge through personal observation and discussion.

Responsibility for the direction of others. Usually none.

#### Chemist II

General characteristics. At this continuing developmental level, performs routine chemical work requiring selection and application of general and specialized methods, techniques, and instruments commonly used in the laboratory and the ability to carry out instructions when less common or proposed methods or procedures are necessary. Requires work experience acquired in an entry level position, or appropriate graduate level study. For training and developmental purposes, assignments may include some work that is typical of a higher level. (Terminal positions are excluded.)

Direction received. Supervisor establishes the nature and extent of analysis required, specifies methods and criteria on new types of assignments, and reviews work for thoroughness of application of methods and accuracy of results.

Typical duties and responsibilities. Carries out a wide variety of standardized methods, tests, and procedures. In accordance with specific instructions may carry out proposed and less common ones. Is expected to detect problems in using standardized procedures because of the condition of the sample, difficulties with the equipment, etc. Recommends modifications of procedures, e.g., extending or curtailing the analysis or using alternate procedures, based on his knowledge of the problem and pertinent available literature. Conducts specified phases of research projects as an assistant to an experienced chemist.

Responsibility for the direction of others. May be assisted by a few aids or technicians.

#### Chemist III

General characteristics. Performs a broad range of chemical tests and procedures utilized in the laboratory, using judgment in the independent evaluation, selection, and adaptation of standard methods and techniques. May carry through a complete series of tests on a product in its different process stages. Some assignments require a specialized knowledge of one or two common categories of related substances. Performance at this level requires developmental experience in a professional position, or equivalent graduate level education.



## CHEMIST—Continued

Direction received. On routine work, supervision is very general. Assistance is furnished on unusual problems and work is reviewed for application of sound professional judgment.

Typical duties and responsibilities. In accordance with instructions as to the nature of the problem, selects standard methods, tests or procedures; when necessary, develops or works out alternate or modified methods with supervisor's concurrence. Assists in research by analyzing samples or testing new procedures that require specialized training because (a) standard methods are inapplicable, (b) analytical findings must be interpreted in terms of compliance or noncompliance with standards, or (c) specialized and advanced equipment and techniques must be adapted.

Responsibility for the direction of others. May supervise or coordinate the work of a few technicians or aids, and be assisted by lower level chemists.

### Chemist IV

General characteristics. As a fully competent chemist in all conventional aspects of the subject-matter or the functional area of the assignments, plans and conducts work requiring (a) mastery of specialized techniques or ingenuity in selecting and evaluating approaches to unforeseen or novel problems, and (b) ability to apply a research approach to the solution of a wide variety of problems and to assimilate the details and significance of chemical and physical analyses, procedures, and tests. Requires sufficient professional experience to assure competence as a fully trained worker; or, for positions primarily of a research nature, completion of all requirements for a doctoral degree may be substituted for experience.

Direction received. Independently performs most assignments with instructions as to the general results expected. Receives technical guidance on unusual or complex problems and supervisory approval on proposed plans for projects.

Typical duties and responsibilities. Conducts laboratory assignments requiring the determination and evaluation of alternative procedures and the sequence of performing them. Performs complex, exacting, or unusual analytical assignments requiring specialized knowledge of techniques or products. Interprets results, prepares reports, and may provide technical advice in his specialized area.

Responsibility for the direction of others. May supervise a small staff of chemists and technicians.

### Chemist V

General characteristics. Participates in planning laboratory programs on the basis of specialized knowledge of problems and methods and probable value of results. May serve as an expert in a narrow specialty (e. g., class of chemical compounds, or a class of products), making recommendations and conclusions which serve as the basis for undertaking or rejecting important projects. Development of the knowledge and expertise required for this level of work usually reflects progressive experience through chemist IV.

Direction received. Supervision and guidance relates largely to overall objectives, critical issues, new concepts, and policy matters. Consults with supervisor concerning unusual problems and developments.

Typical duties and responsibilities. (One or both of the following.)

(1) In a supervisory capacity plans, organizes, and directs assigned laboratory programs. Independently defines scope and critical elements of the projects and selects approaches to be taken. A substantial portion of the work supervised is comparable to that described for chemist IV.

(2) As individual researcher or worker, carries out projects requiring development of new or highly modified scientific techniques and procedures, extensive knowledge of his specialty, and knowledge of related scientific fields.

CHEMIST—Continued

Responsibility for the direction of others. Supervises, coordinates, and reviews the work of a small staff of chemists and technicians engaged in varied research and development projects, or a larger group performing routine analytical work. Estimates manpower needs and schedules and assigns work to meet completion date. Or, as individual researcher or worker, may be assisted on projects by other chemists or technicians.

Chemist VI

General characteristics. Performs work requiring leadership and expert knowledge in a specialized field, product, or process. Formulates and conducts a systematic attack on a problem area of considerable scope and complexity which must be approached through a series of complete and conceptually related studies, or a number of projects of lesser scope. The problems are complex because they are difficult to define and require unconventional or novel approaches or have other difficult features. Maintains liaison with individuals and units within and outside his organization with responsibility for acting independently on technical matters pertaining to his field. Work at this level usually requires extensive progressive experience including work comparable to chemist V.

Direction received. Supervision received is essentially administrative, with assignments given in terms of broad general objectives and limits.

Typical duties and responsibilities. (One or both of the following.)

(1) In a supervisory capacity (a) plans, develops, coordinates, and directs a number of large and important projects or a project of major scope and importance, or (b) is responsible for the entire chemical program of a company, when the program is of limited complexity and scope. Activities under his leadership are of a scope that they require a few (3 to 5) subordinate supervisors or team leaders with at least one in a position comparable to level V.

(2) As individual researcher or worker determines, conceives, plans, and conducts projects of major importance to the company. Applies a high degree of originality and ingenuity in adapting, extending, and synthesizing existing theory, principles, and techniques into original combinations and configurations. May serve as a consultant to other chemists in his specialty.

Responsibility for the direction of others. Plans, organizes, and supervises the work of a staff of chemists and technicians. Evaluates progress of the staff and results obtained, and recommends major changes to achieve overall objectives. Or, as individual worker or researcher may be assisted on individual projects by other chemists or technicians.

Chemist VII

General characteristics. Makes decisions and recommendations that are recognized as authoritative and have an important impact on extensive chemical activities. Initiates and maintains extensive contacts with key chemists and officials of other organizations and companies, requiring skill in persuasion and negotiation of critical issues. At this level individuals will have demonstrated creativity, foresight, and mature judgment in anticipating and solving unprecedented chemical problems, determining program objectives and requirements, organizing programs and projects, and developing standards and guides for diverse chemical activities.

Direction received. Receives general administrative direction.

Typical duties and responsibilities. (One or both of the following.)

(1) In a supervisory capacity is responsible for (a) an important segment of a chemical program of a company with extensive and diversified scientific requirements, or (b) the entire chemical program of a company where the program is more limited in scope. The overall chemical program contains critical problems the solution of which requires major technological advances and opens the way for extensive related development. Makes authoritative technical recommendations concerning the scientific

## CHEMIST—Continued

objectives and levels of work which will be most profitable in the light of company requirements and scientific and industrial trends and developments. Recommends facilities, personnel, and funds required.

(2) As individual researcher and consultant selects problems for research to further the company's objectives. Conceives and plans investigations in which the phenomena and principles are not adequately understood, and where few or contradictory scientific precedents or results are available for reference. Outstanding creativity and mature judgment are required to devise hypotheses and techniques of experimentation and to interpret results. As a leader and authority in his company, in a broad area of specialization, or in a narrow but intensely specialized one, advises the head of a large laboratory or company officials on complex aspects of extremely broad and important programs. Has responsibility for exploring, evaluating, and justifying proposed and current programs and projects and furnishing advice on unusually complex and novel problems in the specialty field. Typically will have contributed innovations (e.g., techniques, products, procedures) which are regarded as significant advances in the field.

Responsibility for the direction of others. Directs several subordinate supervisors or team leaders, some of whom are in positions comparable to chemist VI; or, as individual researcher and consultant, may be assisted on individual projects by other chemists and technicians.

### Chemist VIII

General characteristics. Makes decisions and recommendations that are authoritative and have a far-reaching impact on extensive chemical and related activities of the company. Negotiates critical and controversial issues with top level chemists and officers of other organizations and companies. Individuals at this level have demonstrated a high degree of creativity, foresight, and mature judgment in planning, organizing, and guiding extensive chemical programs and activities of outstanding novelty and importance.

Direction received. Receives general administrative direction.

Typical duties and responsibilities. (One or both of the following.)

(1) In a supervisory capacity is responsible for (a) the entire chemical program of a company which is of moderate scope, or (b) an important segment of a chemical program of a company with very extensive and highly diversified scientific requirements, where programs are of such complexity and scope that they are of critical importance to overall operations and include problems of extraordinary difficulty that have resisted solution. Decides the kind and extent of chemical programs needed to accomplish the objectives of the company, for choosing the scientific approaches, for planning and organizing facilities and programs, and for interpreting results.

(2) As individual researcher and consultant formulates and guides the attack on problems of exceptional difficulty and marked importance to the company and/or industry. Problems are characterized by the lack of scientific precedents and source materials, or the lack of success of prior research and analysis so that their solution would represent an advance of great significance and importance. Performs advisory and consulting work for the company as a recognized authority for broad program areas of considerable novelty and importance. Has made contributions such as new products or techniques, development of processes, etc., which are regarded as major advances in the field.

Responsibility for the direction of others. Supervises several subordinate supervisors or team leaders some of whose positions are comparable to chemist VII or individual researchers some of whose positions are comparable to chemist VII and sometimes chemist VIII. As an individual researcher and consultant may be assisted on individual projects by other chemists or technicians.

## CHEMIST—Continued

NOTE: Individuals in charge of a company's chemical program may match any of several of the survey job levels, depending on the size and complexity of chemical programs. Excluded from level VIII are chemists in charge of programs so extensive and complex (e.g., consisting of highly diversified or unusually novel products and procedures) that one or more subordinate supervisory chemists are performing at level VIII. Also excluded from level VIII are individual researchers and consultants who are recognized as national and/or international authorities and scientific leaders in very broad areas of scientific interest and investigation.

## ENGINEER

Performs professional work in research, development, design, testing, analysis, production, construction, maintenance, operation, planning, survey, estimating, application, or standardization of engineering facilities, systems, structures, processes, equipment devices, or materials requiring knowledge of the science and art by which materials, natural resources, and power are made useful. Work typically requires a B.S. degree in engineering or the equivalent in combined education and experience. (Excluded are: Safety engineers, industrial engineers, quality control engineers, sales engineers, and engineers whose primary responsibility is to be in charge of nonprofessional maintenance work.)

### Engineer I

General characteristics. This is the entry level of professional work requiring a bachelor's degree in engineering and no experience, or the equivalent (to a degree) in appropriate education and experience. Performs assignments designed to develop professional work knowledges and abilities. May also receive formal classroom or seminar type training. (Terminal positions are excluded.)

Direction received. Works under close supervision. Receives specific and detailed instructions as to required tasks and results expected. Work is checked during progress, and is reviewed for accuracy upon completion.

Typical duties and responsibilities. Performs a variety of routine tasks that are planned to provide experience and familiarization with the engineering staff, methods, practices, and programs of the company.

Responsibility for the direction of others. Usually none.

### Engineer II

General characteristics. At this continuing developmental level, performs routine engineering work requiring application of standard techniques, procedures, and criteria in carrying out a sequence of related engineering tasks. Limited exercise of judgment is required on details of work and in making preliminary selections and adaptations of engineering alternatives. Requires work experience acquired in an entry level position, or appropriate graduate level study. For training and developmental purposes, assignments may include some work that is typical of a higher level. (Terminal positions are excluded.)

Direction received. Supervisor screens assignments for unusual or difficult problems and selects techniques and procedures to be applied on nonroutine work. Receives close supervision on new aspects of assignments.

Typical duties and responsibilities. Using prescribed methods, performs specific and limited portions of a broader assignment of an experienced engineer. Applies standard practices and techniques in specific situations, adjusts and correlates data, recognizes discrepancies in results, and follows operations through a series of related detailed steps or processes.

Responsibility for the direction of others. May be assisted by a few aids or technicians.

ENGINEER—Continued

Engineer III

General characteristics. Independently evaluates, selects, and applies standard engineering techniques, procedures, and criteria, using judgment in making minor adaptations and modifications. Assignments have clear and specified objectives and require the investigation of a limited number of variables. Performance at this level requires developmental experience in a professional position, or equivalent graduate level education.

Direction received. Receives instructions on specific assignment objectives, complex features, and possible solutions. Assistance is furnished on unusual problems and work is reviewed for application of sound professional judgment.

Typical duties and responsibilities. Performs work which involves conventional types of plans, investigations, surveys, structures, or equipment with relatively few complex features for which there are precedents. Assignments usually include one or more of the following: Equipment design and development, test of materials, preparation of specifications, process study, research investigations, report preparation, and other activities of limited scope requiring knowledge of principles and techniques commonly employed in the specific narrow area of assignments.

Responsibility for the direction of others. May supervise or coordinate the work of draftsmen, technicians, and others who assist in specific assignments.

Engineer IV

General characteristics. As a fully competent engineer in all conventional aspects of the subject-matter or the functional area of the assignments, plans and conducts work requiring judgment in the independent evaluation, selection, and substantial adaptation and modification of standard techniques, procedures, and criteria. Devises new approaches to problems encountered. Requires sufficient professional experience to assure competence as a fully trained worker; or, for positions primarily of a research nature, completion of all requirements for a doctoral degree may be substituted for experience.

Direction received. Independently performs most assignments with instructions as to the general results expected. Receives technical guidance on unusual or complex problems and supervisory approval on proposed plans for projects.

Typical duties and responsibilities. Plans, schedules, conducts, or coordinates detailed phases of the engineering work in a part of a major project or in a total project of moderate scope. Performs work which involves conventional engineering practice but may include a variety of complex features such as conflicting design requirements, unsuitability of standard materials, and difficult coordination requirements. Work requires a broad knowledge of precedents in the specialty area and a good knowledge of principles and practices of related specialties.

Responsibility for the direction of others. May supervise a few engineers or technicians on assigned work.

Engineer V

General characteristics. Applies intensive and diversified knowledge of engineering principles and practices in broad areas of assignments and related fields. Makes decisions independently on engineering problems and methods, and represents the organization in conferences to resolve important questions and to plan and coordinate work. Requires the use of advanced techniques and the modification and extension of theories, precepts and practices of his field and related sciences and disciplines. The knowledge and expertise required for this level of work usually results from progressive experience, including work comparable to engineer IV.

Direction received. Supervision and guidance relates largely to overall objectives, critical issues, new concepts, and policy matters. Consults with supervisor concerning unusual problems and developments.

ENGINEER—Continued

Typical duties and responsibilities. (One or more of the following.)

(1) In a supervisory capacity plans, develops, coordinates, and directs a large and important engineering project or a number of small projects with many complex features. A substantial portion of the work supervised is comparable to that described for engineer IV.

(2) As individual researcher or worker carries out complex or novel assignments requiring the development of new or improved techniques and procedures. Work is expected to result in the development of new or refined equipment, materials, processes, products, and/or scientific methods.

(3) As staff specialist develops and evaluates plans and criteria for a variety of projects and activities to be carried out by others. Assesses the feasibility and soundness of proposed engineering evaluation tests, products, or equipment when necessary data are insufficient or confirmation by testing is advisable. Usually performs as a staff advisor and consultant as to a technical specialty, a type of facility or equipment, or a program function.

Responsibility for the direction of others. Supervises, coordinates, and reviews the work of a small staff of engineers and technicians; estimates manpower needs and schedules and assigns work to meet completion date. Or, as individual researcher or staff specialist may be assisted on projects by other engineers or technicians.

Engineer VI

General characteristics. Has full technical responsibility for interpreting, organizing, executing, and coordinating assignments. Plans and develops engineering projects concerned with unique or controversial problems which have an important effect on major company programs. This involves exploration of subject area, definition of scope and selection of problems for investigation, and development of novel concepts and approaches. Maintains liaison with individuals and units within or outside his organization with responsibility for acting independently on technical matters pertaining to his field. Work at this level usually requires extensive progressive experience including work comparable to engineer V.

Direction received. Supervision received is essentially administrative, with assignments given in terms of broad general objectives and limits.

Typical duties and responsibilities. (One or more of the following.)

(1) In a supervisory capacity (a) plans, develops, coordinates, and directs a number of large and important projects or a project of major scope and importance, or (b) is responsible for the entire engineering program of a company when the program is of limited complexity and scope. The extent of his responsibilities generally require a few (3 to 5) subordinate supervisors or team leaders with at least one in a position comparable to level V.

(2) As individual researcher or worker conceives, plans, and conducts research in problem areas of considerable scope and complexity. The problems must be approached through a series of complete and conceptually related studies, are difficult to define, require unconventional or novel approaches; and require sophisticated research techniques. Available guides and precedents contain critical gaps, are only partially related to the problem, or may be largely lacking due to the novel character of the project. At this level, the individual researcher generally will have contributed inventions, new designs, or techniques which are of material significance in the solution of important problems.

(3) As a staff specialist serves as the technical specialist for the organization (division or company) in the application of advanced theories, concepts, principles, and processes for an assigned area of responsibility (i. e., subject matter, function, type of facility or equipment, or product). Keeps abreast of new scientific methods and developments affecting his organization for the purpose of recommending changes in emphasis of programs or new programs warranted by such developments.

ENGINEER—Continued

Responsibility for the direction of others. Plans, organizes, and supervises the work of a staff of engineers and technicians. Evaluates progress of the staff and results obtained, and recommends major changes to achieve overall objectives. Or, as individual researcher or staff specialist may be assisted on individual projects by other engineers or technicians.

Engineer VII

General characteristics. Makes decisions and recommendations that are recognized as authoritative and have an important impact on extensive engineering activities. Initiates and maintains extensive contacts with key engineers and officials of other organizations and companies, requiring skill in persuasion and negotiation of critical issues. At this level individuals will have demonstrated creativity, foresight, and mature engineering judgment in anticipating and solving unprecedented engineering problems, determining program objectives and requirements, organizing programs and projects, and developing standards and guides for diverse engineering activities.

Direction received. Receives general administrative direction.

Typical duties and responsibilities. (One or both of the following.)

(1) In a supervisory capacity is responsible for (a) an important segment of the engineering program of a company with extensive and diversified engineering requirements, or (b) the entire engineering program of a company when it is more limited in scope. The overall engineering program contains critical problems the solution of which requires major technological advances and opens the way for extensive related development. The extent of his responsibilities generally require several subordinate organizational segments or teams. Recommends facilities, personnel, and funds required to carry out programs which are directly related with and directed toward fulfillment of overall company objectives.

(2) As individual researcher and consultant is a recognized leader and authority in his company in a broad area of specialization or in a narrow but intensely specialized field. Selects research problems to further the company's objectives. Conceives and plans investigations of broad areas of considerable novelty and importance for which engineering precedents are lacking in areas critical to the overall engineering program. Is consulted extensively by associates and others with a high degree of reliance placed on his scientific interpretations and advice. Typically, will have contributed inventions, new designs, or techniques which are regarded as major advances in the field.

Responsibility for the direction of others. Directs several subordinate supervisors or team leaders, some of whom are in positions comparable to engineer VI; or, as individual researcher and consultant, may be assisted on individual projects by other engineers and technicians.

Engineer VIII

General characteristics. Makes decisions and recommendations that are recognized as authoritative and have a far-reaching impact on extensive engineering and related activities of the company. Negotiates critical and controversial issues with top level engineers and officers of other organizations and companies. Individuals at this level demonstrate a high degree of creativity, foresight, and mature judgment in planning, organizing, and guiding extensive engineering programs and activities of outstanding novelty and importance.

Direction received. Receives general administrative direction.

Typical duties and responsibilities. (One or both of the following.)

(1) In a supervisory capacity is responsible for (a) an important segment of a very extensive and highly diversified engineering program of a company, or (b) the entire engineering program of a company when the program is of moderate scope. The programs are of such complexity and scope that they are of critical importance to overall objectives, include problems of extraordinary difficulty that often have resisted solution, and consist of several segments requiring subordinate supervisors. Is responsible for

## ENGINEER—Continued

deciding the kind and extent of engineering and related programs needed to accomplish the objectives of the company, for choosing the scientific approaches, for planning and organizing facilities and programs, and for interpreting results.

(2) As individual researcher and consultant formulates and guides the attack on problems of exceptional difficulty and marked importance to the company or industry. Problems are characterized by their lack of scientific precedents and source material, or lack of success of prior research and analysis so that their solution would represent an advance of great significance and importance. Performs advisory and consulting work for the company as a recognized authority for broad program areas or in an intensely specialized area of considerable novelty and importance.

Responsibility for the direction of others. Supervises several subordinate supervisors or team leaders some of whose positions are comparable to engineer VII, or individual researchers some of whose positions are comparable to engineer VII and sometimes engineer VIII. As an individual researcher and consultant may be assisted on individual projects by other engineers or technicians.

NOTE: Individuals in charge of a company's engineering program may match any of several of the survey job levels depending on the size and complexity of engineering programs. Excluded from level VIII are engineers in charge of programs so extensive and complex (e.g., consisting of research and development on a variety of complex products or systems with numerous novel components) that one or more subordinate supervisory engineers are performing at level VIII. Also excluded from level VIII are individual researchers and consultants who are recognized as national and/or international authorities and scientific leaders in very broad areas of scientific interest and investigation.

## TECHNICAL SUPPORT

### ENGINEERING TECHNICIAN

To be covered by these definitions, employees must meet all of the following criteria;

- (1) Provides semiprofessional technical support for engineers working in such areas as research, design, development, testing or manufacturing process improvement.
- (2) Work pertains to electrical, electronic, or mechanical components or equipment.
- (3) Required to have some knowledge of science or engineering.

(Excludes production or maintenance workers, quality control testers, craftsmen, draftsmen, designers, and engineers.)

#### Engineering Technician I

Performs simple routine tasks under close supervision or from detailed procedures. Work is checked in process or on completion. Performs at this level, one or a combination of such typical duties as:

Assembles or installs equipment or parts requiring simple wiring, soldering, or connecting.

Performs simple or routine tasks or tests such as tensile or hardness tests; operates, and adjusts simple test equipment; records test data.

Gathers and maintains specified records of engineering data such as tests, and drawings; performs computations by substituting numbers in specified formulas; plots data and draws simple curves and graphs.



## ENGINEERING TECHNICIAN—Continued

### Engineering Technician II

Performs standardized or prescribed assignments, involving a sequence of related operations. Follows standard work methods or explicit instructions; technical adequacy of routine work is reviewed on completion; nonroutine work may also be reviewed in process. Performs at this level, one or a combination of such typical duties as:

Assembles or constructs simple or standard equipment or parts. May service or repair simple instruments or equipment.

Conducts a variety of standardized tests; may prepare test specimens; sets up and operates standard test equipment; records test data.

Extracts engineering data from various prescribed sources; processes the data following well defined methods; presents the data in prescribed form.

### Engineering Technician III

Performs assignments that are not completely standardized or prescribed. Selects or adapts standard procedures or equipment. Receives initial instructions, equipment requirements and advice from supervisor or engineer; technical adequacy of completed work is checked. Performs at this level, one or a combination of such typical duties as:

Constructs components, subunits or simple models or adapts standard equipment. May troubleshoot and correct malfunctions.

Conducts various tests or experiments which may require minor modifications in test setups or procedures; selects, sets up and operates standard test equipment and records test data.

Extracts and compiles a variety of engineering data; processes or computes data using specified formulas and procedures. Performs routine analysis to check applicability, accuracy, and reasonableness of data.

### Engineering Technician IV

Performs nonroutine assignments of substantial variety and complexity. Receives objectives and technical advice from supervisor or engineer; work is reviewed for technical adequacy. May be assisted by lower level technicians. Performs at this level, one or a combination of such typical duties as:

Works on limited segment of development project; constructs experimental or prototype models to meet engineering requirements; conducts tests or experiments; records and evaluates data and reports findings.

Conducts tests or experiments requiring selection and adaptation or modification of test equipment and test procedures; sets up and operates equipment; records data; analyzes data and prepares test reports.

Compiles and computes a variety of engineering data; may analyze test and design data; develops or prepares schematics, designs, specifications, parts lists or makes recommendations regarding these items. May review designs or specifications for adequacy.

### Engineering Technician V

Performs nonroutine and complex assignments involving responsibility for planning and conducting a complete project of relatively limited scope or a portion of a larger and more diverse project. Selects and adapts plans, techniques, designs or layouts. May coordinate portions of overall assignment; reviews, analyzes and integrates the technical work

## ENGINEERING TECHNICIAN—Continued

of others. Supervisor or professional engineer outlines objectives, requirements and design approaches; completed work is reviewed for technical adequacy and satisfaction of requirements. May be assisted by lower level technicians. Performs at this level, one or a combination of such typical duties as:

Designs, develops and constructs major units, devices or equipment; conducts tests or experiments; analyzes results and redesigns or modifies equipment to improve performance; reports results.

Plans or assists in planning tests to evaluate equipment performance. Determines test requirements, equipment modification and test procedures; conducts tests, analyzes and evaluates data and prepares reports on findings and recommendations.

Reviews and analyzes a variety of engineering data to determine requirements to meet engineering objectives; may calculate design data; prepares layouts, detailed specifications, parts lists, estimates, procedures, etc. May check and analyze drawings or equipment to determine adequacy of drawings and design.

## DRAFTSMEN

### Draftsman-tracer

Copies plans and drawings prepared by others by placing tracing cloth or paper over drawings and tracing with pen or pencil. (Does not include tracing limited to plans primarily consisting of straight lines and a large scale not requiring close delineation.)

and/or

Prepares simple or repetitive drawings of easily visualized items. Work is closely supervised during progress.

### Draftsman I

Prepares detail drawings of single units or parts for engineering, construction, manufacturing, or repair purposes. Types of drawings prepared include isometric projections (depicting three dimensions in accurate scale) and sectional views to clarify positioning of components and convey needed information. Consolidates details from a number of sources and adjusts or transposes scale as required.

### Draftsman II

Performs nonroutine and complex drafting assignments that require the application of most of the standardized drawing techniques regularly used. Duties typically involve such work as: Prepares working drawings of subassemblies with irregular shapes, multiple functions, and precise positional relationships between components; prepares architectural drawings for construction of a building including detail drawings of foundations, wall sections, floor plans, and roof. Uses accepted formulas and manuals in making necessary computations to determine quantities of materials to be used, load capacities, strengths, stresses, etc. Receives initial instructions, requirements, and advice from supervisor. Completed work is checked for technical adequacy.

### Draftsman III

Plans the graphic presentation of complex items having distinctive design features that differ significantly from established drafting precedents. Works in close support with the design originator, and may recommend minor design changes. Analyzes the effect of each change on the details of form, function, and positional relationships of components and parts. Works with a minimum of supervisory assistance. Completed work is reviewed by design originator for consistency with prior engineering determinations. May either prepare drawings, or direct their preparation by lower level draftsmen.

CLERICAL SUPERVISORY

KEYPUNCH SUPERVISOR

Supervises three or more keypunch operators who keypunch or verify cards or tape for computer or tabulating machine processing. May also, as an incidental responsibility, supervise the operation of other types of punching machines such as reproducers or gang punches.

Excluded are: (a) Positions also responsible for supervising the operation of equipment such as computers, tabulating machines, or other kinds of office machines; (b) positions responsible for supervising clerical work not directly related to the keypunch function; and (c) working supervisors, group leaders, or other overseers with more limited supervisory responsibility than is described below.

Keypunch supervisory positions are classified in five levels (I through V) on the basis of combinations of three elements—level and kind of supervisory responsibility, difficulty of keypunch work supervised, and number of employees supervised. In the following table, two levels of supervision are described and each is followed by a brief chart that shows the level of keypunch supervisor for each combination of the other two elements.

Level and Kind of Supervisory Responsibility

Lower		Upper		
Is responsible for the day-to-day operations and flow of work when the organization of the work, assignment of employees to positions, the job types and levels, instructions and procedures, etc., are prescribed by higher authority. Within this prescribed framework, assigns work to individual employees; instructs employees in specific tasks and procedures; insures work meets established standards of quality; checks attendance; keeps production records; provides information to higher levels for use in budgeting, planning of personnel changes, adjusting to variations in the workload, etc., reports problems to a higher level supervisor. (Exclude positions in which keypunching rather than supervisory responsibility is the most significant function.)		In addition to being responsible for the functions of the lower level of supervisory responsibility, plans and establishes the organization and flow of work; plans changes to meet both short and long-term workload trends and changes; selects employees and assigns them to positions; assigns and reviews work of subordinates, initiates recommendations or formal actions such as requests for staff, job evaluation actions, promotions, etc.; approves absences and vacation schedules; recommends disciplinary actions; in some positions, assists programmers, project planners, or other technical specialists in designing card layouts and detailed punching instructions.		
Number of employees supervised	Difficulty of keypunch work supervised		Difficulty of keypunch work supervised	
	Less difficult <sup>1</sup>	More difficult <sup>2</sup>	Less difficult <sup>1</sup>	More difficult <sup>2</sup>
	Level of keypunch supervisor		Level of keypunch supervisor	
3-15	I	II	II	III
20-40	II	III	III	IV
50 or more	III	IV	IV	V

<sup>1</sup> Less difficult keypunch work - Work is routine and repetitive. Under close supervision or following specific procedures or instructions, works from various standardized source documents which have been coded, follows specified procedures which have been prescribed in detail and require little or no selecting, coding, or interpreting of data to be recorded. Refers to supervisor problems arising from erroneous items or codes or missing information. (This level is the same as the BLS Class B Keypunch Operator.)

<sup>2</sup> More difficult keypunch work - Work requires the application of experience and judgment in selecting procedures to be followed and in searching for, interpreting, selecting, or coding items to be keypunched from a variety of documents. On occasion may also perform some routine keypunch work. May train inexperienced keypunch operators. (This level is the same as the BLS Class A Keypunch Operator.)

NOTE: If the keypunch activities include both "more difficult" and "less difficult" work, classification should be on the basis of the more difficult work provided that a significant proportion of the keypunch operators work at this level. The number of keypunch operators performing more difficult work is considered significant when at least 25 percent of the operators work at this level, provided there are at least two such operators in units with a total of 3 or 4 employees, 3 such operators in units with a total of 5 to 12 employees, and 4 such operators in units with a total of 13 or more operators.

## CLERICAL

### CLERK, ACCOUNTING

#### Clerk, Accounting I

Under supervision, performs one or more routine accounting operations such as posting simple journal vouchers or accounts payable vouchers, entering vouchers in voucher registers; reconciling bank accounts; and posting subsidiary ledgers controlled by general ledgers, or posting simple cost accounting data. This job does not require a knowledge of accounting and bookkeeping principles, but is found in offices in which the more routine accounting work is subdivided on a functional basis among several workers.

#### Clerk, Accounting II

Under general direction of a bookkeeper or accountant, has responsibility for keeping one or more sections of a complete set of books or records relating to one phase of an establishment's business transactions. Work involves posting and balancing subsidiary ledger or ledgers such as accounts receivable or accounts payable; examining and coding invoices or vouchers with proper accounting distribution; requires judgment and experience in making proper assignments and allocations. May assist in preparing, adjusting, and closing journal entries; may direct accounting clerks I.

### CLERK, FILE

#### Clerk, File I

Performs routine filing of material that has already been classified or which is easily classified in a simple serial classification system (e.g., alphabetical, chronological, or numerical). As requested, locates readily available material in files and forwards material; may fill out withdrawal charge. Performs simple clerical and manual tasks required to maintain and service files.

#### Clerk, File II

Sorts, codes, and files unclassified material by simple (subject matter) headings or partly classified material by finer subheadings. Prepares simple related index and cross-reference aids. As requested, locates clearly identified material in files and forwards material. May perform related clerical tasks required to maintain and service files.

#### Clerk, File III

In an established filing system containing a number of varied subject matter files, classifies and indexes file material such as correspondence, reports, technical documents, etc. May also file this material. May keep records of various types in conjunction with the files. May lead a small group of lower level file clerks.

### KEYPUNCH OPERATOR

#### Keypunch Operator I

Under close supervision or following specific procedures or instructions, transcribes data from source documents to punched cards. Operates a numerical and/or alphabetical or combination keypunch machine to keypunch tabulating cards. May verify cards. Working from various standardized source documents, follows specified sequences which have been coded or prescribed in detail and require little or no selecting, coding, or interpreting of data to be punched. Problems arising from erroneous items or codes, missing information, etc., are referred to supervisor.

## KEYPUNCH OPERATOR—Continued

### Keypunch Operator II

Operates a numerical and/or alphabetical or combination keypunch machine to transcribe data from various source documents to keypunch tabulating cards. Performs same tasks as lower level keypunch operator but in addition, work requires application of coding skills and the making of some determinations, for example, locates on the source document the items to be punched; extracts information from several documents; searches for and interprets information on the document to determine information to be punched. May train inexperienced operators.

### OFFICE BOY OR GIRL

Performs various routine duties such as running errands; operating minor office machines, such as sealers or mailers; opening and distributing mail; and other minor clerical work.

### SECRETARY

Assigned as personal secretary, normally to one individual. Maintains a close and highly responsive relationship to the day-to-day work activities of the supervisor. Works fairly independently receiving a minimum of detailed supervision and guidance. Performs varied clerical and secretarial duties, usually including most of the following:

- (a) Receives telephone calls, personal callers, and incoming mail, answers routine inquiries, and routes the technical inquiries to the proper persons;
- (b) Establishes, maintains, and revises the supervisor's files;
- (c) Maintains the supervisor's calendar and makes appointments as instructed;
- (d) Relays messages from supervisor to subordinates;
- (e) Reviews correspondence, memoranda, and reports prepared by others for the supervisor's signature to assure procedural and typographic accuracy;
- (f) Performs stenographic and typing work.

May also perform other clerical and secretarial tasks of comparable nature and difficulty. The work typically requires knowledge of office routine and understanding of the organization, programs, and procedures related to the work of the supervisor.

### Exclusions

Not all positions that are titled "secretary" possess the above characteristics. Examples of positions which are excluded from the definition are as follows:

- (a) Positions which do not meet the "personal" secretary concept described above;
- (b) Stenographers not fully trained in secretarial type duties;
- (c) Stenographers serving as office assistants to a group of professional, technical, or managerial persons;
- (d) Secretary positions in which the duties are either substantially more routine or substantially more complex and responsible than those characterized in the definition;
- (e) Assistant type positions which involve more difficult or more responsible technical, administrative, supervisory, or specialized clerical duties which are not typical of secretarial work.

NOTE: The term "corporate officer," used in the level definitions following, refers to those officials who have a significant corporate-wide policymaking role with regard to major company activities. The title "vice president," though normally indicative of this role, does not in all cases identify such positions. Vice presidents whose primary responsibility is to act personally on individual cases or transactions (e.g., approve or deny individual loan or credit actions; administer individual trust accounts; directly supervise a clerical staff) are not considered to be "corporate officers" for purposes of applying the following level definitions:

SECRETARY—Continued

Secretary I

(a) Secretary to the supervisor or head of a small organizational unit (e. g. , fewer than about 25 or 30 persons); or

(b) Secretary to a nonsupervisory staff specialist, professional employee, administrative officer, or assistant, skilled technician or expert. (NOTE: Many companies assign stenographers, rather than secretaries as described above, to this level of supervisory or nonsupervisory worker.)

Secretary II

(a) Secretary to an executive or managerial person whose responsibility is not equivalent to one of the specific level situations in the definition for level III, but whose subordinate staff normally numbers at least several dozen employees and is usually divided into organizational segments which are often, in turn, further subdivided. In some companies, this level includes a wide range of organizational echelons; in others, only one or two; or

(b) Secretary to the head of an individual plant, factory, etc. , (or other equivalent level of official) that employs, in all, fewer than 5,000 persons.

Secretary III

(a) Secretary to the chairman of the board or president of a company that employs, in all, fewer than 100 persons; or

(b) Secretary to a corporate officer (other than chairman of the board or president) of a company that employs, in all, over 100 but fewer than 5,000 persons; or

(c) Secretary to the head (immediately below the officer level) over either a major corporate-wide functional activity (e. g. , marketing, research, operations, industrial relations, etc. ) or a major geographic or organizational segment (e. g. , a regional headquarters; a major division) of a company that employs, in all, over 5,000 but fewer than 25,000 employees; or

(d) Secretary to the head of an individual plant, factory, etc. (or other equivalent level of official) that employs, in all, over 5,000 persons; or

(e) Secretary to the head of a large and important organizational segment (e. g. , a middle management supervisor of an organizational segment often involving as many as several hundred persons) of a company that employs, in all, over 25,000 persons.

Secretary IV

(a) Secretary to the chairman of the board or president of a company that employs, in all, over 100 but fewer than 5,000 persons; or

(b) Secretary to a corporate officer (other than the chairman of the board or president) of a company that employs, in all, over 5,000 but fewer than 25,000 persons; or

(c) Secretary to the head, immediately below the corporate officer level, of a major segment or subsidiary of a company that employs, in all, over 25,000 persons.

## STENOGRAPHER, GENERAL

Primary duty is to take and transcribe dictation from one or more persons either in shorthand or by Stenotype or similar machine, involving a normal routine vocabulary. May also type from written copy. May maintain files, keep simple records or perform other relatively routine clerical tasks. May operate from a stenographic pool. Does not include transcribing-machine work.

## STENOGRAPHER, SENIOR

Primary duty is to take and transcribe dictation from one or more persons either in shorthand or by Stenotype or similar machine, involving a varied technical or specialized vocabulary such as in legal briefs or reports on scientific research. May also type from written copy. May also set up and maintain files, keep records, etc.

### OR

Performs stenographic duties requiring significantly greater independence and responsibility than stenographer, general as evidenced by the following: Work requires high degree of stenographic speed and accuracy; a thorough working knowledge of general business and office procedure and of the specific business operations, organization, policies, procedures, files, workflow, etc. Uses this knowledge in performing stenographic duties and responsible clerical tasks such as maintaining followup files; assembling material for reports, memorandums, and letters; composing simple letters from general instructions; reading and routing incoming mail; answering routine questions, etc. Does not include transcribing-machine work.

NOTE: This job is distinguished from that of a secretary in that the secretary normally works in a confidential relationship to only one manager or executive and performs more responsible and discretionary tasks as described in that job definition.

## SWITCHBOARD OPERATOR

### Switchboard Operator I

Operates a single- or multiple-position telephone switchboard handling incoming, outgoing, intraplant or office calls. May handle routine long distance calls and record tolls. May perform limited telephone information service. ("Limited" telephone information service occurs if the functions of the establishment serviced are readily understandable for telephone information purposes, or if the requests are routine, e. g., giving extension numbers when specific names are furnished, or if complex calls are referred to another operator.)

### Switchboard Operator II

Operates a single- or multiple-position telephone switchboard handling incoming, outgoing, intraplant or office calls. Performs full telephone information service or handles complex calls, such as conference, collect, overseas, or similar calls, either in addition to doing routine work as described for switchboard operator I, or as a full-time assignment. ("Full" telephone information service occurs when the establishment has varied functions that are not readily understandable for telephone information purposes, e. g., because of overlapping or interrelated functions, and consequently present frequent problems as to which extensions are appropriate for calls.)

## TABULATING-MACHINE OPERATOR

### Tabulating-Machine Operator I

Operates simple tabulating or electrical accounting machines, such as the sorter, reproducing punch, collator, etc., with specific instructions. May include the performance of some simple wiring from diagrams and some filing work. The work typically involves portions of a work unit, for example, individual sorting or collating runs, or repetitive operations.

### Tabulating-Machine Operator II

Operates more difficult tabulating or electrical accounting machines, such as the tabulator and calculator, in addition to the sorter, reproducer, and collator. This work is performed under specific instructions and may include the performance of some wiring from diagrams. The work typically involves, for example, tabulations involving a repetitive accounting exercise, a complete but small tabulating study, or parts of a longer and more complex report. Such reports and studies are usually of a recurring nature where the procedures are well established. May also include the training of new employees in the basic operation of the machine.

### Tabulating-Machine Operator III

Operates a variety of tabulating or electrical accounting machines, typically including such machines as the tabulator, calculator, interpreter, collator, and others. Performs complete reporting assignments without close supervision, and performs difficult wiring as required. The complete reporting and tabulating assignments typically involve a variety of long and complex reports which often are of irregular or nonrecurring type requiring some planning and sequencing of steps to be taken. As a more experienced operator, is typically involved in training new operators in machine operations, or partially trained operators in wiring from diagrams and operating sequences of long and complex reports. Does not include working supervisors performing tabulating-machine operations and day-to-day supervision of the work and production of a group of tabulating-machine operators.

## TYPIST

Uses a typewriter to make copies of various materials or to make out bills after calculations have been made by another person. May include typing of stencils, mats, or similar materials for use in duplicating processes. May do clerical work involving little special training, such as keeping simple records, filing records and reports, or sorting and distributing incoming mail.

### Typist I

Performs one or more of the following: Copy typing from rough or clear drafts; routine typing of forms, insurance policies, etc.; setting up simple standard tabulations, or copying more complex tables already set up and spaced properly.

### Typist II

Performs one or more of the following: Typing material in final form when it involves combining material from several sources or responsibility for correct spelling, syllabication, punctuation, etc., of technical or unusual words or foreign language material; planning layout and typing of complicated statistical tables to maintain uniformity and balance in spacing. May type routine form letters, varying details to suit circumstances.



**NOTE:** The definitions for the drafting and clerical occupations shown in this bulletin are the same as those used in the Bureau's program of occupational wage surveys in metropolitan areas. (See the list of areas in the order form at the back of this bulletin.) The level designations used in this bulletin, however, differ from those used in the area bulletins. The equivalent level designations for the occupations concerned are as follows:

Occupation	National Survey of Professional, Administrative, Technical, and Clerical Pay	Occupational Wage Surveys in Metropolitan Areas
Draftsman -----	I II III	C B A
Clerk, accounting -----	I II	B A
Clerk, file -----	I II III	C B A
Keypunch operator -----	I II	B A
Secretary -----	I II III IV	D C B A
Switchboard operator -----	I II	B A
Tabulating-machine operator -----	I II III	C B A
Typist -----	I II	B A

**Appendix D. Comparison of Average Annual Salaries in Private  
Industry, June 1970, with Corresponding Salary Rates for  
Federal Employees Under The General Schedule**

The survey was designed, among other uses, to provide a basis for comparing Federal salaries under the General Schedule with general pay levels in private industry. To assure compilation of pay data for work levels that would be equivalent to the Federal grades, the Civil Service Commission collaborated with the Bureau of Labor Statistics to prepare the occupation work level definitions used in the survey. Definitions were graded by the Commission according to standards established for each grade. Each occupation work level surveyed by the Bureau of Labor Statistics and currently considered by the Commission to be equivalent to a General Schedule grade is identified in the following table.

Comparison of average annual salaries in private industry,<sup>1</sup> June 1970, with salary rates for Federal employees under the General Schedule<sup>2</sup>

Occupation and class surveyed by BLS <sup>3</sup>	Average annual salaries in private industry <sup>4</sup>	Salary rates for Federal employees under the General Schedule <sup>2</sup>											
		Grade <sup>5</sup>	Per annum rates and steps <sup>6</sup>										
			1	2	3	4	5	6	7	8	9	10	
Clerks, file I -----	\$4,119	GS 1	\$4,125	\$4,262	\$4,399	\$4,536	\$4,673	\$4,810	\$4,947	\$5,084	\$5,221	\$5,358	
Office boys or girls -----	4,548												
Clerks, file II -----	4,571	GS 2	4,621	4,775	4,929	5,083	5,237	5,391	5,545	5,699	5,853	6,007	
Keypunch operators I -----	5,114												
Switchboard operators I -----	5,109												
Tabulating-machine operators I -----	5,531												
Typists I -----	4,717												
Clerks, accounting I -----	5,268	GS 3	5,212	5,386	5,560	5,734	5,908	6,082	6,256	6,430	6,604	6,778	
Clerks, file III -----	5,508												
Draftsmen-tracers -----	5,675												
Engineering technicians I -----	6,298												
Keypunch operators II -----	5,820												
Keypunch supervisors I -----	6,883												
Stenographers, general -----	5,478												
Switchboard operators II -----	6,010												
Tabulating-machine operators II -----	6,462												
Typists II -----	5,471												
Clerks, accounting II -----	6,815	GS 4	5,853	6,048	6,243	6,438	6,633	6,828	7,023	7,218	7,413	7,608	
Draftsmen I -----	6,805												
Engineering technicians II -----	7,520												
Keypunch supervisors II -----	7,763												
Secretaries I -----	6,259												
Stenographers, senior -----	6,247												
Tabulating-machine operators III -----	7,813												
Accountants I -----	8,503	GS 5	6,548	6,766	6,984	7,202	7,420	7,638	7,856	8,074	8,292	8,510	
Auditors I -----	8,894												
Buyers I -----	8,512												
Chemists I -----	9,164												
Draftsmen II -----	8,364												
Engineers I -----	10,209												
Engineering technicians III -----	8,541												
Job analysts I -----	8,938												
Keypunch supervisors III -----	8,297												
Secretaries II -----	6,979												
Keypunch supervisors IV -----	9,894												
Secretaries III -----	7,506												
Accountants II -----	9,609		GS 6	7,294	7,537	7,780	8,023	8,266	8,509	8,752	8,995	9,238	9,481
Auditors II -----	9,955												
Buyers II -----	9,759												
Chemists II -----	10,233												
Draftsmen III -----	10,204												
Engineers II -----	11,077												
Engineering technicians IV -----	9,837												
Job analysts II -----	9,571												
Secretaries IV -----	8,147												
Accountants III -----	10,686												
Attorneys I -----	11,859	GS 7	8,098	8,368	8,638	8,908	9,178	9,448	9,718	9,988	10,258	10,528	
Auditors III -----	11,475												
Buyers III -----	11,665												
Chemists III -----	11,737												
Engineers III -----	12,350												
Engineering technicians V -----	11,043												
Job analysts III -----	11,183												
Accountants IV -----	12,755												
Attorneys II -----	13,585												
Auditors IV -----	14,044												
Buyers IV -----	13,895												
Chemists IV -----	14,218												
Chief accountants I -----	13,917	GS 8	8,956	9,255	9,554	9,853	10,152	10,451	10,750	11,049	11,348	11,647	
Directors of personnel I -----	12,593												
Engineers IV -----	14,695												
Job analysts IV -----	13,035												
Accountants IV -----	12,755		GS 9	9,881	10,210	10,539	10,868	11,197	11,526	11,855	12,184	12,513	12,842
Attorneys III -----	11,859												
Auditors IV -----	14,044												
Buyers IV -----	13,895												
Chemists IV -----	14,218												
Chief accountants I -----	13,917												
Directors of personnel I -----	12,593												
Engineers IV -----	14,695												
Job analysts IV -----	13,035												
Accountants IV -----	12,755	GS 10		11,905	12,302	12,699	13,096	13,493	13,890	14,287	14,684	15,081	15,478
Attorneys II -----	13,585												
Auditors IV -----	14,044												
Buyers IV -----	13,895												
Chemists IV -----	14,218												
Chief accountants I -----	13,917												
Directors of personnel I -----	12,593												
Engineers IV -----	14,695												
Job analysts IV -----	13,035												

See footnotes at end of table.

Comparison of average annual salaries in private industry,<sup>1</sup> June 1970, with salary rates for Federal employees under the General Schedule<sup>2</sup>—Continued

Occupation and class surveyed by BLS <sup>3</sup>	Average annual salaries in private industry <sup>4</sup>	Salary rates for Federal employees under the General Schedule <sup>2</sup>										
		Grade <sup>5</sup>	Per annum rates and steps <sup>6</sup>									
			1	2	3	4	5	6	7	8	9	10
Accountants V	\$15,477	GS 12	\$14,192	\$14,665	\$15,138	\$15,611	\$16,084	\$16,557	\$17,030	\$17,503	\$17,976	\$18,449
Attorneys III	16,884											
Chemists V	17,066											
Chief accountants II	15,647											
Directors of personnel II	14,832											
Engineers V	17,004											
Attorneys IV	20,304	GS 13	16,760	17,319	17,878	18,437	18,996	19,555	20,114	20,673	21,232	21,791
Chemists VI	19,700											
Chief accountants III	18,780											
Directors of personnel III	18,419											
Engineers VI	19,471											
Attorneys V	25,391	GS 14	19,643	20,298	20,953	21,608	22,263	22,918	23,573	24,228	24,883	25,538
Chemists VII	22,937											
Chief accountants IV	23,133											
Directors of personnel IV	21,920											
Engineers VII	22,328											
Attorneys VI	33,032	GS 15	22,885	23,648	24,411	25,174	25,937	26,700	27,463	28,226	28,989	29,752
Chemists VIII	27,731											
Engineers VIII	25,393											

<sup>1</sup> For scope of survey, see appendix A.

<sup>2</sup> Salary rates in effect in June 1970, the reference date of the BLS survey, as established by Executive Order 11524 issued under authority of the Federal Employees Salary Act of 1970, Public Law 91-231.

<sup>3</sup> For definitions, see appendix C.

<sup>4</sup> Survey findings as summarized in table 1 of this report.

<sup>5</sup> Corresponding grades in the General Schedule were supplied by the U. S. Civil Service Commission.

<sup>6</sup> Section 5335 of title 5 of the U. S. Code provides for within-grade increases on condition that the employee's work is of an acceptable level of competence as defined by the head of the agency. For employees who meet this condition, the service requirements are 52 calendar weeks each for advancement to salary rates 2, 3, and 4; 104 weeks each for advancement to salary rates 5, 6, and 7; and 156 weeks each for advancement to salary rates 8, 9, and 10. Section 5336 provides that an additional within-grade increase may be granted within any period of 52 weeks in recognition of high quality performance above that ordinarily found in the type of position concerned.

Under Section 5303 of title 5 of the U. S. Code, higher minimum rates (but not exceeding the maximum salary rate prescribed in the General Schedule for the grade or level) and a corresponding new salary range may be established for positions or occupations under certain conditions. The conditions include a finding that the salary rates in private industry are so substantially above the salary rates of the statutory pay schedules as to handicap significantly the Government's recruitment or retention of well-qualified persons. Such special pay scales have been established for specific grades or levels of certain occupations (including accountants, auditors, chemists, and engineers). Information on special higher pay scales currently in effect, and the occupations and areas to which they apply, may be obtained from the U. S. Civil Service Commission, Washington, D. C. 20415, or its regional offices.

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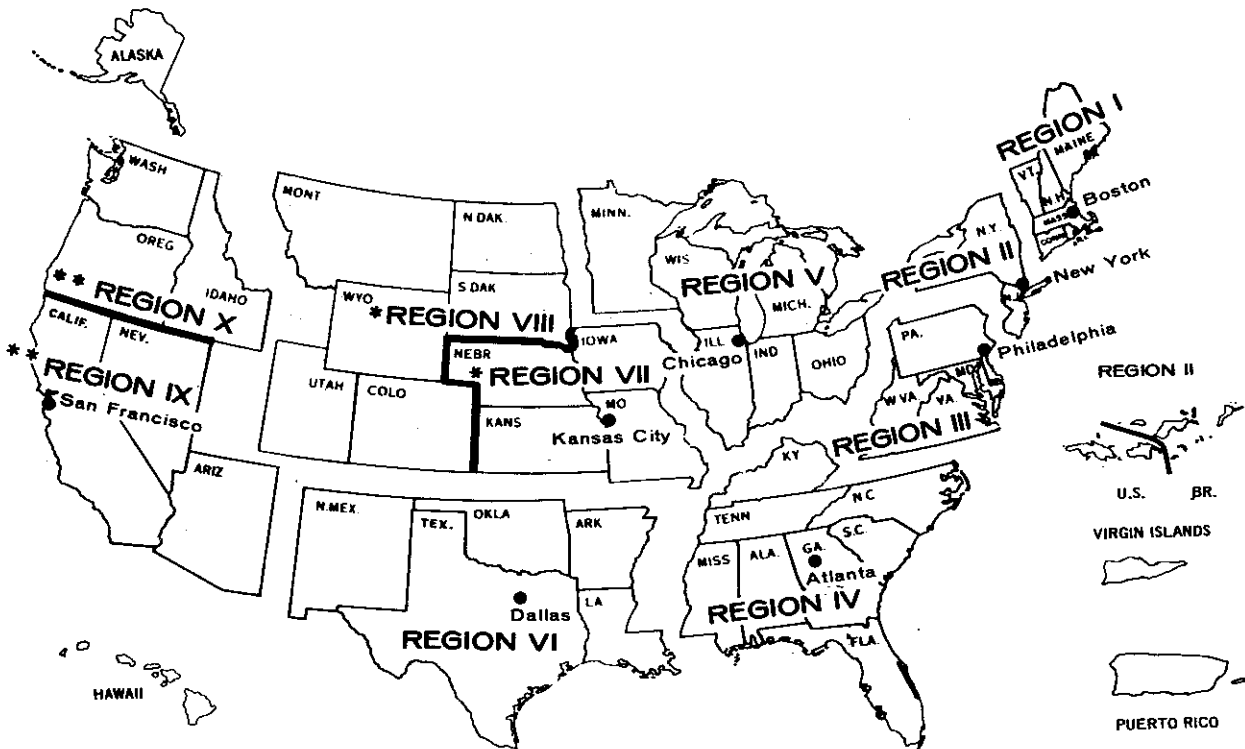
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