

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

February-March 1964

Bulletin No. 1422

UNITED STATES DEPARTMENT OF LABOR
W. Willard Wirtz, Secretary

BUREAU OF LABOR STATISTICS
Ewan Clague, Commissioner

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

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Preface

The Bureau of Labor Statistics provides in this bulletin the results of the fifth in a series of annual nationwide surveys of compensation for selected professional, administrative, technical, and clerical occupations in private industry. The data, which relate to representative establishments in a broad spectrum of American industry in urban areas, were obtained by personal visits of Bureau field economists. The salary data are representative of the period February-March 1964. (See appendix A, timing of survey.)

The design for this annual series of surveys was developed by the Bureau of Labor Statistics in conjunction with the Bureau of the Budget and the Civil Service Commission. The surveys provide a fund of broadly based information on salary levels and distributions in private employment—that is, on the rates of compensation in the dominant sector of the labor market. As such, the results are useful for wide, general economic analysis. In addition, they provide information on pay in private industry in a form suitable for use in appraising the compensation of salaried employees in the Federal civil service. (See appendix C.) It should be emphasized that these surveys, like any other salary surveys, are in no sense calculated to supply mechanical answers to questions of pay policy.

The list of occupations studied represents a wide range of pay levels. 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 prepared for use in the collection of the salary data reflect duties and responsibilities in industry; however, they are 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 employees with specific job functions that could be classified uniformly among establishments. The Bureau of Labor Statistics and the Civil Service Commission collaborated in the preparation of the definitions. (See appendix B.)

The information collected for this survey was limited to salary data for the same occupations as were studied a year earlier. No changes were made in the occupational definitions or in the survey design.

In addition to the collection of salary data for all occupations studied, data on supplementary cash bonus payments to employees in professional and administrative occupations were presented in the 1960 report (BLS Bulletin 1286) and the extent to which such payments were similar in the following year was shown in the 1961 report (BLS Bulletin 1310). Limited information was presented in the 1962 survey report (BLS Bulletin 1346) on the extent to which formal salary structures with a series of established pay grades applied to white-collar occupations. This information formed the basis for selection of establishments included in a separate study in depth of salary structure characteristics (Salary Structure Characteristics in Large Firms, 1963, BLS Bulletin 1417, 1964). Information on supplementary benefits such as paid vacations and holidays and health,

insurance, and pension plans relating to office workers has been incorporated in separate reports. (See order form at the back of this bulletin.) Data are provided in summary reports for all metropolitan areas combined and by region, and in separate area reports for each area in which occupational wage surveys are conducted.

The survey could not have been accomplished without the wholehearted cooperation of the many firms whose salary scales provide the basis for the statistical data 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 splendid cooperation it has received in this difficult undertaking.

This study was conducted in the Bureau's Division of Occupational Pay by Toivo P. Kanninen under the general direction of L. R. Linsenmayer, Assistant Commissioner for Wages and Industrial Relations. Samuel E. Cohen devised the sampling procedures and supervised the selection of the sample, assisted by Theodore J. Golonka, who was responsible for the preparation of the estimates. The analysis was prepared by Louis E. Badenhop and Gunnar Engen. Field work for the survey was directed by the Bureau's Assistant Regional Directors for Wages and Industrial Relations.

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National Survey of Professional, Administrative, Technical, and Clerical Pay, February—March 1964

Summary

Increases in salary levels ranged from 2 to 5 percent during the year ending February—March 1964 for about 4 out of 5 of the professional, administrative, technical, and clerical occupation work levels surveyed by the Bureau of Labor Statistics.¹ Among the numerically more important occupations studied, increases during the year averaged 2.9 percent for engineers, 2.8 percent for accountants, 3.6 percent for engineering technicians, and 2.9 percent for clerical employees, at all levels surveyed. Over the 3-year period ending February—March 1964, the relative rise in average salaries was smaller for clerical levels than for the professional and administrative levels.

Among the 75 professional, administrative, technical, and clerical occupation work levels surveyed, average (mean) monthly salaries ranged from \$259 for clerks engaged in routine filing to \$2,024 for attorneys in charge of legal staffs, handling complex legal problems but usually subordinate to a general counsel or his immediate deputy in large firms. For engineers, the largest professional group studied, average salaries ranged from \$612 a month for recent college graduates in trainee positions to \$1,707 for those in the highest among eight levels studied. Monthly salaries averaged \$356 for general stenographers, the largest clerical group represented in the survey. Average monthly salaries of engineering technicians ranged from \$406 to \$713 among five work levels. Salary levels in finance and retail trade industries generally were lower than in other major industry divisions represented in the survey. The lower salaries in finance industries were offset in part by a shorter average workweek.

Characteristics of the Survey

This annual salary survey, the fifth in a series, relates to establishments employing 250 workers or more located in metropolitan areas.² Nationwide estimates of salary levels and distributions are provided for 75 occupation work level categories surveyed 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.³ Although the survey was conducted over a longer time period, on the average, the data are representative of the period February—March 1964.

Definitions for the occupations selected for 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.

¹ See the explanation of survey timing in appendix A.

² 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); and February—March 1963 (BLS Bulletin 1387, 1963).

³ For a detailed description of the scope and method of survey, see appendix A.

The number of work levels defined for survey in each occupation ranges 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 occupational definitions used in the survey, as well as the industrial and geographic coverage, are identical with those of the previous survey.

The selected occupations as defined for the study accounted for more than a million employees or about a fifth of the estimated total employment in professional, administrative, technical, 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 nearly 288,000 employees, whereas, fewer than 5,000 were employed in each of four of the occupational categories as defined for the study (chief accountants, managers of office services, job analysts, and directors of personnel). (See table 1.) In the clerical field, three occupations at all work levels studied (accounting clerks, stenographers, and typists) accounted for three-fifths of the 493,000 employees in those occupations studied. The selected drafting room occupations had aggregate employment of nearly 59,000 and the five engineering technician levels together accounted for about 66,000.

Although women accounted for nearly half the total employment in the occupations studied, they were largely employed in clerical positions. The clerical occupations, in which the proportion of women amounted to more than 90 percent of the employment in all levels studied, were bookkeeping-machine operators, file clerks, keypunch operators, stenographers, switchboard operators, and typists. Among tabulating-machine operators, however, women accounted for only a third of the work force, and office girls were outnumbered by office boys in a ratio of about 3 to 2. Women accounted for a third of the tracers but less than 5 percent of the draftsmen and engineering technicians. The few women employees in the professional and administrative occupations were usually reported in the first few levels; those in which women accounted for as many as 10 but less than 20 percent of the employment were: Accountants I, managers of offices services I, job analysts II, and chemists I and II.

The time unit in which salary rates were expressed varied among and within establishments. Although monthly rates were widely reported in the professional and administrative occupations, annual rates were not uncommon, particularly among the high-salaried positions. Clerical pay rates were commonly expressed in weekly terms, but other time units were in use in many establishments.

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 table 1.

Changes in Salary Levels

Increases in average salary levels ranged from 2.6 to 4.8 percent during the year ending February-March 1964 among the 12 occupational groups comprising the 75 work levels studied. The increases during the most recent period were generally similar to those occurring annually since the "Winter 1960-61"

(February–March 1961) survey, as shown in the following tabulation.⁴ Over the 3-year period (1961–64), increases ranged from 7.7 to 11.7 percent, as shown below and presented graphically in chart 1.

Occupational group	Percent increase in average salaries			
	1963 to 1964	1962 to 1963	1961 to 1962	1961 to 1964
Accountants -----	2.8	3.3	2.8	9.2
Auditors -----	3.1	3.6	2.9	9.9
Chief accountants -----	4.8	2.8	2.6	10.5
Attorneys -----	3.3	4.6	3.2	11.5
Managers, office services -----	2.7	2.2	3.3	8.4
Job analysts -----	3.5	2.6	1.4	7.7
Directors of personnel -----	4.6	3.0	3.7	11.7
Chemists -----	3.3	3.8	3.9	11.4
Engineers -----	2.9	4.4	2.6	10.2
Engineering technicians -----	3.6	2.9	(1)	(1)
Drafting -----	2.6	3.6	3.8	10.3
Clerical -----	2.9	2.6	2.9	8.6

¹ Engineering technicians were not surveyed before 1962.

Although the percent change in average salaries during the recent year differed among the various work levels studied, for the professional and administrative occupations, 2 out of 3 had salary increases from 2 to 4.5 percent, while nearly all of the 27 clerical, drafting, and engineering technician levels had salary increases from 2 to 4 percent.

In order to examine the relative rise in average salaries over the 3-year period (1961–64) among various levels of work, 61 occupational work levels in which the survey definitions were identical in both periods were classified into three broad groupings, as shown in the following tabulation. The median increases shown were determined by arraying the relative increases in average salaries for the occupation work levels within each grouping.

Work level groupings	Number of occupation work levels	Median percent increase, 1961–64
Clerical and beginning technician levels -----	14	8.3
Entry and development professional levels, advanced technician levels, and supervisors of nonprofessional levels -----	20	9.9
Fully experienced professional working levels, supervisors of professional levels, and program administrative levels -----	27	10.4

⁴ In the comparisons of year-to-year changes, employment in the most recent year was used as a constant employment weight in both periods to eliminate the effect of year-to-year changes in the proportions of employees in various work levels within an occupational category. Changes over the 3-year period were obtained by linking together the year-to-year changes.

As shown by this comparison, the median increase in average salaries over the 3-year period was lowest for the grouping representing primarily clerical levels, slightly higher for the grouping of lower professional and administrative levels, and highest for the fully experienced levels of these occupations studied. The increases for the levels within the clerical grouping were clustered more closely about the median than were the increases for the other two groupings. For example, the increases were within 1 percentage point of the median in 10 of the 14 levels in the clerical grouping, compared to a range within 2 percentage points of the median for 15 of the 27 levels of fully experienced personnel in professional and administrative occupations.

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, director of personnel, and manager of office services.⁵

Average Salaries, February-March 1964

Average (mean) monthly salaries among the 75 professional, administrative, technical, and clerical occupation work levels defined for the current survey ranged from \$259 for file clerks I to \$2,024 for attorneys VII. These levels range from clerks, who file material that has been classified or is easily classified in a simple serial classification system, to heads of legal staffs with responsibility for planning and conducting legal studies and approving recommendations of subordinates on important technical legal questions, but who are usually subordinate to a general counsel or his immediate deputy in large firms.⁶

Among the five levels of accountants surveyed, average monthly salaries ranged from \$520 for accountants I to \$964 for accountants V. Auditors in the four levels defined for survey had average salaries ranging from \$486 a month for auditors I to \$857 for auditors IV. Level I in both the accounting and auditing series included trainees with bachelor's degrees in accounting or the equivalent in education and experience combined. Only at level I were salaries of auditors below those for accountants; at level III, which accounted for the largest group of employees in each series, monthly salaries averaged \$710 for auditors and \$659 for accountants. Nearly half the relatively few auditors I and approximately a fourth of those in the higher levels were employed in finance industries, whereas,

⁵ These types of occupations also may be subject to greater sampling error, as explained in the last paragraph of appendix A.

⁶ Classification of employees in the occupations and work levels surveyed was based on factors detailed in the definitions in appendix B.

more than four-fifths of the accountants at all levels were employed in manufacturing and public utilities industries together.⁷ The proportion of employees in each major industry division within scope of the survey is shown for each occupation in table 5 and presented graphically in chart 4.

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 \$858 a month. Chief accountants IV,⁸ 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 processes (directing as many as 40 accountants), averaged \$1,329 a month. Nearly three-fourths of the chief accountants who met the requirements of the definitions for these four levels were employed in manufacturing industries.

Attorneys classified at level I averaged \$604 a month. These were trainees with LL. B. degrees and bar membership who held positions in legal advisory departments of firms in which their full professional training could be utilized.⁹ Attorneys VII, the highest level surveyed in this series, were paid monthly salaries averaging \$2,024. Level VII was defined to include attorneys in charge of legal staffs, handling assignments in one or more broad legal areas, with responsibility for approving recommendations of subordinates which may have an important bearing on the company's business. Although this was the highest level surveyed, such attorneys were usually subordinate to a general counsel or his immediate deputy in large firms. The finance, insurance, and real estate industries employed the highest proportion of attorneys (42 percent), compared with 30 percent in manufacturing, and 18 percent in public utilities.

Managers of office services, as defined for the study, included four levels based on the variety of clerical and other office services supervised and the size of the organization serviced. Those at level I were responsible for providing 4 or 5 of the 9 office service functions enumerated in the survey definition for a staff of 300 to 600 employees, compared with seven or eight functions for about 1,500 to 3,000 employees at level IV. Among these levels, average monthly salaries ranged from \$625 to \$1,079. Manufacturing industries accounted for about three-fifths of the employees in the four levels combined, and an additional fifth were employed in finance, insurance, and real estate industries.

In the personnel management field, four work levels each of **job analysts** and **directors of personnel** were studied.¹⁰ Job analysts I, defined to include trainees under immediate supervision, averaged \$548 compared with \$847 for job analysts IV, who analyze 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,

⁷ Establishments primarily engaged in providing accounting and auditing services were excluded from the survey.

⁸ Although level V of chief accountant was surveyed, as defined in appendix B, too few employees met requirements for this level to warrant presentation of salary figures.

⁹ Establishments primarily engaged in offering legal advice or legal services were excluded from the survey.

¹⁰ Although level V of director of personnel was surveyed, as defined in appendix B, too few employees met requirements for this level to warrant presentation of salary figures.

responsibility for administering a formal job evaluation system, employment and placement functions, and employee relations and services functions. Those with 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 \$805 for level I to \$1,376 for level IV. Manufacturing industries accounted for 78 percent of the job analysts and 71 percent of the directors of personnel included in the study; the finance, insurance, and real estate industries ranked next, with 15 percent of the job analysts and 12 percent of the directors of personnel.

Chemists and engineers each were surveyed in eight levels. Each 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.¹¹ Average monthly salaries ranged from \$612 for engineers I to \$1,707 for engineers VIII, and from \$538 for chemists I to \$1,757 for chemists VIII. Although, at level I, the average salaries of engineers exceeded those for chemists by almost 14 percent, at level IV the difference narrowed to less than 4 percent, and at level VIII the average salaries of chemists exceeded those for engineers by nearly 3 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 82 percent of all engineers and 90 percent of all chemists; public utilities, 10 and 1 percent, respectively; and the surveyed engineering and scientific services employed virtually all of the others.

The five-level series for engineering technicians was limited, by definition, 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 \$406. Engineering technicians V, the highest level surveyed, averaged \$713 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 \$556 and \$626, respectively. As might be expected, nearly all of the technicians as defined were employed in manufacturing (84 percent) and in the scientific services industries studied (12 percent). Although the ratio of such technicians to engineers studied was about 1 to 5, respectively, in all industries, higher ratios of approximately 2 to 7 were found in establishments manufacturing mechanical and electrical equipment, and 1 to 2 in research, development, and testing laboratories.

¹¹ 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.

In the drafting field, monthly salaries among three levels of work averaged \$585 for senior (fully experienced) draftsmen, \$459 for junior draftsmen, and \$361 for the relatively small group of tracers. These employees were distributed by industry in about the same proportion as engineers, with 81 percent in manufacturing, 9 percent in public utilities, and virtually all of the others in the selected engineering and scientific service industries studied.

Among the 19 clerical jobs represented in the study, monthly salaries ranged from \$259 for file clerks I to \$496 for tabulating-machine operators III, who were required to perform, without close supervision, complete reporting assignments by machine, including difficult wiring as required. Averages within the range of \$281 through \$411 a month were recorded for 16 of the other 17 work levels; general stenographers, the largest group of clerical employees studied, averaged \$356. Office boys or girls, two-fifths of whom were employed in manufacturing industries, averaged \$22 a month more than file clerks I, who were more heavily represented in the finance, insurance, and real estate industries. Women accounted for nine-tenths or more of the employees in 13 of the clerical work levels and the men accounted for half or more in 3 (tabulating-machine operators II and III, and office boys or girls). Although employment in manufacturing exceeded that in the five other nonmanufacturing industry divisions within scope of the survey in 15 of the 19 clerical work levels, in only seven instances did manufacturing account for more than half the employees.

Among professional, administrative, and technical occupations in which two work levels or more were studied, the relative spread between average salaries for successive work levels ranged from 9 percent (between salaries of engineers I and II) to 31.9 percent (between salaries of attorneys VI and VII). Clerical occupations studied reflected a similar spread, ranging from 10.8 percent (between annual salaries of switchboard operators and switchboard operators, special) to 32.6 percent (between annual salaries of accounting clerks I and II). In all but 7 of 54 such comparisons, however, the average salary for the higher level was within a range of 12 to 26 percent above the average for the preceding level studied.

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 2 percent for 49 of the 75 work levels and as much as 2 but less than 3 percent in 13 additional levels. The weighted average salaries exceeded the medians by more than 4 percent for directors of personnel II and IV (5.0 and 5.8 percent, respectively); for managers of office services III (5.0 percent); and for office boys or girls (4.2 percent).

Salary Distributions

Percent distributions of employees by monthly salaries are presented for the professional and administrative occupations in table 2, and for engineering technicians in table 3; distributions by weekly salaries are shown for employees in the drafting and clerical occupations in table 4.¹² Within nearly all of the 75 occupation work levels, salary rates for some of the highest paid employees were twice those of the lowest paid employees. All occupations in which two levels or more of work were surveyed showed a substantial degree

¹² Technical considerations dictated the summarization of employee distributions by weekly salaries in the case of the drafting and clerical jobs.

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 exhibited substantial overlapping.

The middle 50 and 80 percent of the range, and the median salary for each occupational work level have been charted (charts 2 and 3) 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.

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. The relative spread in salary ranges showed considerable variation among occupations, and in many cases, the relative spread was not greater for professional and administrative work levels than for clerical levels studied. Expressing the salary range of the middle 50 percent of employees as a percent of the median salary permitted comparisons of salary ranges for the various work levels on the same basis, and also eliminated extreme low and high salaries from each comparison.

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 number of work levels	Degree of dispersion				
		Under 15	15 and under 20	20 and under 25	25 and under 30	30 and over
All levels -----	75	4	20	26	22	3
Accountants -----	5		4	1		
Auditors -----	4		1	3		
Chief accountants -----	4			1	3	
Attorneys -----	7		1	1	4	1
Managers, office services -----	4	1	1	2		
Job analysts -----	4		2	1	1	
Directors of personnel -----	4				4	
Chemists -----	8		4	4		
Engineers -----	8	2	2	4		
Engineering technicians ----	5	1	4			
Drafting -----	3			1	1	1
Clerical -----	19		1	8	9	1

Thus, in this comparison, the middle range for attorney levels amounted to 25 percent or more of the corresponding median in five of seven levels, whereas the range was less than 25 percent of the corresponding median for all levels of chemists and engineers. The relative spread tended to widen at the higher levels of most of the professional and administrative occupations. For example, engineers were distributed by level in the preceding tabulation as follows: Levels I and II, under 15 percent; III and IV, 15 and under 20 percent; and levels V through VIII, 20 and under 25 percent. With two exceptions, the range was between 20 and 30 percent of the corresponding medians for the clerical 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. Salaries of individuals in the same occupation and grade level may vary considerably within establishments. Salaries of white-collar employees are generally determined on an individual basis or under formalized pay plans which provide for a range in

salary rates for each grade level within each occupation. The in-grade salary spread (i.e., the percent difference between the minimum and maximum rates for a grade) tends to be greater in the professional and administrative jobs than in the clerical jobs. For the professional and administrative occupations, the labor market tends to be national in scope. Office clerical employees, on the other hand, are usually recruited locally.¹³ As pointed out earlier (and indicated in table 5 and chart 4), employment in the various industries within the scope of the survey varies considerably from occupation to occupation. These variations in employment also are reflected 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 for the professional and administrative occupations in all industries within scope of the survey. 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 and all industries combined (table 6). To obtain relative salary levels, aggregates for the work levels in each occupation combined were computed for all industries and for each major industry division. The all-industry employment in each work level was used as a constant employment weight in computing aggregates for the various occupations by industry to eliminate the influence of differences among industry divisions in the proportion of employment in various work levels. The aggregates for each occupation and industry division were then expressed as percentages of the corresponding groups in all industries combined.

For all of the clerical occupations studied, and for most 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 (table 6). It is apparent, therefore, that in those occupations in which retail trade and the finance industries account for a substantial proportion of the total employment, as shown in table 5, 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 (table 6). For example, relative pay levels for bookkeeping-machine operators of 111 percent in manufacturing and 122 percent in public utilities reflect the influence of lower salaries for the high proportion (47 percent) of all-industry employment accounted for by the finance industries. In finance industries, however, the relatively lower salary levels were offset to the extent that average weekly hours in that industry were lower than in the other industries surveyed, as shown in table 8. The relative salary levels for professional, administrative, and technical occupations tended to be nearest to 100 percent of the all-industry levels in manufacturing industries, which accounted for a high proportion of the total employment in most of these occupations.

Relative salary levels for a majority of the clerical and half the professional and administrative occupations were slightly higher in public utilities than in manufacturing industries. For engineers, however, relative salary levels in utilities were 97 percent of the all-industry level, compared with 100 for manufacturing and 99 for the selected services. The relative salary position of chemists was above that for engineers in the selected services; this reflected the relatively few chemists compared with engineers within this grouping who were

¹³ For an analysis of interarea pay differentials in clerical salaries, see Wages and Related Benefits: Metropolitan Areas, United States and Regional Summaries, 1961-62 (BLS Bulletin 1303-83, 1963, Pt. II).

employed in engineering and architectural services firms where salary levels were lower than in the research, development, and testing laboratories. Salary levels of engineers in the latter industries were approximately 10 percent higher than in engineering and architectural services industries as a group.

Average Weekly Hours

The length of the workweek, on which the regular straight-time salary was based, was obtained for individual employees in the occupations studied. The distribution of the average weekly hours (rounded to the nearest half hour) is shown in table 7 for the 75 job categories. Workweeks averaged 40 hours in 17 job categories, 39.5 hours in 25 categories, and from 38 to 39 hours in all others. Differences in average weekly hours among occupations, and among work levels within occupations, largely reflect variation in the distribution of employment in the various job categories among industries. Workweeks of 40 hours were predominant in all except the finance industries, in which a majority of the employees were on schedules of less than 40 hours.¹⁴ Average workweeks of 39 hours or less for all levels of auditors and attorneys and several of the clerical categories reflect the extent to which they are employed in finance industries. Similarly, the average weekly hours of 39.5 or 40 hours recorded for all levels of chemists and engineers reflect the high incidence of the 40-hour workweek in manufacturing, public utilities, scientific research, and engineering services industries.

The distribution of average weekly hours (rounded to the nearest half hour) is presented in table 8 for all occupation work levels combined in major industry divisions surveyed. Average weekly hours were lower in finance, insurance, and real estate than in the other industry divisions for a majority of the occupations studied. Thus, in finance industries, workweeks averaged 38 hours for a majority of the occupations, compared to 39.5 hours in manufacturing and from 39 to 39.5 hours in the remaining industries surveyed.

¹⁴ For additional information on scheduled weekly hours of office workers employed in metropolitan areas, see Wages and Related Benefits: Metropolitan Areas, United States and Regional Summaries, 1962-63 (BLS Bulletin 1345-83, 1964, Pt. II).

Chart 1. Rise in Average (Mean) Salaries for Selected Occupational Groups, 1961 to 1964

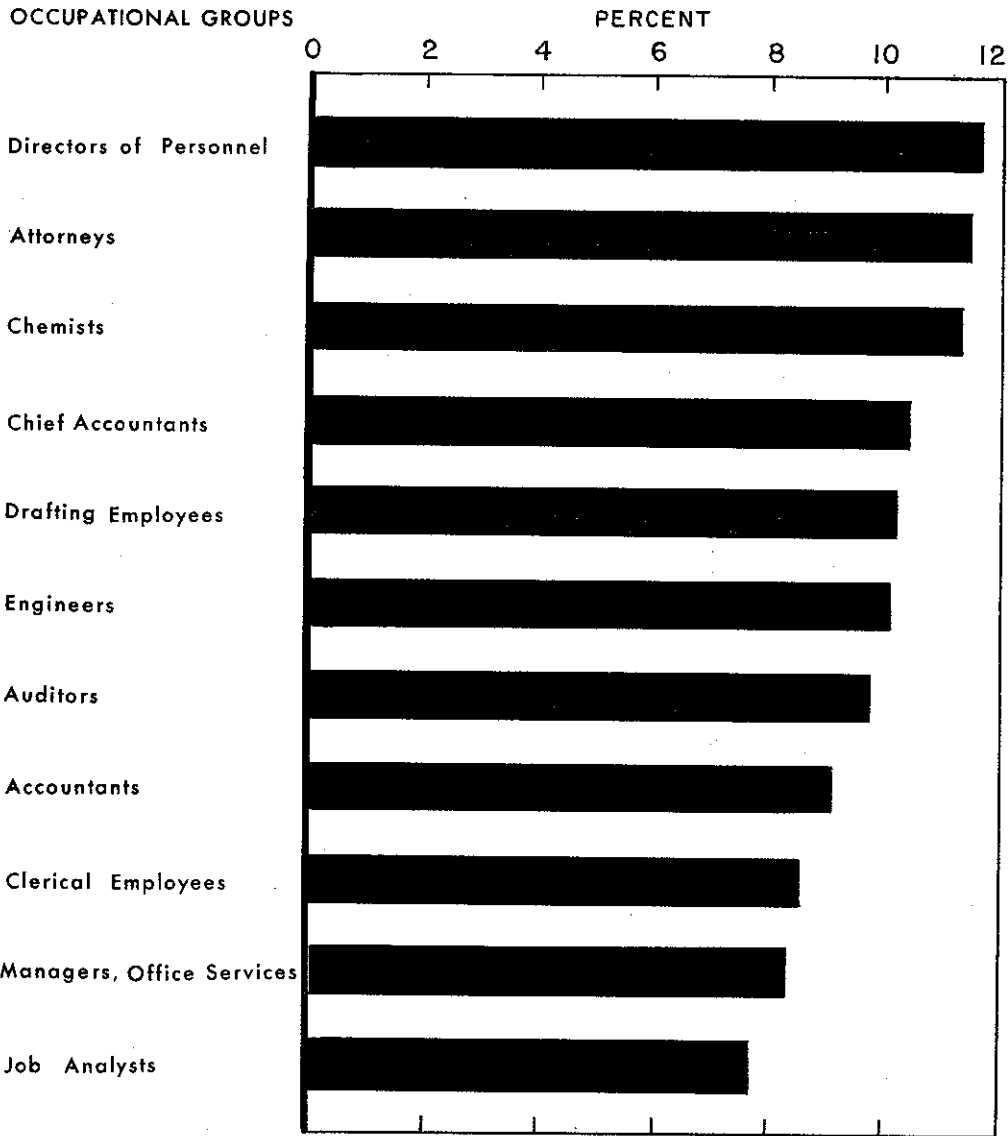


Chart 2. Salaries in Professional and Technical Occupations, February-March 1964

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

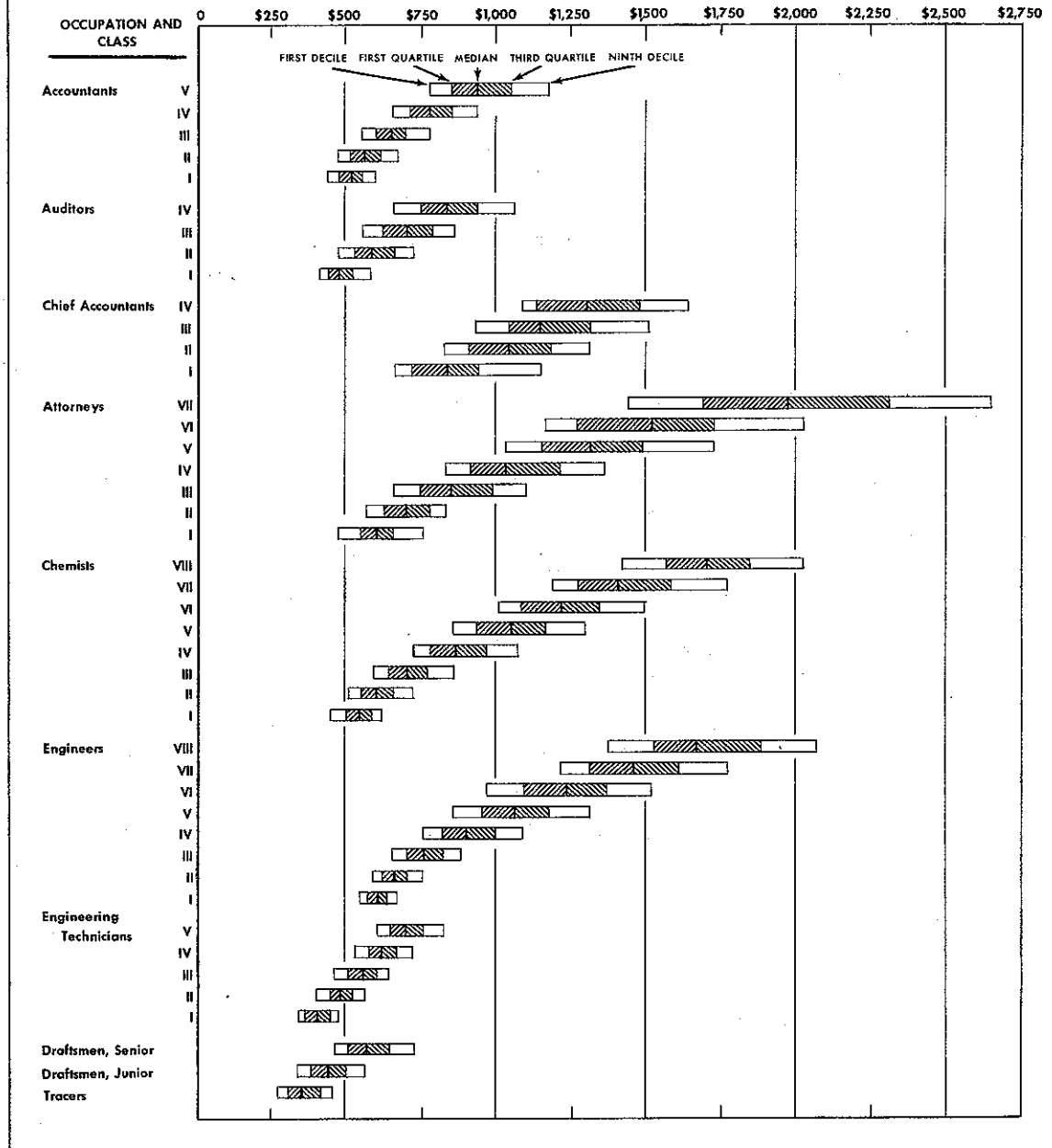


Chart 3. Salaries in Administrative and Clerical Occupations, February-March 1964

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

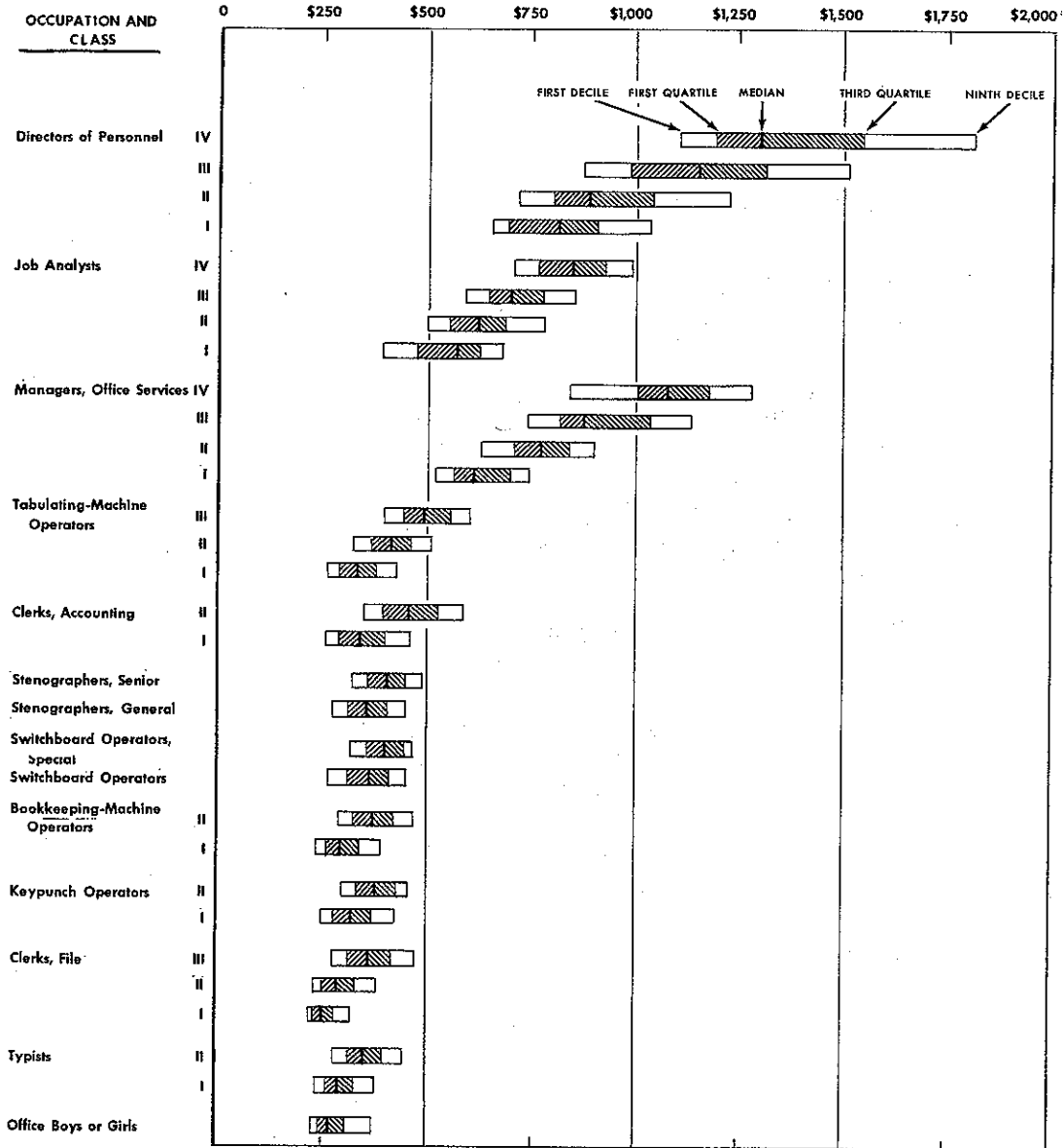


Chart 4. Relative Employment in Selected Occupational Groups by Industry Division, February-March 1964

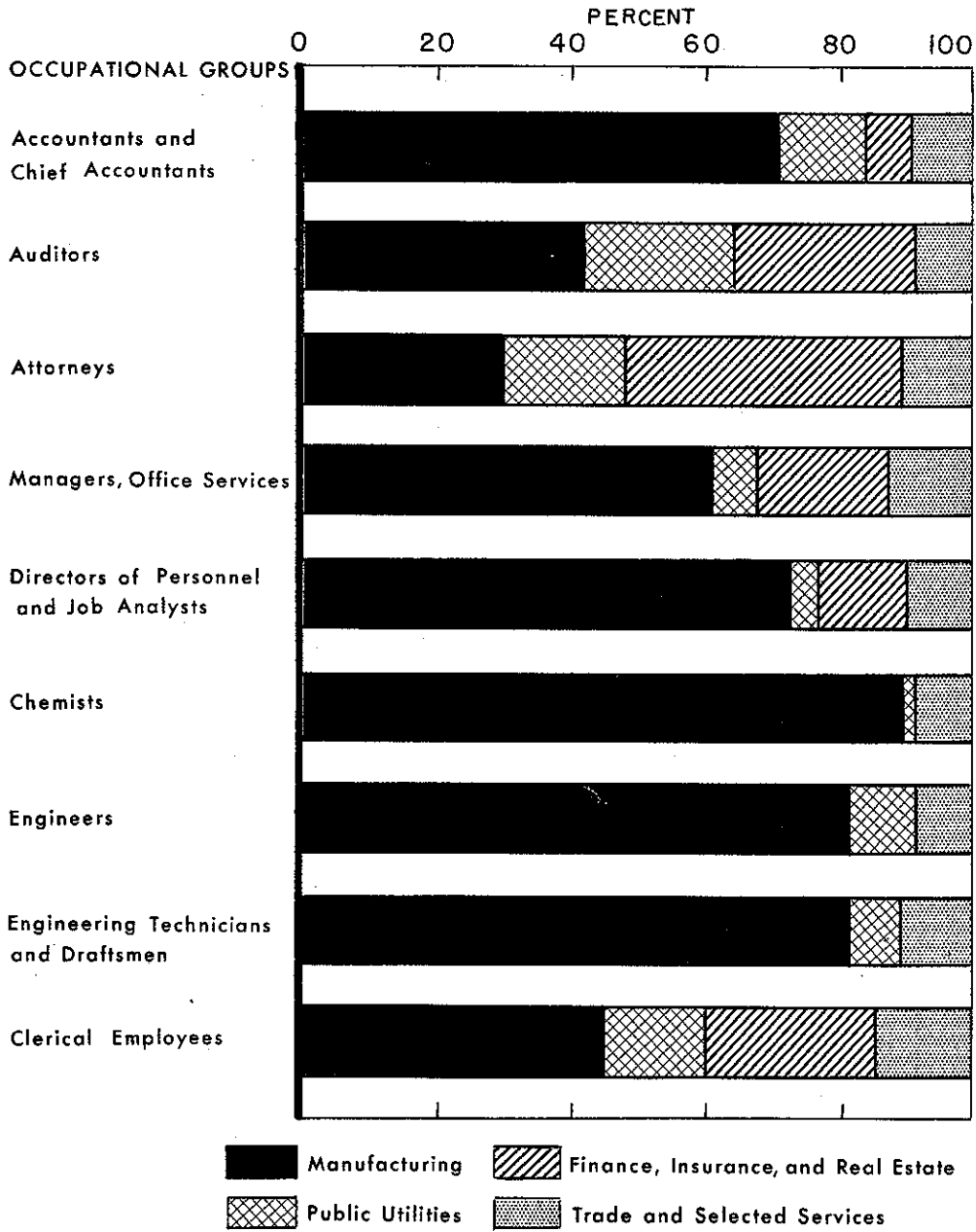


Table 1. Employment and Average Salaries for Selected Professional, Administrative, Technical, and Clerical Occupations in Private Industry,¹ February-March 1964, and Percent Increase in Average Salaries During the Year²

Occupation and class (See definitions in appendix B)	Number of employees ³	Monthly salaries ⁴				Annual salaries ⁴				Percent increase in average salaries
		Mean	Median	Middle range ⁵		Mean	Median	Middle range ⁵		
				First quartile	Third quartile			First quartile	Third quartile	
Accountants and Auditors										
Accountants I	4,099	\$520	\$525	\$481	\$563	\$6,240	\$6,300	\$5,772	\$6,756	1.4
Accountants II	8,513	570	568	519	622	6,840	6,816	6,228	7,464	2.0
Accountants III	18,051	659	655	603	711	7,908	7,860	7,236	8,532	3.1
Accountants IV	13,337	792	783	716	859	9,504	9,396	8,592	10,308	3.0
Accountants V	5,521	964	948	855	1,054	11,568	11,376	10,260	12,648	3.0
Auditors I	435	486	479	441	524	5,832	5,748	5,292	6,288	5.2
Auditors II	2,017	599	593	532	664	7,188	7,116	6,384	7,968	4.2
Auditors III	3,767	710	705	629	794	8,520	8,460	7,548	9,528	3.3
Auditors IV	2,262	857	840	755	948	10,284	10,080	9,060	11,376	1.9
Chief accountants I	279	858	840	722	949	10,296	10,080	8,664	11,388	.6
Chief accountants II	1,107	1,048	1,042	918	1,188	12,576	12,504	11,016	14,256	6.5
Chief accountants III	670	1,177	1,148	1,042	1,318	14,124	13,776	12,504	15,816	4.5
Chief accountants IV	260	1,329	1,309	1,139	1,479	15,948	15,708	13,668	17,748	2.8
Attorneys										
Attorneys I	284	604	605	551	662	7,248	7,260	6,612	7,944	-2.7
Attorneys II	874	711	705	636	787	8,532	8,460	7,632	9,444	.6
Attorneys III	998	872	854	751	992	10,464	10,248	9,012	11,904	1.6
Attorneys IV	1,424	1,068	1,032	920	1,217	12,816	12,384	11,040	14,604	4.2
Attorneys V	1,168	1,336	1,315	1,153	1,487	16,032	15,780	13,836	17,844	4.3
Attorneys VI	709	1,535	1,516	1,272	1,724	18,420	18,192	15,264	20,688	5.3
Attorneys VII	467	2,024	1,975	1,693	2,314	24,288	23,700	20,316	27,768	2.4
Office Services										
Managers, office services I	372	625	611	563	699	7,500	7,332	6,756	8,388	1.3
Managers, office services II	608	770	772	706	841	9,240	9,264	8,472	10,092	2.3
Managers, office services III	335	916	872	813	1,025	10,992	10,464	9,756	12,300	5.2
Managers, office services IV	77	1,079	1,071	1,014	1,170	12,948	12,852	12,168	14,040	-1
Personnel Management										
Job analysts I	109	548	569	473	622	6,576	6,828	5,676	7,464	2.6
Job analysts II	353	621	615	549	685	7,452	7,380	6,588	8,220	3.3
Job analysts III	729	712	701	646	777	8,544	8,412	7,752	9,324	3.9
Job analysts IV	549	847	849	764	924	10,164	10,188	9,168	11,088	3.2
Directors of personnel I	644	805	811	693	903	9,660	9,732	8,316	10,836	7.9
Directors of personnel II	1,327	930	886	799	1,036	11,160	10,632	9,588	12,432	4.5
Directors of personnel III	1,080	1,158	1,153	984	1,311	13,896	13,836	11,808	15,732	3.4
Directors of personnel IV	374	1,376	1,301	1,195	1,547	16,512	15,612	14,340	18,564	4.9
Chemists and Engineers										
Chemists I	1,472	538	546	501	588	6,456	6,552	6,012	7,056	1.1
Chemists II	4,256	610	604	556	661	7,320	7,248	6,672	7,932	1.8
Chemists III	7,493	717	707	648	776	8,604	8,484	7,776	9,312	3.8
Chemists IV	7,947	886	872	789	976	10,632	10,464	9,468	11,712	3.7
Chemists V	5,466	1,062	1,052	943	1,173	12,744	12,624	11,316	14,076	2.6
Chemists VI	2,971	1,229	1,219	1,087	1,348	14,748	14,628	13,044	16,176	4.5
Chemists VII	1,096	1,444	1,412	1,268	1,584	17,328	16,944	15,216	19,008	2.8
Chemists VIII	353	1,757	1,703	1,567	1,847	21,084	20,436	18,804	22,164	6.4
Engineers I	8,871	612	611	584	643	7,344	7,332	7,008	7,716	4.1
Engineers II	26,093	667	662	624	708	8,004	7,944	7,488	8,496	3.6
Engineers III	71,245	767	764	705	828	9,204	9,168	8,460	9,936	3.1
Engineers IV	89,652	918	909	829	1,001	11,016	10,908	9,948	12,012	2.7
Engineers V	52,409	1,077	1,062	954	1,179	12,924	12,744	11,448	14,148	3.1
Engineers VI	28,312	1,235	1,235	1,095	1,370	14,820	14,820	13,140	16,440	2.9
Engineers VII	9,073	1,471	1,458	1,316	1,610	17,652	17,496	15,792	19,320	2.3
Engineers VIII	2,215	1,707	1,669	1,524	1,887	20,484	20,028	18,288	22,644	2.5
Engineering Technicians										
Engineering technicians I	3,573	406	405	366	446	4,872	4,860	4,392	5,352	2.3
Engineering technicians II	11,065	485	483	448	527	5,820	5,796	5,376	6,324	4.3
Engineering technicians III	17,820	556	560	510	609	6,672	6,720	6,120	7,308	3.7
Engineering technicians IV	22,967	626	622	581	672	7,512	7,464	6,972	8,064	3.3
Engineering technicians V	10,894	713	704	655	766	8,556	8,448	7,860	9,192	3.6

See footnotes at end of table.

Table 1. Employment and Average Salaries for Selected Professional, Administrative, Technical, and Clerical Occupations in Private Industry, ¹ February-March 1964, and Percent Increase in Average Salaries During the Year ²—Continued

Occupation and class (See definitions in appendix B)	Number of employees ³	Monthly salaries ⁴				Annual salaries ⁴				Percent increase in average salaries
		Mean	Median	Middle range ⁵		Mean	Median	Middle range ⁵		
				First quartile	Third quartile			First quartile	Third quartile	
Draftsmen										
Draftsmen, junior -----	18,466	\$450	\$443	\$389	\$506	\$5,395	\$5,318	\$4,667	\$6,074	2.9
Draftsmen, senior -----	37,583	585	571	511	650	7,021	6,856	6,126	7,795	2.2
Tracers -----	2,532	361	356	308	417	4,329	4,275	3,702	5,005	1.7
Clerical										
Bookkeeping-machine operators I -----	14,193	302	293	259	339	3,627	3,519	3,102	4,067	3.6
Bookkeeping-machine operators II -----	4,348	372	371	324	419	4,467	4,458	3,884	5,032	2.7
Clerks, accounting I -----	52,815	347	339	291	393	4,169	4,067	3,493	4,719	2.6
Clerks, accounting II -----	37,626	461	454	393	524	5,530	5,449	4,719	6,283	2.9
* Clerks, file I -----	16,937	259	252	230	280	3,106	3,024	2,763	3,363	2.2
* Clerks, file II -----	21,865	294	285	252	326	3,530	3,415	3,024	3,911	3.6
* Clerks, file III -----	7,401	368	361	313	415	4,419	4,328	3,754	4,979	3.1
* Key punch operators I -----	32,504	327	317	278	369	3,918	3,806	3,337	4,432	2.4
* Key punch operators II -----	22,547	376	376	332	424	4,513	4,510	3,989	5,084	3.2
Office boys or girls -----	22,620	281	269	243	306	3,369	3,233	2,920	3,676	2.3
y Stenographers, general -----	68,838	356	352	308	404	4,269	4,223	3,702	4,849	2.5
* Stenographers, senior -----	41,743	403	404	358	448	4,842	4,849	4,302	5,370	2.2
Switchboard operators -----	16,363	357	361	308	408	4,282	4,328	3,702	4,901	2.4
Switchboard operators, special -----	919	395	402	354	441	4,746	4,823	4,249	5,292	2.1
Tabulating-machine operators I -----	9,218	336	328	289	378	4,031	3,937	3,467	4,536	2.1
Tabulating-machine operators II -----	17,272	411	411	363	461	4,937	4,927	4,354	5,527	2.7
Tabulating-machine operators III -----	8,876	496	491	441	550	5,951	5,892	5,292	6,596	2.6
Typists I -----	60,706	297	291	259	328	3,569	3,497	3,102	3,937	2.4
Typists II -----	36,219	354	348	311	395	4,248	4,171	3,728	4,745	3.0

¹ For scope of study, see table in appendix A.

² For limitations of percent increase in average salaries as a measure of change in salary scales, see p. 4 of text.

³ Occupational employment estimates relate to the total in all establishments within scope of the study and not the number actually surveyed. For further explanation, see p. 29 of appendix A.

⁴ Salaries reported relate to the standard salaries that were paid for standard work schedules; i. e., to the straight-time salary corresponding to the employee's normal work schedule excluding overtime hours.

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

Table 2. Percent Distribution of Employees¹ in Selected Professional and Administrative Occupations² by Average Monthly Salaries, February-March 1964

Average monthly salaries	Accountants					Auditors				Chief accountants			
	I	II	III	IV	V	I	II	III	IV	I	II	III	IV
Under \$ 375	1.0	-	-	-	-	-	-	-	-	-	-	-	-
\$ 375 and under \$ 400	1.6	(0.7)	-	-	-	5.7	-	-	-	-	-	-	-
\$ 400 and under \$ 425	4.2	1.1	-	-	-	7.8	0.9	-	-	-	-	-	-
\$ 425 and under \$ 450	4.6	3.6	-	-	-	18.2	2.6	-	-	-	-	-	-
\$ 450 and under \$ 475	10.6	5.5	-	-	-	16.6	5.6	(0.9)	-	-	-	-	-
\$ 475 and under \$ 500	11.8	6.7	(1.8)	-	-	10.8	5.1	1.0	-	-	-	-	-
\$ 500 and under \$ 525	16.0	10.0	3.1	-	-	16.1	8.7	2.5	-	-	-	-	-
\$ 525 and under \$ 550	18.2	13.0	3.7	-	-	8.7	6.8	3.5	-	-	-	-	-
\$ 550 and under \$ 575	14.0	13.3	7.2	(0.9)	-	4.8	10.0	4.6	-	-	-	-	-
\$ 575 and under \$ 600	7.8	12.0	7.8	1.0	-	3.4	14.6	4.0	(0.4)	-	-	-	-
\$ 600 and under \$ 625	4.6	10.5	11.7	1.6	-	3.4	9.7	7.4	1.3	-	-	-	-
\$ 625 and under \$ 650	3.3	7.5	11.7	4.5	-	1.8	7.3	6.6	6.5	1.1	-	-	-
\$ 650 and under \$ 675	1.7	5.6	14.1	4.8	-	1.1	6.3	10.0	4.1	16.5	1.4	-	-
\$ 675 and under \$ 700	(.7)	3.6	10.4	6.6	-	(1.4)	6.5	7.7	2.7	-	-	-	-
\$ 700 and under \$ 725	-	2.6	7.6	8.5	(2.1)	-	5.7	8.5	4.0	9.0	.9	-	-
\$ 725 and under \$ 750	-	2.2	5.3	7.8	1.6	-	1.9	7.0	4.8	9.3	-	-	-
\$ 750 and under \$ 775	-	1.1	4.7	11.6	4.2	-	3.1	7.5	6.2	-	.4	-	-
\$ 775 and under \$ 800	-	(1.0)	2.5	8.4	4.3	-	1.5	5.1	6.9	8.6	2.8	-	-
\$ 800 and under \$ 825	-	-	3.3	10.5	4.0	-	1.7	6.9	8.0	-	2.6	-	-
\$ 825 and under \$ 850	-	-	1.7	7.1	7.1	-	(1.9)	3.8	8.5	9.3	7.9	4.2	1.5
\$ 850 and under \$ 875	-	-	1.1	4.8	7.8	-	-	4.5	4.6	5.7	.9	1.0	-
\$ 875 and under \$ 900	-	-	(2.3)	5.5	6.4	-	-	2.2	6.5	.7	3.9	3.6	-
\$ 900 and under \$ 925	-	-	-	3.8	7.2	-	-	1.9	8.4	1.8	6.1	.6	.4
\$ 925 and under \$ 950	-	-	-	2.8	5.8	-	-	1.5	2.3	13.3	5.6	1.9	-
\$ 950 and under \$ 975	-	-	-	2.6	6.7	-	-	1.0	4.0	3.2	1.1	4.6	1.9
\$ 975 and under \$ 1,000	-	-	-	1.4	5.1	-	-	.3	1.7	4.7	3.4	1.2	1.5
\$ 1,000 and under \$ 1,050	-	-	-	3.0	12.1	-	-	1.1	6.7	4.7	15.6	9.4	1.5
\$ 1,050 and under \$ 1,100	-	-	-	1.4	8.4	-	-	(.6)	4.1	1.1	13.0	10.7	3.8
\$ 1,100 and under \$ 1,150	-	-	-	(1.3)	5.1	-	-	-	3.8	1.1	7.2	13.9	18.5
\$ 1,150 and under \$ 1,200	-	-	-	-	3.5	-	-	-	1.4	1.4	3.1	5.8	.4
\$ 1,200 and under \$ 1,250	-	-	-	-	2.7	-	-	-	(3.0)	5.7	6.9	5.4	8.8
\$ 1,250 and under \$ 1,300	-	-	-	-	2.5	-	-	-	-	1.4	4.7	7.9	10.0
\$ 1,300 and under \$ 1,350	-	-	-	-	.9	-	-	-	-	-	7.9	12.8	9.6
\$ 1,350 and under \$ 1,400	-	-	-	-	1.1	-	-	-	-	-	1.7	3.7	8.1
\$ 1,400 and under \$ 1,450	-	-	-	-	(1.5)	-	-	-	-	-	1.4	.7	4.6
\$ 1,450 and under \$ 1,500	-	-	-	-	-	-	-	-	-	-	(1.7)	1.6	7.3
\$ 1,500 and under \$ 1,550	-	-	-	-	-	-	-	-	-	1.4	-	6.6	6.5
\$ 1,550 and under \$ 1,600	-	-	-	-	-	-	-	-	-	-	-	3.0	3.1
\$ 1,600 and under \$ 1,650	-	-	-	-	-	-	-	-	-	-	-	(1.1)	3.1
\$ 1,650 and under \$ 1,700	-	-	-	-	-	-	-	-	-	-	-	-	3.1
\$ 1,700 and under \$ 1,750	-	-	-	-	-	-	-	-	-	-	-	-	.4
\$ 1,750 and under \$ 1,800	-	-	-	-	-	-	-	-	-	-	-	-	2.7
\$ 1,800 and under \$ 1,850	-	-	-	-	-	-	-	-	-	-	-	-	-
\$ 1,850 and under \$ 1,900	-	-	-	-	-	-	-	-	-	-	-	-	-
\$ 1,900 and over	-	-	-	-	-	-	-	-	-	-	-	-	3.1
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	4,099	8,513	18,051	13,337	5,521	435	2,017	3,767	2,262	279	1,107	670	260
Average monthly salaries	\$520	\$570	\$659	\$792	\$964	\$486	\$599	\$710	\$857	\$858	\$1,048	\$1,177	\$1,329

See footnotes at end of table.

Table 2. Percent Distribution of Employees¹ in Selected Professional and Administrative Occupations² by Average Monthly Salaries, February-March 1964—Continued

Average monthly salaries	Attorneys						
	I	II	III	IV	V	VI	VII
\$425 and under \$450	1.1	-	-	-	-	-	-
\$450 and under \$475	9.5	-	-	-	-	-	-
\$475 and under \$500	2.1	-	-	-	-	-	-
\$500 and under \$525	.7	(0.2)	-	-	-	-	-
\$525 and under \$550	10.9	1.9	-	-	-	-	-
\$550 and under \$575	19.0	7.9	-	-	-	-	-
\$575 and under \$600	2.5	4.1	-	-	-	-	-
\$600 and under \$625	22.9	8.0	(0.3)	-	-	-	-
\$625 and under \$650	5.3	6.2	5.4	-	-	-	-
\$650 and under \$675	2.1	10.2	8.3	-	-	-	-
\$675 and under \$700	1.1	9.4	2.1	-	-	-	-
\$700 and under \$725	9.5	10.2	4.7	-	-	-	-
\$725 and under \$750	-	6.6	3.9	(0.7)	-	-	-
\$750 and under \$775	8.1	7.3	6.7	1.7	-	-	-
\$775 and under \$800	.7	5.8	4.5	2.7	-	-	-
\$800 and under \$825	2.5	10.5	4.0	3.4	-	-	-
\$825 and under \$850	.7	3.1	9.4	4.1	2.0	-	-
\$850 and under \$875	-	1.1	3.8	3.3	-	-	-
\$875 and under \$900	-	1.5	4.6	1.5	-	-	-
\$900 and under \$925	-	1.3	7.9	9.3	.4	-	-
\$925 and under \$950	1.4	1.4	2.9	3.6	.6	-	-
\$950 and under \$975	-	(3.1)	4.6	3.9	.4	-	-
\$975 and under \$1,000	-	-	2.5	6.0	2.0	(1.3)	-
\$1,000 and under \$1,050	-	-	8.8	15.2	6.9	2.1	-
\$1,050 and under \$1,100	-	-	5.0	7.0	5.5	.7	-
\$1,100 and under \$1,150	-	-	3.4	7.5	6.8	1.4	-
\$1,150 and under \$1,200	-	-	3.5	3.4	9.5	12.3	1.3
\$1,200 and under \$1,250	-	-	1.2	4.8	4.5	5.2	-
\$1,250 and under \$1,300	-	-	(2.3)	8.4	9.2	4.4	.2
\$1,300 and under \$1,350	-	-	-	2.2	7.4	3.2	.6
\$1,350 and under \$1,400	-	-	-	3.0	9.0	1.1	7.1
\$1,400 and under \$1,450	-	-	-	1.6	7.5	10.2	1.1
\$1,450 and under \$1,500	-	-	-	2.1	5.5	4.7	1.1
\$1,500 and under \$1,550	-	-	-	2.1	6.0	11.0	3.6
\$1,550 and under \$1,600	-	-	-	(2.4)	2.5	4.8	1.5
\$1,600 and under \$1,650	-	-	-	-	2.4	6.1	3.0
\$1,650 and under \$1,700	-	-	-	-	.9	5.2	6.2
\$1,700 and under \$1,750	-	-	-	-	1.9	2.7	5.6
\$1,750 and under \$1,800	-	-	-	-	3.1	4.4	5.6
\$1,800 and under \$1,850	-	-	-	-	.7	1.8	7.5
\$1,850 and under \$1,900	-	-	-	-	1.7	.8	2.1
\$1,900 and under \$1,950	-	-	-	-	1.1	2.0	2.4
\$1,950 and under \$2,000	-	-	-	-	(2.6)	2.3	2.6
\$2,000 and under \$2,050	-	-	-	-	-	4.8	3.6
\$2,050 and under \$2,100	-	-	-	-	-	1.1	4.3
\$2,100 and under \$2,150	-	-	-	-	-	3.5	1.9
\$2,150 and under \$2,200	-	-	-	-	-	1.3	2.6
\$2,200 and under \$2,250	-	-	-	-	-	-	6.2
\$2,250 and under \$2,300	-	-	-	-	-	1.0	4.1
\$2,300 and under \$2,350	-	-	-	-	-	(.7)	3.0
\$2,350 and under \$2,400	-	-	-	-	-	-	3.4
\$2,400 and under \$2,450	-	-	-	-	-	-	.9
\$2,450 and under \$2,500	-	-	-	-	-	-	.4
\$2,500 and under \$2,550	-	-	-	-	-	-	3.4
\$2,550 and under \$2,600	-	-	-	-	-	-	1.3
\$2,600 and under \$2,650	-	-	-	-	-	-	3.2
\$2,650 and under \$2,700	-	-	-	-	-	-	2.6
\$2,700 and over	-	-	-	-	-	-	7.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of employees	284	874	998	1,424	1,168	709	467
Average monthly salaries	\$604	\$711	\$872	\$1,068	\$1,336	\$1,535	\$2,024

See footnotes at end of table.

Table 2. Percent Distribution of Employees¹ in Selected Professional and Administrative Occupations² by Average Monthly Salaries, February-March 1964—Continued

Average monthly salaries	Managers, office services				Job analysts				Directors of personnel			
	I	II	III	IV	I	II	III	IV	I	II	III	IV
\$ 350 and under \$ 375	-	-	-	-	5.5	0.6	-	-	-	-	-	-
\$ 375 and under \$ 400	-	-	-	-	8.3	1.7	-	-	-	-	-	-
\$ 400 and under \$ 425	-	-	-	-	.9	1.7	-	-	-	-	-	-
\$ 425 and under \$ 450	-	-	-	-	-	1.1	-	-	-	-	-	-
\$ 450 and under \$ 475	4.8	-	-	-	11.9	.6	-	-	-	-	-	-
\$ 475 and under \$ 500	1.6	-	-	-	1.8	5.4	-	-	-	-	-	-
\$ 500 and under \$ 525	5.4	0.5	-	-	4.6	7.9	(0.8)	-	-	-	-	-
\$ 525 and under \$ 550	4.8	1.3	-	-	5.5	6.2	4.0	-	-	-	-	-
\$ 550 and under \$ 575	16.1	1.6	(0.3)	-	15.6	9.1	3.2	-	5.1	-	-	-
\$ 575 and under \$ 600	13.4	1.3	1.8	-	13.8	6.5	3.4	0.2	-	-	-	-
\$ 600 and under \$ 625	9.1	4.4	-	-	8.3	18.4	6.3	2.0	1.4	-	-	-
\$ 625 and under \$ 650	9.7	6.7	1.2	-	9.2	7.1	8.9	.9	2.2	1.1	-	-
\$ 650 and under \$ 675	5.4	4.4	.9	-	5.5	6.8	11.2	1.8	14.4	1.9	-	-
\$ 675 and under \$ 700	4.6	2.1	.9	-	4.6	4.5	11.7	3.3	2.8	3.5	1.4	-
\$ 700 and under \$ 725	8.6	11.0	3.0	-	1.8	6.5	9.5	8.6	12.7	6.0	-	-
\$ 725 and under \$ 750	8.1	9.7	4.2	-	2.8	2.8	7.3	4.2	6.2	3.0	-	-
\$ 750 and under \$ 775	1.1	7.7	3.3	-	-	2.8	8.2	7.3	.9	2.2	.2	-
\$ 775 and under \$ 800	1.6	12.8	2.7	6.5	-	2.0	5.9	6.4	.5	7.5	.7	-
\$ 800 and under \$ 825	2.4	6.4	14.0	2.6	-	3.1	6.2	7.3	8.5	6.5	2.1	-
\$ 825 and under \$ 850	-	7.4	7.8	1.3	-	1.7	3.0	8.6	9.0	7.8	4.2	-
\$ 850 and under \$ 875	2.4	5.8	11.3	-	-	1.7	4.1	10.0	5.1	8.5	1.8	-
\$ 875 and under \$ 900	(.8)	7.4	3.3	3.9	-	-	1.6	5.8	5.1	4.6	1.9	-
\$ 900 and under \$ 925	-	2.0	5.4	2.6	-	1.7	1.4	8.7	7.5	5.1	4.5	(1.3)
\$ 925 and under \$ 950	-	.8	2.1	-	-	-	.5	4.9	-	4.9	2.6	1.6
\$ 950 and under \$ 975	-	.2	6.0	-	-	-	.1	8.0	-	2.8	3.6	-
\$ 975 and under \$ 1,000	-	2.5	2.7	1.3	-	-	1.1	3.1	.2	2.3	5.6	1.6
\$ 1,000 and under \$ 1,050	-	1.6	8.7	28.6	-	-	(1.5)	4.4	12.3	10.4	6.8	2.1
\$ 1,050 and under \$ 1,100	-	.3	6.6	9.1	-	-	-	2.6	5.1	3.3	9.5	2.7
\$ 1,100 and under \$ 1,150	-	1.8	5.7	14.3	-	-	-	(2.0)	(.9)	2.4	4.6	6.1
\$ 1,150 and under \$ 1,200	-	-	3.3	13.0	-	-	-	-	-	4.4	7.0	10.7
\$ 1,200 and under \$ 1,250	-	-	.6	3.9	-	-	-	-	-	3.6	9.5	16.6
\$ 1,250 and under \$ 1,300	-	-	2.4	5.2	-	-	-	-	-	3.2	7.2	7.2
\$ 1,300 and under \$ 1,350	-	-	(2.1)	-	-	-	-	-	-	1.4	7.5	7.5
\$ 1,350 and under \$ 1,400	-	-	-	-	-	-	-	-	-	1.2	3.4	4.8
\$ 1,400 and under \$ 1,450	-	-	-	-	-	-	-	-	-	(2.5)	2.1	3.7
\$ 1,450 and under \$ 1,500	-	-	-	2.6	-	-	-	-	-	-	2.5	3.7
\$ 1,500 and under \$ 1,550	-	-	-	2.6	-	-	-	-	-	-	5.9	5.6
\$ 1,550 and under \$ 1,600	-	-	-	2.6	-	-	-	-	-	-	1.2	2.1
\$ 1,600 and under \$ 1,650	-	-	-	-	-	-	-	-	-	-	.5	1.3
\$ 1,650 and under \$ 1,700	-	-	-	-	-	-	-	-	-	-	1.9	2.4
\$ 1,700 and under \$ 1,750	-	-	-	-	-	-	-	-	-	-	(1.6)	4.8
\$ 1,750 and under \$ 1,800	-	-	-	-	-	-	-	-	-	-	-	2.4
\$ 1,800 and under \$ 1,850	-	-	-	-	-	-	-	-	-	-	-	6.4
\$ 1,850 and under \$ 1,900	-	-	-	-	-	-	-	-	-	-	-	.3
\$ 1,900 and under \$ 1,950	-	-	-	-	-	-	-	-	-	-	-	1.3
\$ 1,950 and over	-	-	-	-	-	-	-	-	-	-	-	3.5
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	372	608	335	77	109	353	729	549	644	1,327	1,080	374
Average monthly salaries	\$625	\$770	\$916	\$1,079	\$548	\$621	\$712	\$847	\$805	\$930	\$1,158	\$1,376

See footnotes at end of table.

Table 2. Percent Distribution of Employees¹ in Selected Professional and Administrative Occupations² by Average Monthly Salaries, February-March 1964—Continued

Average monthly salaries	Chemists							
	I	II	III	IV	V	VI	VII	VIII
Under \$ 400.....	1.1	-	-	-	-	-	-	-
\$ 400 and under \$ 425.....	3.0	-	-	-	-	-	-	-
\$ 425 and under \$ 450.....	7.7	(0.9)	-	-	-	-	-	-
\$ 450 and under \$ 475.....	4.9	2.1	-	-	-	-	-	-
\$ 475 and under \$ 500.....	7.5	3.7	(0.7)	-	-	-	-	-
\$ 500 and under \$ 525.....	16.8	6.4	1.2	-	-	-	-	-
\$ 525 and under \$ 550.....	10.6	9.1	1.6	-	-	-	-	-
\$ 550 and under \$ 575.....	16.7	10.9	2.3	-	-	-	-	-
\$ 575 and under \$ 600.....	13.1	14.3	4.6	-	-	-	-	-
\$ 600 and under \$ 625.....	9.9	14.0	6.9	-	-	-	-	-
\$ 625 and under \$ 650.....	3.3	9.7	8.4	(2.0)	-	-	-	-
\$ 650 and under \$ 675.....	2.4	8.5	10.2	1.9	-	-	-	-
\$ 675 and under \$ 700.....	1.2	4.7	10.8	1.7	-	-	-	-
\$ 700 and under \$ 725.....	1.2	4.8	11.5	3.6	-	-	-	-
\$ 725 and under \$ 750.....	(.6)	4.1	8.5	4.7	-	-	-	-
\$ 750 and under \$ 775.....	-	2.8	8.2	6.8	(1.6)	-	-	-
\$ 775 and under \$ 800.....	-	.9	4.6	7.5	1.0	-	-	-
\$ 800 and under \$ 825.....	-	1.3	5.6	6.7	1.7	-	-	-
\$ 825 and under \$ 850.....	-	(1.7)	3.1	7.6	3.2	-	-	-
\$ 850 and under \$ 875.....	-	-	2.9	8.5	4.9	-	-	-
\$ 875 and under \$ 900.....	-	-	2.2	5.8	4.2	(0.6)	-	-
\$ 900 and under \$ 925.....	-	-	1.7	7.3	5.4	1.3	-	-
\$ 925 and under \$ 950.....	-	-	1.6	5.7	4.3	2.0	-	-
\$ 950 and under \$ 975.....	-	-	(3.3)	5.0	6.0	2.9	-	-
\$ 975 and under \$ 1,000.....	-	-	-	4.2	5.2	1.4	-	-
\$ 1,000 and under \$ 1,050.....	-	-	-	7.9	11.8	8.6	-	-
\$ 1,050 and under \$ 1,100.....	-	-	-	5.8	12.5	10.9	(1.7)	-
\$ 1,100 and under \$ 1,150.....	-	-	-	3.4	9.3	8.5	2.7	-
\$ 1,150 and under \$ 1,200.....	-	-	-	1.9	8.5	10.0	6.7	-
\$ 1,200 and under \$ 1,250.....	-	-	-	1.1	5.9	9.7	8.9	(0.6)
\$ 1,250 and under \$ 1,300.....	-	-	-	(1.1)	4.9	10.0	14.0	1.4
\$ 1,300 and under \$ 1,350.....	-	-	-	-	4.0	9.4	8.4	3.4
\$ 1,350 and under \$ 1,400.....	-	-	-	-	2.9	6.8	5.4	.6
\$ 1,400 and under \$ 1,450.....	-	-	-	-	(2.8)	4.7	9.1	6.8
\$ 1,450 and under \$ 1,500.....	-	-	-	-	-	3.6	7.0	.6
\$ 1,500 and under \$ 1,550.....	-	-	-	-	-	3.7	6.8	8.5
\$ 1,550 and under \$ 1,600.....	-	-	-	-	-	1.5	6.2	9.3
\$ 1,600 and under \$ 1,650.....	-	-	-	-	-	1.5	3.7	6.2
\$ 1,650 and under \$ 1,700.....	-	-	-	-	-	1.3	5.2	11.9
\$ 1,700 and under \$ 1,750.....	-	-	-	-	-	(1.4)	3.3	11.0
\$ 1,750 and under \$ 1,800.....	-	-	-	-	-	-	2.0	6.5
\$ 1,800 and under \$ 1,850.....	-	-	-	-	-	-	1.1	8.8
\$ 1,850 and under \$ 1,900.....	-	-	-	-	-	-	1.2	1.1
\$ 1,900 and under \$ 1,950.....	-	-	-	-	-	-	1.7	3.7
\$ 1,950 and under \$ 2,000.....	-	-	-	-	-	-	1.0	3.4
\$ 2,000 and under \$ 2,050.....	-	-	-	-	-	-	.7	1.4
\$ 2,050 and under \$ 2,100.....	-	-	-	-	-	-	1.4	.3
\$ 2,100 and under \$ 2,150.....	-	-	-	-	-	-	.2	2.8
\$ 2,150 and under \$ 2,200.....	-	-	-	-	-	-	1.0	1.4
\$ 2,200 and under \$ 2,250.....	-	-	-	-	-	-	(.5)	1.4
\$ 2,250 and under \$ 2,300.....	-	-	-	-	-	-	-	2.5
\$ 2,300 and over.....	-	-	-	-	-	-	-	6.3
Total.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of employees.....	1,472	4,256	7,493	7,947	5,466	2,971	1,096	353
Average monthly salaries.....	\$ 538	\$ 610	\$ 717	\$ 886	\$ 1,062	\$ 1,229	\$ 1,444	\$ 1,757

See footnotes at end of table.

Table 2. Percent Distribution of Employees¹ in Selected Professional and Administrative Occupations² by Average Monthly Salaries, February-March 1964—Continued

Average monthly salaries	Engineers							
	I	II	III	IV	V	VI	VII	VIII
Under \$400	-	-	-	-	-	-	-	-
\$400 and under \$425	-	-	-	-	-	-	-	-
\$425 and under \$450	-	-	-	-	-	-	-	-
\$450 and under \$475	-	-	-	-	-	-	-	-
\$475 and under \$500	(1.0)	-	-	-	-	-	-	-
\$500 and under \$525	2.4	(1.1)	-	-	-	-	-	-
\$525 and under \$550	4.5	1.4	-	-	-	-	-	-
\$550 and under \$575	9.3	2.7	(0.7)	-	-	-	-	-
\$575 and under \$600	21.9	6.6	1.0	-	-	-	-	-
\$600 and under \$625	24.7	13.8	2.2	-	-	-	-	-
\$625 and under \$650	15.6	16.5	3.7	-	-	-	-	-
\$650 and under \$675	11.0	16.3	6.9	(1.1)	-	-	-	-
\$675 and under \$700	4.4	13.7	8.5	1.3	-	-	-	-
\$700 and under \$725	2.5	9.2	9.6	2.3	-	-	-	-
\$725 and under \$750	1.8	7.0	10.5	2.9	-	-	-	-
\$750 and under \$775	(.8)	5.0	12.0	4.4	(1.1)	-	-	-
\$775 and under \$800	-	2.4	9.4	5.2	1.0	-	-	-
\$800 and under \$825	-	1.9	9.7	6.5	1.6	-	-	-
\$825 and under \$850	-	1.5	7.5	7.8	4.0	(0.9)	-	-
\$850 and under \$875	-	(1.0)	6.0	8.0	4.7	1.2	-	-
\$875 and under \$900	-	-	4.2	7.6	3.8	1.1	-	-
\$900 and under \$925	-	-	4.0	8.3	4.1	2.3	-	-
\$925 and under \$950	-	-	1.7	7.1	4.0	2.1	-	-
\$950 and under \$975	-	-	1.1	6.6	5.2	2.6	-	-
\$975 and under \$1,000	-	-	(1.4)	5.7	4.8	2.2	(0.5)	-
\$1,000 and under \$1,050	-	-	-	9.8	12.9	6.6	1.0	-
\$1,050 and under \$1,100	-	-	-	5.8	11.3	7.7	.8	-
\$1,100 and under \$1,150	-	-	-	4.0	10.4	7.1	2.5	-
\$1,150 and under \$1,200	-	-	-	2.3	8.5	10.1	3.4	-
\$1,200 and under \$1,250	-	-	-	2.0	6.2	8.7	6.2	(2.8)
\$1,250 and under \$1,300	-	-	-	(1.4)	4.9	10.4	7.5	2.4
\$1,300 and under \$1,350	-	-	-	-	3.7	9.2	9.1	2.8
\$1,350 and under \$1,400	-	-	-	-	2.5	6.9	8.3	3.6
\$1,400 and under \$1,450	-	-	-	-	2.1	5.5	9.3	5.1
\$1,450 and under \$1,500	-	-	-	-	1.4	4.4	8.1	4.7
\$1,500 and under \$1,550	-	-	-	-	(1.8)	3.5	9.4	7.4
\$1,550 and under \$1,600	-	-	-	-	-	2.4	7.5	8.8
\$1,600 and under \$1,650	-	-	-	-	-	1.7	6.2	8.7
\$1,650 and under \$1,700	-	-	-	-	-	1.4	6.1	9.4
\$1,700 and under \$1,750	-	-	-	-	-	(2.0)	2.6	5.0
\$1,750 and under \$1,800	-	-	-	-	-	-	2.8	5.6
\$1,800 and under \$1,850	-	-	-	-	-	-	2.4	6.2
\$1,850 and under \$1,900	-	-	-	-	-	-	1.2	3.3
\$1,900 and under \$1,950	-	-	-	-	-	-	2.0	5.9
\$1,950 and under \$2,000	-	-	-	-	-	-	(2.9)	3.9
\$2,000 and under \$2,050	-	-	-	-	-	-	-	3.2
\$2,050 and under \$2,100	-	-	-	-	-	-	-	2.9
\$2,100 and under \$2,150	-	-	-	-	-	-	-	.9
\$2,150 and under \$2,200	-	-	-	-	-	-	-	1.4
\$2,200 and under \$2,250	-	-	-	-	-	-	-	.9
\$2,250 and under \$2,300	-	-	-	-	-	-	-	.8
\$2,300 and over	-	-	-	-	-	-	-	4.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of employees	8,871	26,093	71,245	89,652	52,409	28,312	9,073	2,215
Average monthly salaries	\$612	\$667	\$767	\$918	\$1,077	\$1,235	\$1,471	\$1,707

¹ 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 most cases, in the interval above or below the extreme interval containing at least 1 percent. The percentages representing these employees are shown in parentheses.

² For scope of study, see table in appendix A.

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

Table 3. Percent Distribution of Engineering Technicians¹ by Average Monthly Salaries, February-March 1964

Average monthly salaries	Engineering technicians				
	I	II	III	IV	V
\$275 and under \$300	0.2	-	-	-	-
\$300 and under \$325	1.8	0.1	-	-	-
\$325 and under \$350	11.7	1.1	-	-	-
\$350 and under \$375	17.6	2.8	-	-	-
\$375 and under \$400	15.8	4.1	(1.2)	-	-
\$400 and under \$425	14.0	7.1	1.9	-	-
\$425 and under \$450	16.4	10.4	3.7	-	-
\$450 and under \$475	12.5	18.8	5.3	(1.7)	-
\$475 and under \$500	6.7	16.2	8.0	2.5	-
\$500 and under \$525	2.9	13.6	12.4	3.8	(0.9)
\$525 and under \$550	.5	11.0	14.8	6.4	1.4
\$550 and under \$575	-	7.0	13.6	7.7	1.7
\$575 and under \$600	-	4.0	11.2	13.3	3.2
\$600 and under \$625	-	2.1	11.0	16.4	5.1
\$625 and under \$650	-	(1.6)	8.3	13.4	9.7
\$650 and under \$675	-	-	3.8	11.1	13.9
\$675 and under \$700	-	-	2.3	7.7	12.1
\$700 and under \$725	-	-	.8	6.0	11.0
\$725 and under \$750	-	-	1.1	4.5	9.6
\$750 and under \$775	-	-	(.7)	2.3	9.5
\$775 and under \$800	-	-	-	1.9	7.4
\$800 and under \$825	-	-	-	(1.4)	3.6
\$825 and under \$850	-	-	-	-	2.8
\$850 and under \$875	-	-	-	-	2.1
\$875 and under \$900	-	-	-	-	1.5
\$900 and over	-	-	-	-	4.4
Total	100.0	100.0	100.0	100.0	100.0
Number of employees	3,573	11,065	17,820	22,967	10,894
Average monthly salaries	\$406	\$485	\$556	\$626	\$713

¹ For scope of study, see table in appendix A. To avoid showing small proportions of employees scattered at or near the extremes of the distributions for some occupations, the percentages of employees in these intervals have been accumulated and are shown, in most cases, 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 4. Percent Distribution of Employees¹ in Selected Drafting and Clerical Occupations² by Average Weekly Salaries, February-March 1964

Average weekly salaries	Drafts- men, junior	Drafts- men, senior	Tracers	Bookkeeping- machine operators		Clerks, accounting		Clerks, file		
				I	II	I	II	I	II	III
Under \$45	-	-	-	0.2	-	-	-	1.5	1.1	-
\$45 and under \$50	-	-	-	1.4	0.1	(0.7)	-	6.0	2.5	0.2
\$50 and under \$55	-	-	(0.7)	10.2	1.2	3.4	-	29.9	11.4	1.0
\$55 and under \$60	(0.3)	-	4.5	14.1	2.1	6.6	-	21.0	17.4	3.5
\$60 and under \$65	1.0	-	7.9	16.9	5.5	10.4	(1.1)	18.7	16.5	6.9
\$65 and under \$70	1.8	-	10.5	14.3	8.0	10.9	1.6	10.2	13.3	9.1
\$70 and under \$75	3.7	-	7.5	12.7	9.5	11.4	2.6	4.0	12.6	11.1
\$75 and under \$80	4.5	-	10.7	9.3	10.5	10.7	4.4	3.4	8.0	10.7
\$80 and under \$85	6.8	-	18.6	7.1	12.1	12.0	6.5	1.6	5.4	13.3
\$85 and under \$90	7.4	(0.9)	7.6	4.7	11.6	8.1	8.3	1.5	3.9	9.6
\$90 and under \$95	10.7	1.2	5.6	3.5	11.8	6.1	9.2	1.4	3.3	9.1
\$95 and under \$100	9.4	1.6	7.6	2.1	8.3	4.7	8.2	(.7)	1.7	5.6
\$100 and under \$105	12.0	4.2	9.8	1.7	7.7	4.5	9.0	-	1.6	6.3
\$105 and under \$110	7.8	4.9	5.7	(1.9)	4.4	3.9	9.1	-	(1.4)	5.2
\$110 and under \$115	7.5	6.9	1.6	-	3.0	2.0	7.9	-	-	2.4
\$115 and under \$120	6.6	9.4	1.1	-	1.7	1.7	6.7	-	-	2.4
\$120 and under \$125	5.1	9.7	(.4)	-	1.6	1.0	6.0	-	-	1.0
\$125 and under \$130	4.6	8.0	-	-	(1.1)	1.0	5.2	-	-	(2.6)
\$130 and under \$135	3.1	9.1	-	-	-	(.9)	4.6	-	-	-
\$135 and under \$140	1.9	7.4	-	-	-	-	3.1	-	-	-
\$140 and under \$145	1.5	6.7	-	-	-	-	1.9	-	-	-
\$145 and under \$150	1.9	5.1	-	-	-	-	1.3	-	-	-
\$150 and under \$160	1.7	8.6	-	-	-	-	2.1	-	-	-
\$160 and under \$170	(.7)	6.9	-	-	-	-	1.1	-	-	-
\$170 and under \$180	-	4.0	-	-	-	-	(.4)	-	-	-
\$180 and under \$190	-	2.3	-	-	-	-	-	-	-	-
\$190 and under \$200	-	1.7	-	-	-	-	-	-	-	-
\$200 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
Number of employees	18,466	37,583	2,532	14,193	4,348	52,815	37,626	16,937	21,865	7,401
Average weekly salaries	\$103.50	\$134.50	\$83.00	\$69.50	\$85.50	\$80.00	\$106.00	\$59.50	\$67.50	\$84.50

See footnotes at end of table.

Table 4. Percent Distribution of Employees¹ in Selected Drafting and Clerical Occupations² by Average Weekly Salaries, February-March 1964—Continued

Average weekly salaries	Key punch operators		Office boys or girls	Stenographers, general	Stenographers, senior	Switch-board operators	Switch-board operators, special	Tabulating-machine operators			Typists	
	I	II						I	II	III	I	II
Under \$45-----	-	-	0.2	-	-	0.8	-	-	-	-	0.1	-
\$45 and under \$50-----	(0.7)	-	2.6	(0.2)	-	1.1	-	(0.3)	-	-	1.7	-
\$50 and under \$55-----	4.6	(0.3)	18.3	1.4	-	3.7	-	1.6	-	-	9.8	(0.7)
\$55 and under \$60-----	8.6	1.4	20.2	3.9	(0.7)	3.4	1.5	7.9	(1.0)	-	14.1	2.9
\$60 and under \$65-----	13.4	3.2	19.7	7.6	1.3	6.2	2.4	11.8	1.7	-	17.8	6.8
\$65 and under \$70-----	14.3	6.6	13.4	10.0	3.1	7.4	2.5	13.3	3.4	-	17.0	10.4
\$70 and under \$75-----	13.5	10.5	7.8	12.0	5.9	10.6	5.1	13.3	4.9	(0.6)	13.8	14.0
\$75 and under \$80-----	10.8	11.7	4.7	12.8	8.0	9.8	10.2	14.1	6.5	1.2	8.7	15.1
\$80 and under \$85-----	9.4	13.2	3.0	11.8	11.3	10.8	10.6	9.8	10.5	2.7	5.8	13.4
\$85 and under \$90-----	6.4	11.9	5.0	9.8	11.4	11.5	8.5	8.1	10.2	3.3	3.2	10.4
\$90 and under \$95-----	5.0	11.1	2.4	8.4	13.6	12.4	18.6	6.2	13.4	6.1	2.6	6.9
\$95 and under \$100-----	6.5	11.6	1.0	7.4	11.2	9.1	9.5	3.7	10.7	7.8	3.7	7.6
\$100 and under \$105-----	3.7	9.3	(1.7)	8.4	12.9	5.7	18.5	3.5	11.2	9.9	(1.6)	6.0
\$105 and under \$110-----	1.5	4.6	-	3.2	8.6	3.9	6.9	4.0	8.4	11.5	-	3.2
\$110 and under \$115-----	(1.6)	2.0	-	1.5	4.5	2.1	3.3	1.6	5.9	11.3	-	1.4
\$115 and under \$120-----	-	1.5	-	(1.6)	4.1	(1.5)	(2.5)	(.9)	4.7	9.7	-	(1.1)
\$120 and under \$125-----	-	(1.0)	-	-	1.9	-	-	-	3.7	8.4	-	-
\$125 and under \$130-----	-	-	-	-	(1.4)	-	-	-	2.0	8.3	-	-
\$130 and under \$135-----	-	-	-	-	-	-	-	-	(1.7)	6.1	-	-
\$135 and under \$140-----	-	-	-	-	-	-	-	-	-	4.8	-	-
\$140 and under \$145-----	-	-	-	-	-	-	-	-	-	2.7	-	-
\$145 and under \$150-----	-	-	-	-	-	-	-	-	-	1.7	-	-
\$150 and under \$160-----	-	-	-	-	-	-	-	-	-	2.7	-	-
\$160 and under \$170-----	-	-	-	-	-	-	-	-	-	1.1	-	-
\$170 and under \$180-----	-	-	-	-	-	-	-	-	-	(.2)	-	-
\$180 and under \$190-----	-	-	-	-	-	-	-	-	-	-	-	-
\$190 and under \$200-----	-	-	-	-	-	-	-	-	-	-	-	-
\$200 and over-----	-	-	-	-	-	-	-	-	-	-	-	-
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-----	32,504	22,547	22,620	68,838	41,743	16,363	919	9,218	17,272	8,876	60,706	36,219
Average weekly salaries-----	\$75.00	\$86.50	\$64.50	\$82.00	\$93.00	\$82.00	\$91.00	\$77.50	\$94.50	\$114.00	\$68.50	\$81.50

¹ 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 most cases, in the interval above or below the extreme interval containing at least 1 percent. The percentages representing these employees are shown in parentheses.

² For scope of study, see table in appendix A.

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

Table 5. Percent Distribution of Employees in Selected Professional, Administrative, Technical, and Clerical Occupations¹ by Industry Division,² February-March 1964

Occupation	Manu- facturing	Public utilities ³	Wholesale trade	Retail trade	Finance, insurance, and real estate	Selected services ⁴
<u>Professional and Administrative</u>						
Accountants -----	71	14	4	(⁵)	6	(⁵)
Auditors -----	42	23	4	(⁵)	27	(⁵)
Chief accountants -----	72	10	4	4	9	(⁵)
Attorneys -----	30	18	8	(⁵)	42	(⁵)
Managers, office services -----	62	6	9	(⁵)	20	(⁵)
Job analysts -----	78	4	(⁵)	(⁵)	15	(⁵)
Directors of personnel -----	71	4	5	6	12	(⁵)
Chemists -----	90	(⁵)	(⁵)	(⁵)	(⁵)	8
Engineers -----	82	10	(⁵)	(⁵)	(⁵)	8
<u>Technical</u>						
Engineering technicians -----	84	4	(⁵)	(⁵)	(⁵)	12
Draftsmen -----	81	9	(⁵)	(⁵)	(⁵)	8
<u>Clerical</u>						
Bookkeeping-machine operators ---	33	(⁵)	5	12	47	(⁵)
Clerks, accounting -----	43	23	7	13	14	(⁵)
Clerks, file -----	30	8	5	11	45	(⁵)
Keypunch operators -----	46	17	6	7	23	(⁵)
Office boys or girls -----	39	15	5	7	32	(⁵)
Stenographers -----	57	15	4	(⁵)	18	(⁵)
Switchboard operators -----	39	18	5	18	19	(⁵)
Tabulating-machine operators -----	43	22	5	5	23	(⁵)
Typists -----	47	8	4	6	34	(⁵)

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

² For scope of study, see table in appendix A.

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

⁴ Engineering and architectural services; and commercially operated research, development, and testing laboratories only.

⁵ Less than 4 percent.

Table 6. Relative Salary Levels for Selected Professional, Administrative, Technical, and Clerical Occupations¹ by Industry Division,² February-March 1964

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

Occupation	Manu- facturing	Public utilities ³	Wholesale trade	Retail trade	Finance, insurance, and real estate	Selected services ⁴
<u>Professional and Administrative</u>						
Accountants -----	100	103	(⁵)	98	93	103
Auditors -----	104	103	94	(⁵)	92	(⁵)
Chief accountants -----	99	(⁵)	(⁵)	(⁵)	102	(⁵)
Attorneys -----	107	99	(⁵)	(⁵)	95	(⁵)
Managers, office services -----	100	111	(⁵)	(⁵)	97	(⁵)
Job analysts -----	102	(⁵)	(⁵)	(⁵)	89	(⁵)
Directors of personnel -----	99	109	103	96	102	(⁵)
Chemists -----	100	(⁵)	(⁵)	(⁵)	(⁵)	102
Engineers -----	100	97	(⁵)	(⁵)	(⁵)	99
<u>Technical</u>						
Engineering technicians -----	99	108	(⁵)	(⁵)	(⁵)	103
Draftsmen -----	100	97	(⁵)	99	(⁵)	(⁵)
<u>Clerical</u>						
Bookkeeping-machine operators -----	111	122	(⁵)	96	92	(⁵)
Clerks, accounting -----	106	102	106	87	86	101
Clerks, file -----	110	116	99	88	93	106
Keypunch operators -----	104	106	102	91	90	99
Office boys or girls -----	104	110	98	93	92	97
Stenographers -----	103	106	103	89	87	97
Switchboard operators -----	107	111	107	79	94	(⁵)
Tabulating-machine operators -----	106	99	107	94	92	(⁵)
Typists -----	106	105	102	93	91	104

¹ Each occupation includes the work levels, as defined for 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.

² For scope of study, see table in appendix A.

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

⁴ Engineering and architectural services; and commercially operated research, development, and testing laboratories only.

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

Table 7. Distribution of 75 Selected Job Categories Studied by Employees' Average Weekly Hours,¹ February-March 1964

Average weekly hours ¹	Number of job categories		Job category
	Professional, administrative, and technical	Clerical	
	56	19	All categories.
38.0	1	1	Attorneys VII. Clerks, file I.
38.5	4	5	Attorneys III, IV, V, and VI. Clerks, file II and III. Office boys or girls. Tabulating-machine operators I and II.
39.0	10	12	Attorneys I and II. Auditors I, II, III, and IV. Job analysts I and II. Managers, office services II and III. Bookkeeping-machine operators I and II. Clerks, accounting I and II. Keypunch operators I and II. Stenographers, general. Stenographers, senior. Switchboard operators. Tabulating-machine operators III. Typists I and II.
39.5	24	1	Accountants I, II, III, IV, and V. Chemists I, II, III, IV, V, VI, and VII. Chief accountants I, II, III, and IV. Directors of personnel I and III. Engineers VI. Job analysts III and IV. Managers, office services I and IV. Tracers. Switchboard operators, special.
40.0	17	-	Chemists VIII. Directors of personnel II and IV. Engineers I, II, III, IV, V, VII, and VIII. Draftsmen, junior. Draftsmen, senior. Engineering technicians I, II, III, IV, and V.

¹ Based on the scheduled workweek for which employees receive their regular straight-time salary. The average for each job category was rounded to the nearest half hour.

Table 8. Average Weekly Hours¹ for Employees in Selected Professional, Administrative, Technical, and Clerical Occupations² by Industry Division, February-March 1964

Occupation	Manu- facturing	Public utilities ³	Wholesale trade	Retail trade	Finance, insurance, and real estate	Selected services ⁴
<u>Professional and Administrative</u>						
Accountants -----	39.5	39.5	38.5	39.5	38.0	39.5
Auditors -----	39.5	39.5	39.5	39.5	38.0	(⁵)
Chief accountants -----	39.5	40.0	(⁵)	(⁵)	39.0	(⁵)
Attorneys -----	38.5	39.5	(⁵)	40.0	38.0	(⁵)
Managers, office services -----	39.5	(⁵)	(⁵)	(⁵)	38.5	(⁵)
Job analysts -----	39.5	(⁵)	(⁵)	(⁵)	38.0	(⁵)
Directors of personnel -----	40.0	39.0	39.5	41.0	38.0	39.5
Chemists -----	39.5	39.5	(⁵)	(⁵)	(⁵)	39.5
Engineers -----	40.0	39.0	(⁵)	(⁵)	(⁵)	39.5
<u>Technical</u>						
Engineering technicians -----	40.0	40.0	(⁵)	(⁵)	(⁵)	39.5
Draftsmen -----	40.0	39.5	(⁵)	38.0	(⁵)	39.5
<u>Clerical</u>						
Bookkeeping-machine operators -----	39.5	39.0	39.0	39.5	38.5	39.5
Clerks, accounting -----	39.5	39.0	39.0	39.0	38.0	39.5
Clerks, file -----	39.0	39.0	39.0	39.0	37.5	39.0
Keypunch operators -----	39.5	39.0	39.5	39.0	38.0	39.5
Office boys or girls -----	39.0	38.5	39.0	39.0	37.5	39.0
Stenographers -----	39.5	39.0	38.5	39.0	38.0	39.5
Switchboard operators -----	39.0	39.5	38.5	39.5	38.0	39.5
Tabulating-machine operators -----	39.5	38.5	39.0	39.0	37.5	39.5
Typists -----	39.5	39.0	39.0	39.0	37.5	39.5

¹ Based on the scheduled workweek for which employees receive their regular straight-time salary. The average for each job category was rounded to the nearest half hour.

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

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

⁴ Engineering and architectural services; and commercially operated research, development, and testing laboratories only.

⁵ Insufficient employment to warrant separate presentation of data.

Appendix A. Scope and Method of Survey

Scope of Survey

This survey relates to all 212 Standard Metropolitan Statistical Areas in the United States as revised in 1961 by the Bureau of the Budget.¹⁵ Coverage within these areas was limited to establishments 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. Establishments with fewer than 250 workers at the time of reference of the universe data (in general, first quarter of 1962) were excluded. The estimated number of establishments and the total employment within the scope of the survey, and within the sample actually studied, are listed separately for each major industry division in the accompanying table. As indicated in the table and explained later in detail, the scope of the study was the same for all occupations; however, the survey consisted of two separate parts with one sample of establishments studied for the professional and administrative occupations,¹⁶ and another larger sample for drafting and clerical occupations.

Establishments and Workers Within Scope of Survey¹ and Number Studied by Industry Division, February-March 1964

Industry division	Within scope of study ¹			Studied for professional and administrative occupations		Studied for drafting and clerical occupations ²	
	Number of establishments	Workers in establishments		Number of establishments	Workers in establishments	Number of establishments	Workers in establishments
		Total	Professional, administrative, supervisory, and clerical ³				
All divisions surveyed ---	11,964	12,059,000	4,688,800	1,786	4,736,838	5,050	7,077,628
Manufacturing -----	7,618	7,674,600	2,488,900	1,204	3,290,834	2,752	4,037,725
Nonmanufacturing:							
Transportation, ⁴ communication, electric, gas, and sanitary services -----	1,157	1,596,200	773,500	213	690,571	642	1,233,267
Wholesale trade -----	563	277,900	155,700	49	34,990	253	137,024
Retail trade -----	1,525	1,519,600	330,700	136	335,229	844	1,058,593
Finance, insurance, and real estate -----	1,002	875,900	865,900	133	302,078	498	539,613
Services:							
Engineering and architectural services; and commercially operated research, development, and testing laboratories only -----	99	114,800	74,100	51	83,136	61	71,406

¹ The study relates to establishments in industries listed employing 250 workers or more in the 212 Standard Metropolitan Statistical Areas in the United States as revised in 1961 by the Bureau of the Budget.

² The national estimates for the drafting and clerical occupations were developed from the data collected in the Bureau's occupational wage surveys in major labor markets, excluding data for establishments not within the scope of the survey as determined for the study of professional and administrative occupations.

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

⁴ Limited to railroad, local and suburban passenger, deep sea water (foreign and domestic), and air transportation industries as defined in the 1957 edition of the Standard Industrial Classification Manual.

¹⁵ The area coverage was the same as in the 1963 survey; earlier studies related to 188 Standard Metropolitan Statistical Areas in the United States, excluding Hawaii, as revised through 1959 by the Bureau of the Budget.

¹⁶ Engineering technicians also were included in this part of the survey.

Timing of Survey

The data reflect salaries in effect during the period February–March 1964,¹⁷ although the survey was conducted over a longer period, on the average. The data for the professional, administrative, and engineering technician occupations were collected by personal visits to sample establishments, largely between February 1 and May 15, but with more than half the visits completed by the end of March. The most recent information available at the time of the visit was obtained. For the drafting and clerical occupations, the survey was designed to develop nationwide estimates from the data collected in the Bureau's occupational wage surveys by labor market, conducted between August 1963 and June 1964. Although some of the areas were surveyed in 1963, those surveyed in the first half of 1964 (with the areas they represented in the nationwide estimates) accounted for more than two-thirds of the office employment within the scope of the survey in all metropolitan areas combined. The average payroll reference month studied for these employees was February 1964.

Method of Collection

Data were obtained by personal visits of Bureau field economists to representative establishments within the scope of the survey.¹⁸ Employees were classified according to occupation and level, with the assistance of company officials, on the basis of uniform job definitions. 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. The occupational definitions used in classifying employees appear in appendix B.

Nature of Data Collected and Presented

The average salaries reported relate to the standard salaries that were paid for standard work schedules, i. e., to the straight-time salary corresponding to the employee's normal work schedule excluding overtime hours. The average salaries presented relate to employees for whom salary data were available.

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. As indicated below, 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 and administrative occupations surveyed for whom salary data were not available
3 -----	10 percent or more Directors of personnel IV (24 percent) Directors of personnel III (15 percent) Engineers VIII (14 percent)
10 -----	5 to 9.9 percent Attorneys VI and VII Chemists VII and VIII Chief accountants I, II, III, and IV Directors of personnel II Engineers VII
35 -----	Less than 5 percent

¹⁷ The reference period for the current and the 1963 survey report was designated as "February–March," instead of "Winter," as in earlier bulletins in this series, to indicate more specifically the period represented by the data. The information for each of the five surveys in this annual series was collected during approximately the same time period.

¹⁸ The surveys in major labor markets, from which nationwide estimates were developed for the drafting and clerical occupations, provide for collection of data for some areas by a combination of mail and personal visits in alternate years. For establishments reporting by mail, the occupational classifications are based on those made during personal visits in the preceding year.

Comparisons between establishments that provided salary data for each specific occupational level and those not doing so indicated that the two classes of establishments did not differ materially in industries represented, employment, or pay structure 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 study and not the number actually surveyed. Employees for whom salary data were not available were not taken into account in the estimates.¹⁹ These estimates were derived by weighting employees in the occupations studied in each sample establishment in proportion to the number of establishments it represented within the scope of the study. For example, if the sample establishment was selected from a group of four establishments with similar employment in the same industry and region, each employee found in an occupation studied was counted as four employees in compiling the employment 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.²⁰ 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.

In the occupations surveyed, both men and women were classified and included in the occupational employment and earnings estimates. In the professional, administrative, and technical 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 occupational wage survey reports compiled by labor market 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
90 or more -----	All levels of bookkeeping-machine operators; file clerks; keypunch operators; stenographers; switchboard operators; typists
80-84 -----	Clerks, accounting I
50-54 -----	Clerks, accounting II; tabulating-machine operators I
40-44 -----	Office boys or girls
35-39 -----	Tabulating-machine operators II
30-34 -----	Tracers
20-24 -----	Job analysts I
15-19 -----	Tabulating-machine operators III
10-14 -----	Accountants I; chemists I and II; job analysts II; managers, office services I; engineering technicians I
5-9 -----	Accountants II; directors of personnel I; managers, office services II; engineering technicians II

Sampling and Estimating Procedures

Although the published estimates relate to 212 Standard Metropolitan Statistical Areas, as revised by the Bureau of the Budget in 1961, the survey was conducted largely within a sample of 80 areas. These areas were so chosen as to be representative of all United States metropolitan areas. Within these areas, a sample of establishments was selected for the survey of clerical and drafting occupations. Thus, the sampling plan can be described as a two-stage design. The establishment sample for the study of professional

¹⁹ 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. The occupations involved in these cases were accountants, chemists, engineers, and engineering technicians.

²⁰ 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.

and administrative occupations also was selected largely within the 80 areas. Very large establishments were included in the sample if they were located in any of the 212 metropolitan areas. Also, a few establishments within metropolitan areas were added in certain industries when it was not possible to represent the industry appropriately by establishments within the 80 areas.

The sample of 80 areas was based on the selection of 1 area from a stratum of similar areas. The criteria of stratification were region and type of industrial activity. Each area had a chance of selection roughly proportionate to its total nonagricultural employment. Each of 37 large areas formed a stratum by itself and was certain of inclusion in the sample. Each of these areas represented only itself, but each of the 43 other areas represented itself and similar units.

The design used in the selection of the establishments studied for the professional and administrative occupations differed from that used in the drafting and clerical occupations. As explained earlier, the data for the latter occupations were collected in the Bureau's program of occupational wage surveys conducted in the 80 areas. The establishments in those surveys were chosen to provide separate area estimates, with industry division detail, while the design for the survey of professional and administrative occupations was intended to yield only nationwide data with no industrial breakdown, and hence required fewer establishments.

In the case of drafting and clerical occupations, each establishment sample within the area was selected independently to permit the presentation of separate data for that area. These samples were selected from a list of establishments stratified by size (employment) and industry. A greater proportion of the large establishments was selected, but in combining the data each establishment was given its appropriate weight—i. e., where an establishment was chosen as 1 of 4, it was given a weight of 4. The samples for all 80 areas combined comprise 5,050 establishments.

The nationwide estimates for the drafting and clerical occupations were formed by applying to each set of sample area data the weights needed to expand these into estimates for the stratum represented by the sample area, and then combining these stratum estimates. In the case of the 37 large self-representing areas, these weights were 1. In each of the 43 smaller areas, the weight was the ratio of the total nonagricultural employment in the stratum to that in the sample area.

In the study of professional and administrative occupations, the sampling procedure called for the detailed stratification of the universe of the establishments in the 212 areas by location, industry, and size of establishment. From this universe, a sample of 1,786 establishments was selected systematically from the 80 areas (with exceptions as noted earlier in this section) so that each geographic unit or group of areas was represented proportionately within the size of establishment and industry classes.²¹ Although no conscious effort was made to control the representation for each area through all the industries, a count shows that each area contributes nearly its proportionate share to the whole sample.

Each industry was sampled separately, the sampling rates depending on the importance of the industry as an employer of the jobs surveyed. Within each industry, a greater proportion of large establishments was selected; but as in the clerical survey, each establishment was weighted to represent all other units of the same class. 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 like industry-size classification. Where the probability of selection was certainty for the original unit, the additional weight was assigned to existing sample members as nearly similar as possible to the missing unit.

²¹ A few of the largest employers, together employing approximately a million, gave data on a companywide basis. These companies were eliminated from the universe to which the preceding sampling procedure applied. The sample count includes the establishments of these companies within the 212 metropolitan areas.

Conversion of Salary Rates

Salary information for the selected occupations was obtained in the form in which it was most readily available from the records, i. e., on a weekly, biweekly, semimonthly, monthly, or annual basis. Since average weekly salaries for the clerical and drafting occupations are first presented in separate area reports (see order form at the back of this bulletin), the salary data for these occupations are originally converted to a weekly basis, whereas the salary data for the professional and administrative occupations and for engineering technicians are converted initially to a monthly basis. The factors used to convert the data by machine for the two groups of occupations are 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 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 and annual salaries for the clerical and drafting occupations, presented in table 1 of this bulletin, 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 4, are rounded to the nearest half dollar. Average monthly salaries presented in table 1 for the professional and administrative occupations and for engineering technicians are rounded to the nearest dollar; these average monthly salaries are then multiplied by 12 to obtain the average annual salaries presented.

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 and administrative occupation work levels, the relative standard errors of the average salaries were distributed as follows: 24 were under 2 percent; 6 were 2 and under 3 percent; 7 were 3 and under 4 percent; 5 were 4 and under 5 percent; and 6 were 5 percent and over.²² The nationwide estimates for the clerical and drafting room occupations, based on the much larger sample, are subject to smaller sampling error—less than 0.75 percent in all cases (except tracers) and in many cases less than 0.25 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 to \$1,040.

²² The 5 percent and over group included directors of personnel IV, attorneys VI, job analysts I and IV, and chief accountants III and IV.

Appendix B. 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 interestablishment 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 58.

ACCOUNTANTS AND AUDITORS

ACCOUNTANT

Performs accounting work requiring professional knowledge of the theory and practice of recording, classifying, examining, and analyzing the data and records of financial transactions. Personally or by supervising others provides accounting service to management by maintaining the books of account, accumulating cost or other similar data, preparing reports and statements, and maintaining the accounting system by interpreting, supplementing, and revising the system as necessary. The work requires a professional knowledge of accounting and a bachelor's degree in accounting or equivalent experience and education combined. (See also chief accountant.)

Accountant I

General characteristics.—At this beginning professional level, position is distinguished 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 beginning accountant practical experience in the operations of an established accounting system. Learns to apply the principles, theories, and concepts of accounting to a particular accounting system.

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

Typical duties and responsibilities.—Many of the assignments will include duties some of which may be nonprofessional in nature such as proving arithmetical accuracy; examining standard accounting documents for completeness, internal accuracy, and conformance with specific accounting requirements; tracing and reconciling records of financial transactions; and preparing detailed statements and schedules for reports. The presence of such nonprofessional tasks, provided they are part of the training and development process, do not prevent the matching of a job if it otherwise meets this definition.

Responsibility for direction of others.—Usually none.

ACCOUNTANT—Continued

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

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 insure 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.—Prepares routine working papers, schedules, exhibits, and summaries indicating the extent of his examination and developing and supporting his findings and recommendations. This includes the examination of a variety of accounting documents to verify accuracy of computations and to ascertain that all transactions are properly supported, are in accordance with pertinent regulations, and are classified and recorded according to acceptable accounting standards.

Responsibility for direction of others.—Usually none, although 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.

Direction received.—A professional accountant at higher level normally is available to furnish advice and assistance as needed. Work is examined 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 insure that the day-to-day operations of the segment or system are carried out in accordance with accounting principles and the policies and objectives of the accounting system. Within limits of delegated responsibility, the accountant makes the day-to-day decisions concerning the accounting treatment of financial transactions. He is expected to recommend solutions to complex problems and propose changes in the accounting system, but he has no authority to effectuate these solutions or changes. His solutions are derived from his own knowledge of the application of well-established principles and practices or by referring the problem to his superior for solution.

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

ACCOUNTANT—Continued

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 technical accounting problems are more difficult and a greater degree of coordination among more numerous types of accounting records and operations may be essential.

Direction received.—An accountant at 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 accuracy and quality by spot checks and appraisal of results.

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 segment in the intended manner. Makes day-to-day decisions concerning the accounting treatment of financial transactions. He is expected to recommend solutions to complex problems beyond the scope of his responsibility and to propose changes in the accounting system, but he has no authority to act independently on these problems.

Responsibility for direction of others.—Accounting staff supervised, if any, may include professional accountants.

Accountant V

General characteristics.—Performs professional operating or cost accounting work requiring the application of accounting principles and practices to the solution of very difficult problems for which no clear precedents exist, or to the development or extension of theories and practices to problems to which they have not been applied previously. Also at this level are positions having more than average responsibility because of the nature, magnitude, or impact of the assigned work.

Is more directly concerned with what the system or segment should be, what operating accounting policies and procedures should be established or revised, and the meaning of the data in the reports and statements for which he is responsible.

Direction received.—An accountant at 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 responsibilities.—In addition to insuring that the system or segment is operated as intended, is deeply involved in the fundamental and complex technical and managerial problems.

Responsibility for direction of others.—Accounting staff supervised, if any, includes professional accountants.

AUDITOR

Audits the financial records of a company or divisions or components of the company, to appraise systematically and verify the accounting accuracy of the records and reports. 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; and (4) the degree of compliance with established policies and procedures concerning financial transactions. Evaluates the adequacy of the accounting system and internal financial control. Makes appropriate recommendations for improvement as necessary. (Work typically requires a bachelor's degree in accounting or equivalent experience and education combined.)

Excluded from the definition are positions which call for auditing duties which may require detailed knowledge of the operations of a particular company, but do not require full professional accounting training. For example, when the primary responsibility of the position is to check transactions to determine whether or not they conform to prescribed routines or procedures, it is excluded.

Auditor I

As a trainee auditor at the entering professional level, performs a variety of routine assignments under the close supervision of an experienced auditor.

Auditor II

This is the continuing developmental level for the professional auditor. As a junior member of an audit team, independently performs assigned portions of the audit examination which are limited in scope and complexity, such as physically counting to verify inventory items, checking assigned subsidiary ledger accounts against supporting bills or vouchers, checking and balancing various subsidiary ledgers against control accounts, or other similar duties designed to help the team leader check, verify, or prove the accounting entries. Responsibility extends only to the verification of accuracy of computations and the determination that all transactions are properly supported. Any technical problems not covered by instructions are brought to the attention of a superior.

Auditor III

(1) As auditor in charge of an audit team or in charge of individual audits, independently conducts regular recurring audits in accordance with a prescribed audit policy of the accounts of smaller or less complex companies having gross income up to approximately \$3 million per year, or similar size branch or subsidiary organizations of larger companies. Under minimum supervision, either working alone, or with the assistance of one or two subordinate auditors, examines transactions and verifies accounts; observes and evaluates local 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, or (2) as a member of an audit team auditing a larger and more complex organization (approximately \$4 to \$25 million gross income per year), independently performs the audit examination of a major segment of the audit such as the checking, verification, and balancing of all accounts receivable and accounts payable, the analysis and verification of assets and reserves, or the inspection and the evaluation of controls and procedures.

AUDITOR—Continued

Auditor IV

(1) As auditor in charge of an audit team or of individual audits under minimum supervision with the assistance of approximately five subordinate auditors, independently conducts regular recurring audits of a company having gross income of approximately \$4 to \$25 million per year or in companies with much larger gross incomes, audits of accounts of branch or subsidiary organizations of those companies each of which have gross income of \$4 to \$25 million per year. Plans and conducts the audit and prepares an audit report containing recommendations for changes or improvements in accounting practices, procedures, or policies; or (2) as a member of an audit team auditing the accounts of a larger and more complex organization (over \$30 million gross income per year), is assigned relatively independent responsibility for a major segment of the audit such as the checking, verification, and balancing of all accounts receivable and accounts payable, the analysis and verification of assets and reserves, or the inspection and evaluation of controls and procedures.

CHIEF ACCOUNTANT

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) with 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, tabulating machine operation, etc. (Responsibility for an internal audit program is typically not included.)

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

- (1) Developing, 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 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 in a manner that is meaningful to management.
 - (b) Methods for improving operations as suggested by his expert knowledge of the financial situation, e.g., proposals for improving cost control, property management, credit and collection, tax reduction, or similar programs.

Definition does not cover 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, or procedures studies, or similar functions. Such work is typical of positions sometimes titled as comptroller, budget and accounting manager, financial manager, etc.

Chief accountant jobs which meet the above definition are classified by level²³ of work in accordance with the following:

²³ Insufficient data were obtained for level V to warrant presentation of average salaries.

CHIEF ACCOUNTANT—Continued

Class	Authority and responsibility (1)	Technical complexity (1)	Subordinate staff of professional accountants in the system for which he is responsible. ²
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.
	<u>or</u> AR-3	TC-1	Only one or two professional accountants, who do not exceed the accountant IV job definition.
III	AR-1	TC-3	About 15 to 20 professional accountants. At least one or two match the accountant V job definition.
	<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> 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.
IV	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.
	<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 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.

¹ AR-1, 2, and 3 and TC-1, 2, and 3 are explained on the following page.

² The number of professional accountants supervised, as shown above, is recognized to be a relatively crude criterion for distinguishing between the various classes. It is to be considered as 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

AR-1. Directs the accounting program for an establishment of a company. The accounting system has been established in considerable detail at higher organizational levels in the company, i. e., accounts, procedures, and reports to be used have been prescribed. The chief accountant has authority, within this prescribed system, to adapt and expand it to fit the particular needs of the organization served, e. g., to provide greater detail; to establish additional accounting controls; to provide special or interim reports and statements needed by the establishment manager for day-to-day operations, etc.

AR-2. Directs the accounting program for an establishment of a company when the delegated authority to modify the basic accounting system established at higher organizational levels within the company clearly exceeds that described in AR-1. The basic accounting system is prescribed only in broad outlines rather than in specific detail, e. g., while certain major financial reports, overall accounts, general policies, etc., are required by the basic system, the chief accountant has broad latitude to decide what specific methods, procedures, accounts, reports, etc., are to be used within the organizational segment he serves. He has authority to evaluate and take final action on recommendations for changes in that portion of the system for which he is responsible, but he must secure prior approval from higher organizational levels for any changes which would affect the basic system prescribed by such higher levels. Accounting reports and statements prepared reflect the events and progress of the entire organizational segment of the company for which he is responsible, and usually these reports represent consolidations of accounting data submitted by subordinate segments of the organization which have accounting responsibilities. (This degree of authority is most characteristically found at an organizational level in the company which is intermediate between the company headquarters level (see AR-3) and the plant level (see AR-1). However, if a similar degree of authority has been delegated to the plant level, the chief accountant at such a place should be matched with this definition.)

AR-3. Directs the accounting program for an entire company with or without subordinate establishments. 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 usually from a company official responsible for general financial management, frequently an officer of the company. The chief accountant evaluates and takes final action on recommendations for basic changes in the accounting system, originating from subordinate units within the system. Accounting reports and statements prepared reflect the events and progress of the entire company, and to the extent that subordinate accounting segments exist, they represent consolidations of accounting data submitted by these segments.

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., requiring substantial adaptations of the basic system to meet management needs.

TC-3. The organization which the accounting program serves has functions, products, work processes, etc., which are very numerous, varied, unique, specialized or which, for similar reasons, puts a heavy demand on the accounting organization for specialized and extensive adaptations of the basic system to meet management needs. The accounting system, to a considerable degree is developed well beyond the established principles and practices in order to provide methods for the solution of problems for which no clear precedents exist or to provide for the development or extension of theories and practices problems to which they have not been previously applied.

ATTORNEYS

ATTORNEY

Performs work involved in providing consultation and advice to operating officials of the company with respect to its legal rights, privileges, and obligations. Performs such duties as anticipating any legal problems or risks involving the company and advising company officials; preparing and reviewing various legal instruments and documents, such as contracts for leases, licenses, sales, purchases, real estate, etc.; keeping informed of proposed legislation which might affect the company and advising the appropriate company officials; examining and checking for legal implications, public statements or advertising material; advising company whether to prosecute or defend law suits; acting as agent of the company in its transactions; and applying for patents, copyrights, or registration of the company's products, processes, devices, and trademarks. (Patent work which requires training in a technical field, e.g., engineering in addition to legal training, is excluded. Claims examining, claims investigating, or similar work are excluded even though the work is performed by persons with a LL.B. degree, unless there is clear evidence that the job actually requires use of full professional legal training such as that of an attorney who performs investigative duties as a preliminary phase of his total responsibility for preparing a case for trial or actually trying a case in court.)

Attorney I

As a trainee (LL.B. with membership in bar), performs routine legal work, such as preparing briefs or drawing up contracts for review and evaluation by attorneys of higher grade. Receives immediate supervision in assignments designed to provide training in the application of established methods and techniques of legal research, drafting of legal instruments, etc.

Attorney II

Performs a variety of legal assignments, e.g., (1) drawing up contracts which require some ingenuity and an ability to evaluate the legal sufficiency of contract terms; (2) preparing draft opinions on legal questions involved in such areas as claims, grievances, labor laws, etc., when the legal question can be resolved relatively easily in the light of well-established facts and clearly applicable precedents. Receives general supervision during assignments, with most work reviewed by an attorney of higher grade. Responsibility for final action is usually limited to matters which are covered by instructions and prior approval of a superior.

Attorney III

Performs a variety of legal assignments, primarily in the study and analysis of legal questions, problems, or cases. Prepares draft opinions or other kinds of legal work on legal questions involved in such areas as claims, grievances, labor laws, etc., when the questions are complicated by the absence of legal precedents clearly and directly applicable to the case, or by the different possible constructions which might be placed on either the facts or the laws and precedents involved. Typically specializes in one legal field, e.g., labor law, real estate, contracts, etc. Receives general supervision during initial and final stages of assignments, but is expected to conduct work with relative independence. Responsibility for final action is usually limited to matters covered by legal precedents and in which little deviation from standard forms and practices is involved. Any decisions or actions having a bearing on the company's business are reviewed by a superior. May supervise or review the work of a few assistants, normally not attorneys.

Attorney IV

Similar to attorney III but the work is performed under considerably less close supervision and direction. The attorney is expected to independently investigate the facts, search out precedents, define the legal and factual issues, draft all necessary documents, opinions, etc., and present conclusions and recommendations for review. Guidance from superiors during this process occurs only if the problem is clearly more difficult than normal for this level. The final product is reviewed carefully, but primarily for overall soundness of legal reasoning and consistency with company policy, rather than for accuracy of technical detail.

ATTORNEY—Continued

Attorney V

Responsible for a broad legal area in which assignments cover a wide range of difficult and complex legal questions and problems. Primarily serves in an advisory capacity, making studies and developing opinions which may have an important bearing on the conduct of the company's business (e.g., recommending action to protect the company's trademarks and copyrights in foreign countries). Receives a minimum of technical legal supervision. May supervise a small staff of attorneys.

Attorney VI

Similar to attorney V but the legal questions and problems are of outstanding difficulty and complexity or of crucial importance to the welfare of the company. For example, (1) complex factual and policy issues which require extensive research, analysis, and obtaining and evaluating expert testimony in controversial areas of science, finance, corporate structure, engineering, etc.; or (2) cases involve very large sums of money (e.g., about \$1 million) or, for other reasons, are very vigorously contested.

Attorney VII

Plans, conducts, and supervises legal assignments within one or more broad legal areas. Supervises a staff of attorneys, and has responsibility for evaluating their performance and approving recommendations which may have an important bearing on the conduct of the company's business. Receives guidance as to company policy but no technical supervision or assistance except when he might request advice on the most difficult, novel, or important technical legal questions. Usually reports to the general counsel or chief attorney of the company or his immediate deputy.

OFFICE SERVICESMANAGER, OFFICE SERVICES

Responsible for planning, directing, and controlling of office services, subject only to the most general policy supervision. Plays an active role in anticipating and planning to meet office services needs of the operating organization served. Supervises a group of employees engaged in providing office services of a supporting or "housekeeping" nature to the primary operation of a company, an establishment, or an organizational unit of a company or establishment. (May personally perform some of the functions.) Office services include:

- (a) Receipt, distribution, and dispatch of mail.
- (b) Maintenance of central files.
- (c) Printing or duplication and distribution of forms, publications, etc. (May be limited to ordering the printing or duplication of items. Does not necessarily have charge of a printshop or duplication facilities, especially in large operations, but coordinates the flow to and from the reproduction units.)
- (d) Purchasing office supplies and equipment. (Makes direct purchases of run-of-the-mill office supplies. May be responsible for direct purchase of other items from outside suppliers or may requisition through establishment purchasing departments.)
- (e) Records control and disposal.
- (f) Communications (telephone switchboard and/or teletype service).
- (g) Typing or stenographic pool.
- (h) Office equipment maintenance and repair. (May have direct supervision of maintenance and repair personnel or may coordinate the ordering of such services from outside service suppliers or from a central service unit within the establishment.)
- (i) Space control over office facilities—layout and arrangement of offices. (Typically serves as a staff assistant to management officials in performing this function.)

MANAGER, OFFICE SERVICES—Continued

Manager, Office Services I

Supervises a staff of employees engaged in performing a few (e. g., four or five) of the above functions as a service to a small organization (e. g., 300 to 600 employees, excluding nonsupervisory plant workers).

Manager, Office Services II

A. Supervises a staff of employees engaged in performing a few (e. g., four or five) of the above functions as a service to a moderately large organization (e. g., 600 to 1, 500 employees, excluding nonsupervisory plant workers).

OR

B. Supervises a staff of employees engaged in performing most (e. g., seven or eight) of the above functions as a service to a small organization (e. g., 300 to 600 employees, excluding nonsupervisory plant workers).

Manager, Office Services III

A. Supervises a staff of employees engaged in performing a few (e. g., four or five) of the functions as a service to a large organization (e. g., 1, 500 to 3, 000 employees, excluding nonsupervisory plant workers).

OR

B. Supervises a staff of employees engaged in performing most (e. g., seven or eight) of the above functions as a service to a moderately large organization (e. g., 600 to 1, 500 employees, excluding nonsupervisory plant workers).

Manager, Office Services IV

Supervises a staff of employees engaged in performing most (e. g., seven or eight) of the above functions as a service to a large organization (e. g., 1, 500 to 3, 000 employees, excluding nonsupervisory plant workers).

PERSONNEL MANAGEMENTJOB 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—Continued

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 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 for a plant or establishment of a 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 formal 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, or 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 or safety programs, etc.).

Employee training and development functions may or may not be part of the personnel management program for purposes of matching this definition.

Labor relation activities, if any, are confined mainly to the administration, interpretation, and application of labor union contracts and are essentially similar to those described under (3) above. If responsibility for actual contract negotiation with labor unions as the principal company representative is considered a significant one in the job, i.e., the one which serves as the primary basis for qualification requirements and compensation, the job is excluded from being matched with this definition. Participation in bargaining of a less significant 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, will not have the effect of excluding the job from coverage.

DIRECTOR OF PERSONNEL—Continued

The director of personnel not only directs a personnel management program of the intensity and scope outlined previously, but (to be a proper match) he is recognized by the top management officials of the organization he serves as the source of advice and assistance on personnel management matters and problems generally. For example, he 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.; he represents management in external contacts with other companies, trade associations, government agencies, etc., when the primary subject matter of the contact is on personnel management matters.

Typically, the director of personnel reports to a company officer or a high management official who has responsibility for the operation of a plant or establishment of a company; or, at company headquarters level, he may report to a company officer in charge of industrial relations and personnel management activities or a similar official.

Directors of personnel jobs which meet the above definition are classified by level²⁴ of work in accordance with the following tabulation:

Number of employees in work force serviced	Personnel program operations level ¹		Personnel program development level ²	
	Organization serviced— type A ³	Organization serviced— type B ⁴	Organization serviced— type A ³	Organization serviced— type B ⁴
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	-

¹ Personnel program operations level—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.

² Personnel program development level—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. There may be instances in which there is such relatively complete delegation of personnel program planning and development responsibility below the company level to an intermediate organization, e.g., a subsidiary or a division, that a job of personnel director for such an organization should be matched as though it were a company level job.

³ Organization serviced—type A—jobs serviced are (almost exclusively) types which are common in the labor market generally, and consist of relatively easy-to-understand work processes, or for similar reasons do not present particularly difficult recruitment, job evaluation, or training problems. Work force, organizational structure, and other organizational characteristics are relatively stable.

⁴ Organization serviced—type B—jobs serviced include a substantial number of types which are largely peculiar to the organization serviced, consist of hard-to-understand work processes (e.g., professional, scientific, administrative, or technical), are jobs in new or emerging occupational fields, are in extremely short supply, have hard-to-match skill requirements, or for similar reasons present difficult recruitment, job evaluation, or training problems. Work force, organizational structure, or other organizational characteristics are complicated, unstable, subject to wide seasonal fluctuations, etc.

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.

²⁴ Insufficient data were obtained for level V to warrant presentation of average salaries

CHEMISTS AND ENGINEERS

CHEMIST

Performs research, development, interpretive, and analytical work 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 education and experience combined.

Chemist I

General characteristics.—As the beginning level of professional work in chemistry, a bachelor's degree with major study in chemistry, or equivalent is required. Typically receives formal classroom or on-the-job training.

Direction received.—Performs work under close supervision with specific and detailed instructions as to required tasks and results expected.

Typical duties and responsibilities.—Assignments are planned to provide experience in the application of common laboratory techniques and familiarization with methods and practices in the laboratory. Performs a variety of routine analyses, tests, and operations, and assists experienced chemists by carrying out detailed steps of experiments.

Responsibility for the direction of others.—None.

Chemist II

General characteristics.—At this continuing developmental level for professional chemists, work is characterized by selection and application of general and specialized methods, techniques, and instruments commonly used in the laboratory. May receive advanced on-the-job training or formal classroom instruction.

Direction received.—Supervisors establish the nature and extent of analysis required, specify methods and criteria on new types of assignments, and review work for thoroughness of application of methods and accuracy of results.

Typical duties and responsibilities.—Analyzes a wide variety of samples for which there are standard or established methods of analysis or for which the adaptation of standard methods is obvious or determined by others. Conducts specified phases of research projects as an assistant to an experienced chemist.

Responsibility for the direction of others.—May supervise a few technicians or aids.

Chemist III

General characteristics.—Performs work requiring application of knowledge of a specialized field of chemistry and ingenuity in the independent evaluation, selection, and adaptation of standard methods and techniques.

Direction received.—On routine work, supervision is very general; unusual problems are resolved with close collaboration of supervisor. Completed work is reviewed for application of sound judgment in choice of methods and adequacy of results.

Typical duties and responsibilities.—Develops details of research and development assignments in accordance with a line of approach suggested by the supervisor and adapts methods to the specific requirements of assignments. Analyzes samples that require specialized training because standard methods are unapplicable, because of required interpretive judgment of quality of substances, or because of required specialized skill in adapting techniques such as microanalysis.

Responsibility for the direction of others.—May supervise a few technicians or aids.

CHEMIST—Continued

Chemist IV

General characteristics.—Plans and conducts work in chemistry requiring mastery of specialized techniques or considerable ingenuity in selecting and evaluating approaches to unforeseen or novel problems.

Direction received.—Generally works independently of technical supervision but refers proposed plans and unusually important or complex problems to supervisor for guidance.

Typical duties and responsibilities.—Conducts research assignments requiring the evaluation of alternate methods of approach. Undertakes the more complex, and exacting, or esoteric analytical assignments requiring a specialist in technique or product. Prepares interpretive reports of results and may provide technical advice on significance of results.

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

Chemist V

General characteristics.—Participates in planning research 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 making recommendations and conclusions which serve as the basis for undertaking or rejecting important projects.

Direction received.—Usually discusses important developments with supervisor. Supervision received relates largely to work objectives and administrative aspects.

Typical duties and responsibilities.—From broad program objectives, plans, organizes, and supervises or conducts research investigations with responsibility for defining projects and scope and independently selecting lines of approach.

As individual worker, carries out research project requiring origination of new scientific techniques and mature background of knowledge of related fields of science.

Responsibility for the direction of others.—May supervise a small group of chemists engaged in varied research projects or a larger group on routine analytical work.

Chemist VI

General characteristics.—Performs work requiring leadership and expert knowledge in a specialized field of chemistry. Conceives, plans, and directs projects of a pioneering nature to create new methods and techniques or to resolve problems which have proved unusually refractory.

Direction received.—Supervision received is essentially administrative with assignments broadly indicated in terms of objectives.

Typical duties and responsibilities.—Determines the kinds of projects and data needed to meet objectives of programs. Maintains liaison with related organizations and represents the laboratory in important conferences with authority to commit the organization. May serve as a consultant to other chemists in the specialty field.

Responsibility for the direction of others.—May plan, organize, direct, and evaluate the work of a group of chemists.

Chemist VII

General characteristics.—Supervisor—provides leadership and scientific guidance for a broad and diversified program in chemistry and related supporting activities such as to require several subordinate supervisors responsible for programs typically identified with level VI. Recommends the facilities, personnel, and funds required to carry out program and evaluates accomplishments.

CHEMIST—Continued

Individual researcher and consultant—is a nonsupervisory chemist of recognized leadership status and authoritativeness in his company, in a broad area of specialization. Is consulted extensively by associates and others with a high degree of reliance placed on his scientific interpretations and advice.

Direction received.—Under general administrative direction.

Typical duties and responsibilities.—Supervisor—is responsible for an important segment of a chemical program of a company with extensive and diversified scientific requirements or the entire chemical program of a company where the program is limited in scope. Makes authoritative technical recommendations concerning the scientific objectives and levels of work which will be most profitable in the light of company requirements and scientific and industrial trends and developments.

Individual researcher and consultant—selects problems for research and conceives and plans investigations in which the phenomena and principles are not adequately understood, so that outstanding creativity and mature judgment are required to devise hypotheses and techniques of experimentation and to interpret results. Advises the head of a large laboratory on complex aspects of extremely broad and important programs with responsibility for exploring, justifying, and evaluating proposed and current programs and projects and furnishing advice on unusually complex and novel problems in the specialty field.

Responsibility for the direction of others.—Supervisor—see "general characteristics" above.

Chemist VIII

General characteristics.—Supervisor—provides leadership and scientific guidance for a very broad and highly diversified program in chemistry and related supporting activities requiring several subordinate supervisors responsible for programs typically identified with level VII, or a large number of supervisors of lower levels. Recommends the facilities, personnel, and funds required for programs and evaluates accomplishments.

Individual researcher and consultant—serves as a consultant to top-level management on scientific questions of far-reaching significance. Is sought as a consultant by chemists who are themselves specialists in the field. Is a nationally recognized research leader and consultant for his company.

Direction received.—Receives general administrative direction.

Typical duties and responsibilities.—Supervisor—is responsible for an important segment of a chemical program of a company with very extensive and highly diversified scientific requirements or the entire chemical program of a company where the program is of moderate scope. Is responsible for deciding the kind and extent of chemical and related program needed to accomplish the objectives of the company, for choosing the scientific approaches, for planning and organizing facilities and programs, and for interpreting results.

Individual researcher and consultant—formulates and guides the attack on exceptionally difficult and important problems whose solution would represent a major scientific or technological advance.

Responsibility for the direction of others.—Supervisor—see "general characteristics" above.

This level does not include the chief chemist of a company with a very extensive and highly diversified program; or the assistant chief chemist of a company with an unusually extensive and novel chemical program.

ENGINEER

Performs 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 experience and education combined. (Safety engineers, industrial engineers, quality control engineers, and sales engineers are to be excluded.)

Engineer I

General characteristics.—As the beginning level of engineering work, a bachelor's degree in engineering or equivalent is required. Typically receives formal classroom or on-the-job training.

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

Typical duties and responsibilities.—Performs simple tasks that are planned to provide experience and familiarization with methods and practices of the company in the specialty field and to ascertain the interests and aptitudes of the beginning engineer.

Responsibility for the direction of others.—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. May receive advanced on-the-job or classroom instructions.

Direction received.—Supervisor screens assignments to eliminate difficult problems and selects techniques and procedures to be applied. 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 supervise a few aids or technicians.

Engineer III

General characteristics.—Work requires independent evaluation, selection, and application of standard engineering techniques, procedures, and criteria, using judgment and ingenuity in making minor adaptations and modifications.

Direction received.—Receives instruction on specific assignment objectives, points of emphasis, reference and information sources, and possible solutions. Unusual problems are solved jointly with supervisor, and work is reviewed for application of sound engineering judgment.

Typical duties and responsibilities.—Assignments include 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, practices, and techniques commonly employed in the specific narrow area of assignments. Performs work which involves conventional types of plans, investigations, surveys, structures, or equipment with relatively few complex features for which there are precedents.

Responsibility for the direction of others.—May supervise the work of draftsmen, inspectors, and other technicians assigned to assist in the work.

ENGINEER—Continued

Engineer IV

General characteristics.—Work requires originality and judgment in the independent evaluation, selection, and substantial adaptation and modification of standard techniques, procedures, and criteria. Is recognized as fully competent in all conventional aspects of the subject-matter or functional area of assignments.

Direction received.—Receives direct supervision and guidance primarily on novel or controversial problems or questions. Makes independent technical decisions on details of work covered by precedents.

Typical duties and responsibilities.—Plans, schedules, and coordinates detailed phases of the engineering work in a part of a major project or in a total project of moderate scope. Devises new approaches to problems encountered. Performs work which involves conventional engineering practice but includes 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 routine work.

Engineer V

General characteristics.—Work requires application of 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. Positions may be supervisory or nonsupervisory.

Direction received.—Receives supervision and guidance only in terms of specific work objectives and critical issues.

Typical duties and responsibilities.—Supervisor—plans, develops, coordinates, and directs a large and important engineering project or a number of small projects with many complex features.

Nonsupervisory researcher—carries out complex or novel research assignments requiring the development of new or improved techniques and procedures.

Nonsupervisory staff specialist—develops and evaluates plans and criteria for a variety of projects and activities to be carried out by others.

Responsibility for the direction of others.—Supervisor—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.

Engineer VI

General characteristics.—Work is characterized by full technical responsibility for interpreting, organizing, executing, and coordinating assignments. Maintains liaison with other organizations or companies. Positions may be supervisory or nonsupervisory.

Direction received.—Assignments are received in terms of broad general objectives and limits. Supervision concerns administrative features of the work.

Typical duties and responsibilities.—Conceives and plans engineering projects involving exploration of subject area, definition of scope and selection of problems for investigation, and development of novel concepts and approaches.

Supervisor—plans, develops, coordinates, and directs a number of large and important projects or a project of major scope and importance.

Nonsupervisory researcher—plans and conducts research or other work requiring pioneering in areas in which large blocks of data are controversial or unknown.

ENGINEER—Continued

Nonsupervisory staff specialist—as an expert in a specific field, performs advisory, consulting, and review work.

Responsibility for direction of others.—Supervisor—directs a staff of project engineers and assistants. Evaluates progress of the staff and results obtained, and recommends major changes to achieve overall objectives.

Engineer VII

General characteristics.—Work is characterized by decisions and recommendations which 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; this requires skill in persuasion and negotiations of critical issues. Positions may be supervisory or nonsupervisory.

Direction received.—Receives general administrative direction.

Typical duties and responsibilities.—Demonstrates 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.

Supervisor—plans, develops, coordinates, and directs an engineering program consisting of many large and important projects.

Nonsupervisory—performs advisory, consulting, and review work as authoritative specialist or expert in broad program areas.

Responsibility for the direction of others.—Supervisor—directs a large staff of project engineers, and engineers and scientists in supporting functions. Several subordinate supervisors are responsible for projects or activities typically identified with level VI.

Engineer VIII

General characteristics.—Work is characterized by authoritative decisions and recommendations which 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. Positions may be supervisory or nonsupervisory.

Direction received.—Receives general administrative direction.

Typical duties and responsibilities.—Demonstrates a high degree of creativity, foresight, and mature engineering judgment in planning, organizing, and guiding extensive engineering programs and activities of outstanding novelty and importance.

Supervisor—plans, develops, coordinates, and directs a highly complex and diversified engineering program consisting of many large and important projects and supporting activities.

Nonsupervisory—performs advisory and consulting work for his company as a nationally recognized authority for broad program areas of considerable novelty and importance.

Responsibility for the direction of others.—Directs a very large staff of project engineers, and engineers and scientists in supporting functions. Several subordinate supervisors are responsible for programs, projects, or activities typically identified with level VII.

This level does not include positions of chief engineers of companies with large engineering organizations; e.g., those engaged in research and development on a variety of complex weapons systems with numerous novel components, or of chiefs of primary organizational segments of companies with very large engineering organizations engaged in unusually extensive and diversified research and development.

ENGINEERING TECHNICIANS

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 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—Continued

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 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.

DRAFTSMENDRAFTSMAN, JUNIOR (Assistant Draftsman)

Draws to scale units or parts of drawings prepared by draftsman or others for engineering, construction, or manufacturing purposes. Uses various types of drafting tools as required. May prepare drawings from simple plans or sketches, or perform other duties under direction of a draftsman.

DRAFTSMAN, SENIOR

Prepares working plans and detail drawings from notes, rough or detailed sketches for engineering, construction, or manufacturing purposes. Duties involve a combination of the following: Preparing working plans, detail drawings, maps, cross-sections, etc., to scale by use of drafting instruments; making engineering computations such as those involved in strength of materials, beams and trusses; verifying completed work, checking dimensions, materials to be used, and quantities; writing specifications; and making adjustments or changes in drawings or specifications. May ink in lines and letters on pencil drawings, prepare detail units of complete drawings, or trace drawings. Work is frequently in specialized field such as architectural, electrical, mechanical, or structural drafting.

TRACER

Copies plans and drawings prepared by others, by placing tracing cloth or paper over drawing and tracing with pen or pencil. Uses T-square, compass, and other drafting tools. May prepare simple drawings and do simple lettering.

CLERICALBOOKKEEPING-MACHINE OPERATOR

Operates a bookkeeping machine (Remington Rand, Elliott Fisher, Sundstrand, Burroughs, National Cash Register, with or without a typewriter keyboard) to keep a record of business transactions.

Bookkeeping-Machine Operator I

Keeps a record of one or more phases or sections of a set of records usually requiring little knowledge of basic bookkeeping. Phases or sections include accounts payable, payroll, customers' accounts (not including a simple type of billing described under biller, machine), cost distribution, expense distribution, inventory control, etc. May check or assist in preparation of trial balances and prepare control sheets for the accounting department.

Bookkeeping-Machine Operator II

Keeps a set of records requiring a knowledge of and experience in basic bookkeeping principles and familiarity with the structure of the particular accounting system used. Determines proper records and distribution of debit and credit items to be used in each phase of the work. May prepare consolidated reports, balance sheets, and other records by hand.

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—Continued

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 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.

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

STENOGRAPHER, SENIOR—Continued

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

Operates a single- or multiple-position telephone switchboard. Duties involve handling incoming, outgoing, intraplant, or office calls. May handle routine long-distance calls and record toll calls. May perform limited information work, for example, giving telephone extension numbers when a specific name is furnished. May occasionally take telephone orders.

SWITCHBOARD OPERATOR, SPECIAL

In addition to the work described above for switchboard operator or as a full-time assignment, serves as a "special" operator who handles the more complex long-distance calls (e. g., conference, collect, overseas, or similar calls) or performs full telephone information service (e. g., where a knowledge of the work done in different parts of the organization is required).

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 labor market occupational wage surveys. (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, Admini- strative, Technical, and Clerical Pay	Labor Market Occupational Wage Surveys
Bookkeeping-machine operator-----	I II	B A
Clerk, accounting-----	I II	B A
Clerk, file-----	I II III	C B A
Keypunch operator-----	I II	B A
Tabulating-machine operator-----	I II III	C B A
Typist-----	I II	B A

**Appendix C. Comparison of Average Annual Salaries in Private Industry,
February—March 1964, with Corresponding Salary Rates
in Federal Classification Act General Schedule**

The survey was designed, among other uses, to provide a basis for comparing Federal salaries under the Classification Act with general pay levels in private industry. In order to assure compilation of pay data for work levels that would be equivalent to the Classification Act grades, the Civil Service Commission collaborated with the Bureau of Labor Statistics in the preparation of the occupation work level definitions used in the survey. All definitions were graded by the Commission in accordance with the standards established for each grade under the Classification Act. For each of the occupation work levels surveyed by the Bureau of Labor Statistics, the equivalent Classification Act grade, as determined by the Commission, is identified in the following table.

Comparison of Average Annual Salaries in Private Industry,¹ February-March 1964, with Salary Rates in Federal Classification Act General Schedule²

Occupation and class surveyed by BLS ³	Average annual salaries in private industry ⁴	Salary rates in Federal Classification Act General Schedule ²										
		Grade ⁵	Per annum rates and steps ⁶									
			1	2	3	4	5	6	7	8	9	10
Clerks, file I	\$3,106	GS 1	\$3,385	\$3,500	\$3,615	\$3,730	\$3,845	\$3,960	\$4,075	\$4,190	\$4,305	\$4,420
Office boys or girls	3,369											
Bookkeeping-machine operators I	3,627	GS 2	3,680	3,805	3,930	4,055	4,180	4,305	4,430	4,555	4,680	4,805
Clerks, file II	3,530											
Keypunch operators I	3,918											
Switchboard operators	4,282											
Tabulating-machine operators I	4,031											
Typists I	3,569											
Bookkeeping-machine operators II	4,467	GS 3	4,005	4,140	4,275	4,410	4,545	4,680	4,815	4,950	5,085	5,220
Clerks, accounting I	4,169											
Clerks, file III	4,419											
Engineering technicians I	4,872											
Keypunch operators II	4,513											
Stenographers, general	4,269											
Switchboard operators, special	4,746											
Tabulating-machine operators II	4,937											
Tracers	4,329											
Typists II	4,248											
Clerks, accounting II	5,530	GS 4	4,480	4,630	4,780	4,930	5,080	5,230	5,380	5,530	5,680	5,830
Draftsmen, junior	5,395											
Engineering technicians II	5,820											
Stenographers, senior	4,842											
Tabulating-machine operators III	5,951											
Accountants I	6,240	GS 5	5,000	5,165	5,330	5,495	5,660	5,825	5,990	6,155	6,320	6,485
Auditors I	5,832											
Chemists I	6,456											
Engineers I	7,344											
Engineering technicians III	6,672											
Job analysts I	6,576											
Draftsmen, senior	7,021	GS 6	5,505	5,690	5,875	6,060	6,245	6,430	6,615	6,800	6,985	7,170
Accountants II	6,840	GS 7	6,050	6,250	6,450	6,650	6,850	7,050	7,250	7,450	7,650	7,850
Auditors II	7,188											
Attorneys I	7,248											
Chemists II	7,320											
Engineers II	8,004											
Engineering technicians IV	7,512											
Job analysts II	7,452											
Accountants III	7,908	GS 9	7,220	7,465	7,710	7,955	8,200	8,445	8,690	8,935	9,180	9,425
Auditors III	8,520											
Attorneys II	8,532											
Chemists III	8,604											
Engineers III	9,204											
Engineering technicians V	8,556											
Job analysts III	8,544											
Managers, office services I	7,500											
Managers, office services II	9,240	GS 10	7,900	8,170	8,440	8,710	8,980	9,250	9,520	9,790	10,060	10,330
Accountants IV	9,504	GS 11	8,650	8,945	9,240	9,535	9,830	10,125	10,420	10,715	11,010	11,305
Auditors IV	10,284											
Attorneys III	10,464											
Chemists IV	10,632											
Chief accountants I	10,296											
Directors of personnel I	9,660											
Engineers IV	11,016											
Job analysts IV	10,164											
Managers, office services III	10,992											

See footnotes at end of table.

Comparison of Average Annual Salaries in Private Industry,¹ February-March 1964, with Salary Rates in Federal Classification Act General Schedule²—Continued

Occupation and class surveyed by BLS ³	Average annual salaries in private industry ⁴	Salary rates in Federal Classification Act General Schedule ²										
		Grade ⁵	Per annum rates and steps ⁶									
			1	2	3	4	5	6	7	8	9	10
Accountants V _____	\$11,568	GS 12	\$10,250	\$10,605	\$10,960	\$11,315	\$11,670	\$12,025	\$12,380	\$12,735	\$13,090	\$13,445
Attorneys IV _____	12,816											
Chemists V _____	12,744											
Chief accountants II _____	12,576											
Directors of personnel II _____	11,160											
Engineers V _____	12,924											
Managers, office services IV _____	12,948											
Attorneys V _____	16,032	GS 13	12,075	12,495	12,915	13,335	13,755	14,175	14,595	15,015	15,435	15,855
Chemists VI _____	14,748											
Chief accountants III _____	14,124											
Directors of personnel III _____	13,896											
Engineers VI _____	14,820											
Attorneys VI _____	18,420	GS 14	14,170	14,660	15,150	15,640	16,130	16,620	17,110	17,600	18,090	18,580
Chemists VII _____	17,328											
Chief accountants IV _____	15,948											
Directors of personnel IV _____	16,512											
Engineers VII _____	17,652											
Attorneys VII _____	24,288	GS 15	16,460	17,030	17,600	18,170	18,740	19,310	19,880	20,450	21,020	21,590
Chemists VIII _____	21,084											
Engineers VIII _____	20,484											

¹ For scope of survey, see table in appendix A.

² Salary rates as revised under the Federal Employees Salary Act of 1964, which became effective on the first day of the first pay period beginning on or after July 1, 1964.

³ For definitions, see appendix B.

⁴ Survey findings as summarized in table 1 of this report.

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

⁶ The Federal Salary Reform Act of 1962 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 department." For employees who meet this condition, the service requirements are 52 calendar weeks each for salary rates 1, 2, and 3; 104 weeks each for salary rates 4, 5, and 6; and 156 weeks each for salary rates 7, 8, and 9. 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 504 of the Federal Salary Reform Act of 1962 (Public Law 87-793, Pt. II), higher minimum rates (but not exceeding the seventh 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 engineers and scientists). Information on the 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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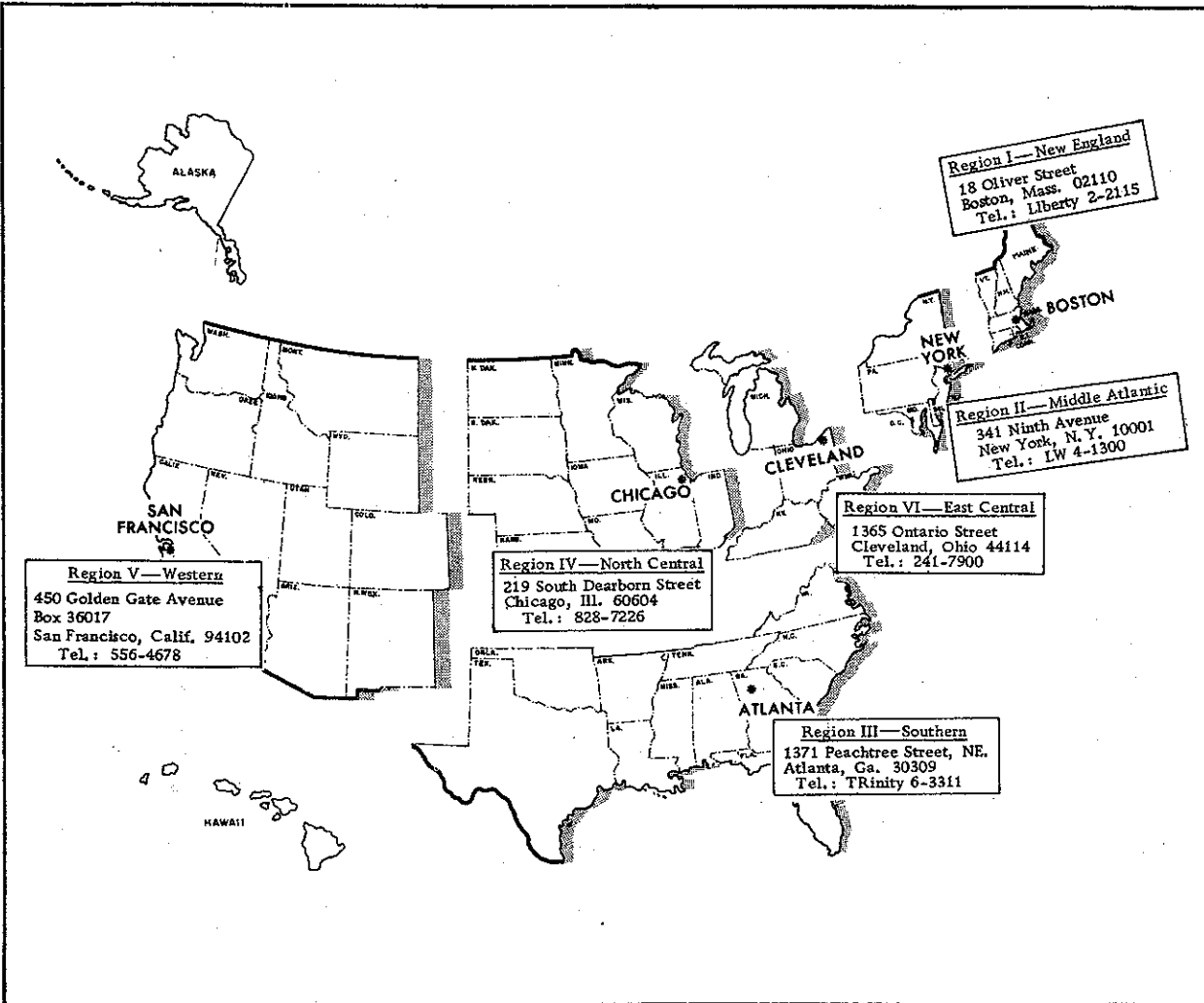
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