

Occupational Characteristics

GENERAL

This report presents detailed national statistics on selected economic and social characteristics of men and women workers in each occupation. The statistics in this report are based on a 5-percent sample of the population enumerated in the Eighteenth Decennial Census of Population, taken as of April 1, 1960.

In describing the social and demographic composition of the Nation's workers, data on such characteristics as age, race and color, State of birth, school enrollment, educational attainment, marital status, household relationship, size of family, and number of own children for women ever married are presented for each occupation. Also presented for each occupation are data on such economic characteristics as employment status, hours worked, weeks worked in 1959, year last worked, industry, class of worker, and income in 1959, and, for household heads, the rent of the renter-occupied nonfarm housing unit. Some of these data are shown for urban and rural residence.

The data in this report provide a broad basis for analyzing many of the factors affecting the occupational composition of the Nation's work force.

RELATED MATERIALS

1960 Census reports.--The present report supplements the reports for individual States and for the United States and its several regions and divisions, originally published in the 1960 Census of Population, Series PC(1)-C reports, "General Social and Economic Characteristics," and the Series PC(1)-D reports, "Detailed Characteristics." These reports form two of the four chapters of 1960 Census of Population, Volume I, Characteristics of the Population. Part 1 of Volume I presents data originally published in the four separate United States Summary reports; the remainder of the volume is divided into a part for each State and for the outlying areas, containing data originally published in the separate paper-bound series.

In Volume I, occupational data are presented for the population as a whole, each State, standard metropolitan statistical area, urban place, and county. Cross-classifications of occupational data are presented in Volume I with earnings in 1959, year last worked, industry, age, and place of work. The tables in the present report provide greater detail for analytical use at the national level.

Several of the Series PC(2) reports contain data on occupations by various characteristics. The report, PC(2)-7C, Occupation by Industry, contains detailed national statistics cross-classifying occupation by industry for employed persons. The report, PC(2)-7B, Occupation by Earnings and Education, presents national

and regional statistics on educational attainment and earnings in 1959 for males between the ages of 18 and 64 years in selected occupations.

Other related PC(2) reports, either published or in planning, present occupation data in relation to the subject of the report. Subjects covered in these reports are school enrollment, educational attainment, journey to work, family characteristics, fertility, mobility, nonwhite population by race, Puerto Ricans, and persons of Spanish surname.

The PC(3)-1A report, State Economic Areas, includes data on major occupation groups for State economic areas by urban and rural residence. The report, PC(3)-1D, Standard Metropolitan Statistical Areas, presents data on selected broad occupation groups in the largest standard metropolitan statistical areas and in various types of groupings of SMSA's.

1950 Census reports.--Data for 1950 on occupational characteristics similar to those shown here were presented in the report entitled 1950 Census of Population, Volume IV, Special Reports, Part 1, chapter B, Occupational Characteristics. (For a discussion of 1950-1960 comparisons, see section on "Comparability.")

Current Population Survey.--Data on occupations are also collected by the Bureau of the Census in the Current Population Survey (CPS) and published monthly by the Bureau of Labor Statistics, U.S. Department of Labor, in Employment and Earnings. In April 1960, the data for this survey were collected from a sample of approximately 35,000 households in 333 areas throughout the country. In addition, CPS data on major occupation group in cross-classification with such characteristics as marital status, mobility, and income are published by the Census Bureau in Series P-20 and P-60, Current Population Reports. The statistics provided by the Current Population Survey are, in general, designed to be comparable with the decennial census statistics. There are, however, certain elements of difference, as explained in the section on "Comparability."

AVAILABILITY OF UNPUBLISHED DATA

Data shown in this report can also be obtained for regions of the United States on a reimbursable basis. Requests for unpublished data, giving a specific description of the figures desired, may be made by writing to the Chief, Population Division, Bureau of the Census, Washington, D.C., 20233. Inquiries concerning unpublished data should be transmitted to the Bureau as soon as possible because tape files are not maintained indefinitely.

DEFINITIONS AND EXPLANATIONS

Some of the definitions used in 1960 differ from those used in 1950. These changes were made after consultation with users of census data in order to improve the statistics, even though it was recognized that comparability would be affected. The definitions and explanations should be interpreted in the context of the 1960 Censuses, in which data were collected by a combination of self-enumeration, direct interview, and observation by the enumerator.

The definitions below are consistent with the instructions given to the enumerator. As in all surveys, there were some failures to execute the instructions exactly. Through the forms distributed to households, the respondents were given explanations of some of the questions more uniformly than would have been given in direct interviews. Nevertheless, it was not feasible to give the full instructions to the respondents, and some erroneous replies have undoubtedly gone undetected.

More complete discussions of the definitions of population and housing items are given in 1960 Census of Population, Volume I, Characteristics of the Population, Part 1, United States Summary, and each of the State parts and in 1960 Census of Housing, Volume I, States and Small Areas.

EMPLOYMENT STATUS

The data on employment status relate to the calendar week prior to the date on which the respondents filled their Household Questionnaires or were interviewed by enumerators. This week is not the same for all respondents because not all persons were enumerated during the same week.

Employed persons comprise all civilians 14 years old and over who were either (a) "at work"--those who did any work for pay or profit, or worked without pay for 15 hours or more on a family farm or in a family business; or (b) were "with a job but not at work"--those who did not work and were not looking for work but had a job or business from which they were temporarily absent because of bad weather, industrial dispute, vacation, illness, or other personal reasons.

Persons are classified as unemployed if they were 14 years old and over and not "at work" but looking for work. A person is considered as looking for work not only if he actually tried to find work but also if he had made such efforts recently (i.e., within the past 60 days) and was awaiting the results of these efforts. Persons waiting to be called back to a job from which they had been laid off or furloughed are also counted as unemployed. Unemployed persons who have worked at any time in the past are classified as the "experienced unemployed."

The "civilian labor force" includes all persons classified as employed or unemployed, as described above. The "labor force" also includes members of the Armed Forces (persons on active duty with the United States Army, Air Force, Navy, Marine Corps, or Coast Guard). The "experienced civilian labor force" comprises the employed and the experienced unemployed.

Persons "not in the labor force" comprise all those 14 years old and over who are not classified as members of the labor force, including persons doing only incidental unpaid family work (less than 15 hours during the week).

HOURS WORKED

The statistics on hours worked pertain to the number of hours actually worked, and not necessarily to the number usually worked or the scheduled number of hours. For persons working at more than one job, the figures reflect the combined number of hours worked at all jobs during the week. The data on hours worked presented in this report provide a broad classification of persons at work into full-time and part-time workers. Persons are considered to be working full time if they worked 35 hours or more during the reference week and part time if they worked less than 35 hours.

OCCUPATION

The data on occupation, as well as industry and class of worker, were derived from answers to the questions on the Household Questionnaire, shown on the following page.

In the 1960 Census of Population, information on occupation was collected for persons in the experienced civilian labor force as well as for persons not in the current labor force but who had worked some time during the period 1950 to April 1960. For an employed person, the information referred to the job he held during the reference period. If he was employed at two or more jobs, the job at which he worked the greatest number of hours during the reference period was reported. For experienced unemployed persons, i.e., unemployed persons who have had job experience, and for those not in the labor force, the occupational information referred to the last job that had been held.

The occupational classification system used in the 1960 Census of Population, as described below, was developed in consultation with many individuals, private organizations, and government agencies, and in particular the Interagency Occupational Classification Committee of the United States Bureau of the Budget.

Classification system--The occupational classification system developed for the 1960 Census of Population is organized into 12 major groups and consists of 297 specific occupation categories. The composition of the 297 specific categories is shown in the publication, U.S. Bureau of the Census, 1960 Census of Population, Classified Index of Occupations and Industries, U.S. Government Printing Office, Washington, D.C., 1960.

For presentation of occupational data in this report, several levels of classification are used. Subgroupings of 17 of the 297 specific occupations (mainly on the basis of industry) are made, resulting in the presentation of approximately 500 items in the

P27. Occupation (Answer 1, 2, or 3)

1. This person last worked in 1949 or earlier }
 This person has never worked }

OR
 2. On active duty in the Armed Forces now

OR
 3. Worked in 1950 or later .. Answer a to e, below.

Describe this person's job or business last week, if any, and write in name of employer. If this person had no job or business last week, give information for last job or business since 1950.

a. For whom did he work?

.....
 (Name of company, business, organization, or other employer)

b. What kind of business or industry was this?

Describe activity at location where employed.

.....
 (For example: County junior high school, auto assembly plant, TV and radio service, retail supermarket, road construction, farm)

c. Is this primarily:

(Check one box)

- Manufacturing
 Wholesale trade
 Retail trade
 Other (services, agriculture, government, construction, etc.) ...

d. What kind of work was he doing?

.....
 (For example: 8th grade English teacher, paint sprayer, repairs TV sets, grocery checker, civil engineer, farmer, farm hand)

e. Was this person:

(Check one box)

- Employee of private company, business, or individual, for wages, salary, or commissions
 Government employee (Federal, State, county, or local)
 Self-employed in own business, professional practice, or farm
 Working without pay in a family business or farm

detailed listing. Also presented is the intermediate classification system, which presents 161 items for males and 70 for females. Tables focusing on unpaid family workers present data on selected occupations for this group. Both the intermediate classification and the occupations for unpaid family workers represent selections and combinations of occupation categories in the detailed system. The relationship between the detailed and intermediate levels of classification is given in Lists A and B for males and females, respectively.

In the separation of "managers, officials, and proprietors (n.e.c.)" by class of worker into salaried and self-employed components, the number of unpaid family workers in this occupation is included in the self-employed component. Since the data presented in this report refer only to civilians, the category "former members of the Armed Forces" for experienced unemployed and for persons in the labor reserve is limited to those whose last job was as a member of the Armed Forces.

The abbreviation "n.e.c." used in occupation tables of the census means "not elsewhere classified."

The subdivisions by industry shown for a number of occupations are based on the 1960 Population Census industrial classification system. An explanation of this system, including its relation to the Standard Industrial Classification (SIC), is given in 1960 Census of Population, Volume I, Characteristics of the Population, Part 1, United States Summary, and in the Volume II report, PC(2)-7C, Occupation by Industry.

Relationship to DOT Classification.--The occupational classification of the Population Census is generally comparable with the system used in the Dictionary of Occupational Titles (DOT).¹ The two systems, however, are designed to meet different needs and to be used under different circumstances. The DOT system is designed primarily for employment service needs such as placement and counseling, and is ordinarily used to classify very detailed occupational information obtained in an interview with the worker himself. The census system, on the other hand, is designed for statistical purposes and is ordinarily used in a self-enumeration questionnaire or in an interview with a member of the worker's family. As a result, the DOT system is much more detailed than the census system; and it also calls for many types of distinctions which cannot be made from census information.

Relation to certain industry groups.--In the Population Census classification systems, the industry category "agriculture" is somewhat more inclusive than the total of the two major occupation groups, "farmers and farm managers" and "farm laborers and foremen." The industry category also includes (a) persons employed on farms in occupations such as truck driver, mechanic, and bookkeeper, and (b) persons engaged in agricultural activities other than strictly farm operation, such as crop dusting or spraying, cotton ginning, and landscape gardening. Similarly, the industry category "private households" is somewhat more inclusive than the major occupation group "private household workers." In addition to the baby sitters, housekeepers, laundresses, and miscellaneous types of domestic workers covered by the major occupation group, the industry category includes persons in occupations such as chauffeurs, gardeners, and secretaries, if they are employed by private families.

Comparability

Earlier censuses.--Changes in schedule design and interviewing techniques between 1950 and 1960 may have affected comparability for some of the occupation categories. For example, a person may report his own job activities differently on self-enumeration when he is given the opportunity to report for himself, as contrasted to the 1950 direct enumeration procedure, where job descriptions were normally obtained in an interview with a member of the worker's family (usually his wife).

¹ See U.S. Department of Labor, Bureau of Employment Security, Dictionary of Occupational Titles, Second Edition, Vols. I and II, Washington, D.C., 1949.

**List A--INTERMEDIATE OCCUPATIONAL CLASSIFICATION FOR MALES (161 ITEMS)
WITH COMPONENT DETAILED ITEMS**

(Detailed occupation not shown where intermediate occupation consists of only one detailed occupation. "N.e.c." means not elsewhere classified)

- | | | |
|--|---|---|
| <p>1. Accountants and auditors</p> <p>2. Architects</p> <p>3. Artists and art teachers</p> <p>4. Authors, editors, and reporters
Authors
Editors and reporters</p> <p>5. Chemists</p> <p>6. Clergymen</p> <p>7. College presidents, professors, and instructors
(n.e.c.)
College presidents and deans
Professors and instructors
Agricultural sciences
Biological sciences
Chemistry
Economics
Engineering
Geology and geophysicists
Mathematics
Medical sciences
Physics
Psychology
Statistics
Natural sciences (n.e.c.)
Social sciences (n.e.c.)
Nonscientific subjects
Subjects not specified</p> <p>8. Dentists</p> <p>9. Designers and draftsmen
Designers
Draftsmen</p> <p>10. Engineers, aeronautical</p> <p>11. Engineers, civil</p> <p>12. Engineers, electrical</p> <p>13. Engineers, mechanical</p> <p>14. Other technical engineers
Engineers, chemical
Engineers, industrial
Engineers, metallurgical, and metallurgists
Engineers, mining
Engineers, sales
Engineers, not elsewhere classified</p> <p>15. Lawyers and judges</p> <p>16. Musicians and music teachers</p> <p>17. Natural scientists (n.e.c.)
Agricultural scientists
Biological scientists
Geologists and geophysicists
Mathematicians
Physicists
Miscellaneous natural scientists</p> <p>18. Pharmacists</p> <p>19. Physicians and surgeons</p> <p>20. Social scientists
Economists
Psychologists
Statisticians and actuaries
Miscellaneous social scientists</p> <p>21. Social, welfare, and recreation workers
Recreation and group workers
Social and welfare workers, except group</p> <p>22. Teachers, elementary schools
Public
Private</p> <p>23. Teachers, secondary schools
Public
Private</p> <p>24. Teachers (n.e.c.)</p> <p>25. Technicians, medical and dental</p> <p>26. Technicians, electrical and electronic</p> <p>27. Other professional, technical, and kindred workers--
Actors
Airplane pilots and navigators
Athletes
Chiropractors
Dancers and dancing teachers
Dietitians and nutritionists
Entertainers (n.e.c.)
Farm and home management advisors
Foresters and conservators
Funeral directors and embalmers
Librarians
Nurses, professional
Nurses, student professional
Optometrists
Osteopaths</p> | <p>27. Other professional, technical, and kindred workers--
Con.
Personnel and labor relations workers
Photographers
Public relations men and publicity writers
Radio operators
Religious workers
Sports instructors and officials
Surveyors
Technicians, other engineering and physical sciences
Technicians (n.e.c.)
Therapists and healers (n.e.c.)
Veterinarians
Professional, technical, and kindred workers
(n.e.c.)</p> <p>28. Farmers and farm managers
Farmers (owners and tenants)
Farm managers</p> <p>29. Officials and inspectors, State and local
administration
Inspectors, State public administration
Inspectors, local public administration
Officials and administrators (n.e.c.), State public
administration
Officials and administrators (n.e.c.), local public
administration</p> <p>30. Other specified managers and officials
Buyers and department heads, store
Buyers and shippers, farm products
Conductors, railroad
Credit men
Floor men and floor managers, store
Inspectors, Federal public administration and
postal service
Managers and superintendents, building
Officers, pilots, purveyors, and engineers, ship
Officials and administrators (n.e.c.), Federal
public administration and postal service
Officials, lodge, society, union, etc.
Postmasters
Purchasing agents and buyers (n.e.c.)</p> <p>Managers, officials, and proprietors (n.e.c.)--
salaried:</p> <p>31. Manufacturing</p> <p>32. Wholesale and retail trade
Wholesale trade
Food and dairy products stores
Eating and drinking places
General merchandise and limited price variety
stores
Apparel and accessories stores
Furniture, housefurnishings, and equipment stores
Motor vehicles and accessories retailing
Gasoline service stations
Hardware, farm equipment, and building material
retailing
Other retail trade</p> <p>33. Finance, insurance, and real estate
Banking and other finance
Insurance and real estate</p> <p>34. Other industries (incl. not reported)
Construction
Transportation
Communications, and utilities and sanitary serv.
Business services
Automobile repair services and garages
Miscellaneous repair services
Personal services
All other industries (incl. not reported)</p> <p>Managers, officials, and proprietors (n.e.c.)--
self-employed:</p> <p>35. Construction</p> <p>36. Manufacturing</p> <p>37. Wholesale trade</p> <p>38. Eating and drinking places</p> <p>39. Retail trade, except eating and drinking places
Food and dairy products stores
General merchandise and limited price variety
stores
Apparel and accessories stores
Furniture, housefurnishings, and equipment stores
Motor vehicles and accessories retailing
Gasoline service stations
Hardware, farm equipment, and building material
retailing
Other retail trade</p> <p>40. Other industries (incl. not reported)
Transportation
Communications, and utilities and sanitary
services
Banking and other finance
Insurance and real estate
Business services
Automobile repair services and garages</p> | <p>Managers, officials, and proprietors (n.e.c.)--
self-employed--Con.</p> <p>40. Other industries (incl. not reported)--Con.
Miscellaneous repair services
Personal services
All other industries (incl. not reported)</p> <p>41. Bookkeepers</p> <p>42. Mail carriers</p> <p>43. Other clerical and kindred workers
Agents (n.e.c.)
Attendants and assistants, library
Attendants, physician's and dentist's office
Baggage men, transportation
Bank tellers
Cashiers
Collectors, bill and account
Dispatchers and starters, vehicle
Express messengers and railway mail clerks
File clerks
Insurance adjusters, examiners, and investigators
Messengers and office boys
Office machine operators
Payroll and timekeeping clerks
Postal clerks
Receptionists
Secretaries
Shipping and receiving clerks
Stenographers
Stock clerks and storekeepers
Telegraph messengers
Telegraph operators
Telephone operators
Ticket, station, and express agents
Typists
Clerical and kindred workers (n.e.c.)</p> <p>44. Insurance agents, brokers, and underwriters</p> <p>45. Real estate agents and brokers</p> <p>46. Other specified sales workers
Advertising agents and salesmen
Auctioneers
Demonstrators
Hucksters and peddlers
Newsboys
Stock and bond salesmen</p> <p>Salesmen and sales clerks (n.e.c.):</p> <p>47. Manufacturing</p> <p>48. Wholesale trade</p> <p>49. Retail trade</p> <p>50. Other industries (incl. not reported)</p> <p>51. Bakers</p> <p>52. Blacksmiths, forgers, and hammermen
Blacksmiths
Forgers and hammermen</p> <p>53. Boilermakers</p> <p>54. Cabinetmakers and patternmakers
Cabinetmakers
Pattern and model makers, except paper</p> <p>55. Carpenters</p> <p>56. Compositors and typesetters</p> <p>57. Cranemen, derrickmen, and hoistmen</p> <p>58. Electricians</p> <p>Foremen (n.e.c.):</p> <p>59. Manufacturing, durable goods
Metal industries
Machinery, including electrical
Transportation equipment
Other durable goods</p> <p>60. Manufacturing nondurable goods (incl. not specified
manufacturing)
Textile, textile products, and apparel
Other nondurable goods (incl. not specified
manufacturing)</p> <p>61. Nonmanufacturing industries (incl. not reported)
Construction
Railroads and railway express service
Transportation, except railroad
Communications, and utilities and sanitary serv.
Other industries (incl. not reported)</p> <p>62. Linemen and servicemen, telegraph, telephone, and
power</p> <p>63. Locomotive engineers</p> <p>64. Locomotive firemen</p> <p>65. Machinists and job setters
Job setters, metal
Machinists</p> |
|--|---|---|

List A.--INTERMEDIATE OCCUPATIONAL CLASSIFICATION FOR MALES (161 ITEMS)
WITH COMPONENT DETAILED ITEMS--Con.

- | | | |
|--|---|--|
| <p>66. Masons, tile setters, and stone cutters
Brickmasons, stonemasons, and tile setters
Stone cutters and stone carvers</p> <p>67. Mechanics and repairmen, airplane</p> <p>68. Mechanics and repairmen, automobile</p> <p>69. Mechanics and repairmen, radio and TV</p> <p>70. Other mechanics and repairmen, and loom fixers
Loom fixers
Mechanics and repairmen, air conditioning, heating, and refrigeration
Mechanics and repairmen, office machine
Mechanics and repairmen, railroad and car shop
Mechanics and repairmen, not elsewhere classified</p> <p>71. Millwrights</p> <p>72. Molders, metal</p> <p>73. Painters (construction), paperhangers, and glaziers
Glaziers
Painters, construction and maintenance
Paperhangers</p> <p>74. Plasterers and cement finishers
Cement and concrete finishers
Plasterers</p> <p>75. Plumbers and pipe fitters</p> <p>76. Printing craftsmen, except compositors and typesetters
Bookbinders
Electrotypers and stereotypers
Engravers, except photoengravers
Photoengravers and lithographers
Pressmen and plate printers, printing</p> <p>77. Shoemakers and repairers, except factory</p> <p>78. Stationary engineers</p> <p>79. Structural metal workers</p> <p>80. Tailors and furriers
Furriers
Tailors</p> <p>81. Tinsmiths, coppersmiths, and sheet metal workers</p> <p>82. Toolmakers, and die makers and setters</p> <p>83. Other craftsmen and kindred workers
Decorators and window dressers
Excavating, grading, and road machinery operators
Heat treaters, annealers, and temperers
Inspectors, scalers, and graders, log and lumber
Inspectors (n.e.c.), construction
Inspectors (n.e.c.), railroads and railway express
Inspectors (n.e.c.), transportation, except railroads, communications, and other public utilities
Inspectors (n.e.c.), other industries (incl. not reported)
Jewelers, watchmakers, goldsmiths, and silversmiths
Millers, grain, flour, feed, etc.
Motion picture projectionists
Opticians, and lens grinders and polishers
Piano and organ tuners and repairmen
Rollers and roll hands, metal
Roofers and slaters
Upholsterers
Craftsmen and kindred workers (n.e.c.)
Former members of the Armed Forces</p> <p>84. Apprentices
Apprentice auto mechanics
Apprentice bricklayers and masons
Apprentice carpenters
Apprentice electricians
Apprentice machinists and tool makers
Apprentice mechanics, except auto
Apprentice plumbers and pipe fitters
Apprentices, building trades (n.e.c.)
Apprentices, metalworking trades (n.e.c.)
Apprentices, printing trades
Apprentices, other specified trades
Apprentices, trade not specified</p> <p>85. Assemblers</p> <p>86. Attendants, auto service and parking</p> <p>87. Brakemen and switchmen, railroad
Brakemen, railroad
Switchmen, railroad</p> <p>88. Bus drivers</p> <p>89. Checkers, examiners, and inspectors, manufacturing</p> <p>90. Filers, grinders, and polishers, metal</p> <p>91. Furnacemen, smeltermen, and pourers</p> | <p>92. Laundry and dry cleaning operatives</p> <p>93. Meat cutters, except slaughter and packing house</p> <p>94. Mine operatives and laborers (n.e.c.)
Coal mining
Crude petroleum and natural gas extraction
Mining and quarrying, except fuel</p> <p>95. Packers and wrappers (n.e.c.)</p> <p>96. Painters, except construction and maintenance</p> <p>97. Power station operators</p> <p>98. Sailors and deck hands</p> <p>99. Sawyers</p> <p>100. Spinners and weavers, textile
Spinners, textile
Weavers, textile</p> <p>101. Stationary firemen</p> <p>102. Taxicab drivers and chauffeurs</p> <p>103. Truck drivers and deliverymen
Delivery and routemen
Truck and tractor drivers</p> <p>104. Welders and flame-cutters</p> <p>105. Other specified operatives and kindred workers
Asbestos and insulation workers
Blasters and powdermen
Boatmen, canalmen, and lock keepers
Chairmen, rodmen, and axmen, surveying
Conductors, bus and street railway
Dressmakers and seamstresses, except factory
Dyers
Fruit, nut, and vegetable graders and packers, except factory
Graders and sorters, manufacturing
Heaters, metal
Knitters, loopers, and toppers, textile
Milliners
Motormen, mine, factory, logging camp, etc.
Motormen, street, subway, and elevated railway
Oilers and greasers, except auto
Photographic process workers
Severs and stitchers, manufacturing</p> <p>Operatives and kindred workers (n.e.c.):</p> <p>106. Sawmills, planing mills, and miscellaneous wood products
Sawmills, planing mills, and mill work
Miscellaneous wood products</p> <p>107. Furniture and fixtures</p> <p>108. Stone, clay, and glass products
Glass and glass products
Cement, and concrete, gypsum, and plaster products
Structural clay products
Pottery and related products
Miscellaneous nonmetallic mineral and stone products</p> <p>109. Primary metal industries
Blast furnaces, steel works, and rolling and finishing mills
Other primary iron and steel industries
Primary nonferrous industries</p> <p>110. Fabricated metal industries (incl. not specified metal)
Cutlery, hand tools, and other hardware
Fabricated structural metal products
Miscellaneous fabricated metal products
Not specified metal industries</p> <p>111. Machinery, except electrical
Farm machinery and equipment
Office, computing, and accounting machines
Miscellaneous machinery</p> <p>112. Electrical machinery, equipment, and supplies</p> <p>113. Motor vehicles and motor vehicle equipment</p> <p>114. Transportation equipment, except motor vehicle
Aircraft and parts
Ship and boat building and repairing
Railroad and miscellaneous transportation equipment</p> <p>115. Other durable goods
Professional equipment and supplies
Photographic equipment and supplies
Watches, clocks, and clockwork-operated devices
Miscellaneous manufacturing industries</p> | <p>Operatives and kindred workers (n.e.c.)--Con.</p> <p>116. Food and kindred products
Meat products
Dairy products
Canning and preserving fruits, vegetables, and sea foods
Grain-mill products
Bakery products
Confectionery and related products
Beverage industries
Miscellaneous food preparations and kindred products
Not specified food industries</p> <p>117. Yarn, thread, and fabric mills</p> <p>118. Knitting and other textile mill products
Knitting mills
Dyeing and finishing textiles, except wool and knit goods
Floor coverings, except hard surface
Miscellaneous textile mill products</p> <p>119. Apparel and other fabricated textile products
Apparel and accessories
Miscellaneous fabricated textile products</p> <p>120. Paper and allied products
Pulp, paper, and paperboard mills
Paperboard containers and boxes
Miscellaneous paper and pulp products</p> <p>121. Chemicals and allied products
Synthetic fibers
Drugs and medicines
Paints, varnishes, and related products
Miscellaneous chemicals and allied products</p> <p>122. Other nondurable goods
Tobacco manufactures
Newspaper publishing and printing
Printing, publishing, and allied industries, except newspapers
Petroleum refining
Miscellaneous petroleum and coal products
Rubber products
Miscellaneous plastic products
Leather: tanned, curried, and finished
Footwear, except rubber
Leather products, except footwear</p> <p>123. Not specified manufacturing industries</p> <p>124. Transportation, communication, and other public utilities
Railroads and railway express service
Transportation, except railroad
Communications, and utilities and sanitary services</p> <p>125. Wholesale and retail trade</p> <p>126. Other industries (incl. not reported)
Construction
Business and repair services
Personal services
Public administration
All other industries (incl. not reported)</p> <p>127. Private household workers
Baby sitters, private household
Housekeepers, private household--living in
Housekeepers, private household--living out
Laundresses, private household--living in
Laundresses, private household--living out
Private household workers (n.e.c.)--living in
Private household workers (n.e.c.)--living out</p> <p>128. Barbers</p> <p>129. Charwomen, janitors, and porters
Charwomen and cleaners
Janitors and sextons
Porters</p> <p>130. Cooks, except private household</p> <p>131. Elevator operators</p> <p>132. Firemen, fire protection</p> <p>133. Guards and watchmen
Guards, watchmen, and doorkeepers
Watchmen (crossing) and bridge tenders</p> <p>134. Policemen, sheriffs, and marshals
Marshals and constables
Policemen and detectives, government
Policemen and detectives, private
Sheriffs and bailiffs</p> <p>135. Waiters, bartenders, and counter workers
Bartenders
Counter and fountain workers
Waiters</p> |
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**List A.--INTERMEDIATE OCCUPATIONAL CLASSIFICATION FOR MALES (161 ITEMS)
WITH COMPONENT DETAILED ITEMS--Con.**

<p>136. Other service workers, except private household attendants, hospital and other institution attendants, professional and personal service (n.e.c.)</p> <p>Attendants, recreation and amusement</p> <p>Boatblacks</p> <p>Boarding and lodging house keepers</p> <p>Chambermaids and maids, except private household</p> <p>Hairdressers and cosmetologists</p> <p>Housekeepers and stewards, except private household</p> <p>Kitchen workers (n.e.c.), except private household</p> <p>Midwives</p> <p>Practical nurses</p> <p>Ushers, recreation and amusement</p> <p>Service workers, except private household (n.e.c.)</p> <p>137. Farm laborers, unpaid family workers</p> <p>138. Farm laborers, except unpaid, and farm foremen</p> <p>Farm foremen</p> <p>Farm laborers, wage workers</p> <p>Farm service laborers, self-employed</p> <p>139. Fishermen and oystermen</p> <p>140. Longshoremen and stevedores</p> <p>141. Lumbermen, raftsmen, and wood choppers</p> <p>142. Other specified laborers</p> <p>Carpenters' helpers, except logging and mining</p> <p>Garage laborers, and car washers and greasers</p> <p>Gardeners, except farm, and groundskeepers</p> <p>Teamsters</p> <p>Truck drivers' helpers</p> <p>Warehousemen (n.e.c.)</p> <p>Laborers (n.e.c.):</p> <p>143. Furniture, saw and planing mills, and miscellaneous wood products</p> <p>Furniture and fixtures</p> <p>Sawmills, planing mills, and millwork</p> <p>Miscellaneous wood products</p>	<p>Laborers (n.e.c.)--Con.</p> <p>144. Stone, clay, and glass products</p> <p>Glass and glass products</p> <p>Cement, and concrete, gypsum, and plaster products</p> <p>Structural clay products</p> <p>Pottery and related products</p> <p>Miscellaneous nonmetallic mineral and stone products</p> <p>145. Primary metal industries</p> <p>Blast furnaces, steel works, and rolling and finishing mills</p> <p>Other primary iron and steel industries</p> <p>Primary nonferrous industries</p> <p>146. Fabricated metal industries (incl. not specified metal)</p> <p>Outlery, hand tools, and other hardware</p> <p>Fabricated structural metal products</p> <p>Miscellaneous fabricated metal products</p> <p>Not specified metal industries</p> <p>147. Machinery, including electrical</p> <p>Farm machinery and equipment</p> <p>Office, computing, and accounting machines</p> <p>Miscellaneous machinery</p> <p>Electrical machinery, equipment, and supplies</p> <p>148. Transportation equipment</p> <p>Motor vehicles and motor vehicle equipment</p> <p>Aircraft and parts</p> <p>Ship and boat building and repairing</p> <p>Railroad and miscellaneous transportation equipment</p> <p>149. Other durable goods</p> <p>Professional equipment and supplies</p> <p>Photographic equipment and supplies</p> <p>Watches, clocks, and clockwork-operated devices</p> <p>Miscellaneous manufacturing industries</p> <p>150. Food and kindred products</p> <p>Wheat products</p> <p>Dairy products</p> <p>Canning and preserving fruits, vegetables, and sea foods</p> <p>Grain-mill products</p>	<p>Laborers (n.e.c.)--Con.</p> <p>150. Food and kindred products--Con.</p> <p>Bakery products</p> <p>Confectionery and related products</p> <p>Beverage industries</p> <p>Miscellaneous food preparations and kindred products</p> <p>Not specified food industries</p> <p>151. Textile mill products and apparel</p> <p>Yarn, thread, and fabric mills</p> <p>Other textile mill products</p> <p>Apparel and other fabricated textile products</p> <p>152. Chemicals and allied products</p> <p>Synthetic fibers</p> <p>Drugs and medicines</p> <p>Paints, varnishes, and related products</p> <p>Miscellaneous chemicals and allied products</p> <p>153. Other nondurable goods</p> <p>Tobacco manufactures</p> <p>Pulp, paper, and paperboard mills</p> <p>Paperboard containers and boxes</p> <p>Miscellaneous paper and pulp products</p> <p>Printing, publishing, and allied industries</p> <p>Petroleum refining</p> <p>Miscellaneous petroleum and coal products</p> <p>Rubber and miscellaneous plastic products</p> <p>Leather and leather products</p> <p>154. Not specified manufacturing industries</p> <p>155. Construction</p> <p>156. Railroads and railway express service</p> <p>157. Transportation, except railroad</p> <p>158. Communications, and utilities and sanitary services</p> <p>159. Wholesale and retail trade</p> <p>160. Other industries (incl. not reported)</p> <p>Business and repair services</p> <p>Personal services</p> <p>Public administration</p> <p>All other industries (incl. not reported)</p> <p>161. Occupation not reported</p>
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**List B.--INTERMEDIATE OCCUPATIONAL CLASSIFICATION FOR FEMALES (70 ITEMS)
WITH COMPONENT DETAILED ITEMS**

(Detailed occupation not shown where intermediate occupation consists of only one detailed occupation. "N.a.c." means not elsewhere classified)

<p>1. Accountants and auditors</p> <p>2. Actors, dancers, and entertainers (n.e.c.)</p> <p>Actors</p> <p>Dancers and dancing teachers</p> <p>Entertainers (n.e.c.)</p> <p>3. Artists and art teachers</p> <p>4. Authors, editors, and reporters</p> <p>Authors</p> <p>Editors and reporters</p> <p>5. College presidents, professors, and instructors (n.e.c.)</p> <p>College presidents and deans</p> <p>Professors and instructors</p> <p>Agricultural sciences</p> <p>Biological sciences</p> <p>Chemistry</p> <p>Economics</p> <p>Engineering</p> <p>Geology and geophysics</p> <p>Mathematics</p> <p>Medical sciences</p> <p>Physics</p> <p>Psychology</p> <p>Statistics</p> <p>Natural sciences (n.e.c.)</p> <p>Social sciences (n.e.c.)</p> <p>Nonscientific subjects</p> <p>Subjects not specified</p> <p>6. Designers and draftsmen</p> <p>Designers</p> <p>Draftsmen</p> <p>7. Dietitians and nutritionists</p> <p>8. Lawyers and judges</p> <p>9. Librarians</p> <p>10. Musicians and music teachers</p> <p>11. Natural scientists</p> <p>Agricultural scientists</p> <p>Biological scientists</p> <p>Chemists</p> <p>Geologists and geophysicists</p> <p>Mathematicians</p> <p>Physicists</p> <p>Miscellaneous natural scientists</p>	<p>12. Nurses, professional</p> <p>13. Nurses, student professional</p> <p>14. Physicians and surgeons</p> <p>15. Social scientists</p> <p>Economists</p> <p>Psychologists</p> <p>Statisticians and actuaries</p> <p>Miscellaneous social scientists</p> <p>16. Social, welfare, and recreation workers</p> <p>Recreation and group workers</p> <p>Social and welfare workers, except group</p> <p>17. Teachers, elementary schools</p> <p>Public</p> <p>Private</p> <p>18. Teachers, secondary schools</p> <p>Public</p> <p>Private</p> <p>19. Teachers (n.e.c.)</p> <p>20. Technicians, medical and dental</p> <p>21. Therapists and healers (n.e.c.)</p> <p>22. Other professional, technical, and kindred workers</p> <p>Airplane pilots and navigators</p> <p>Architects</p> <p>Athletes</p> <p>Chiropractors</p> <p>Clergymen</p> <p>Dentists</p> <p>Engineers, aeronautical</p> <p>Engineers, chemical</p> <p>Engineers, civil</p> <p>Engineers, electrical</p> <p>Engineers, industrial</p> <p>Engineers, mechanical</p> <p>Engineers, metallurgical, and metallurgists</p> <p>Engineers, mining</p> <p>Engineers, sales</p> <p>Engineers, not elsewhere classified</p> <p>Farm and home management advisors</p> <p>Foresters and conservationists</p> <p>Funeral directors and embalmers</p> <p>Optometrists</p> <p>Osteopaths</p>	<p>22. Other professional, technical, and kindred workers--Con.</p> <p>Personnel and labor relations workers</p> <p>Pharmacists</p> <p>Photographers</p> <p>Public relations men and publicity writers</p> <p>Radio operators</p> <p>Religious workers</p> <p>Sports instructors and officials</p> <p>Surveyors</p> <p>Technicians, electrical and electronic</p> <p>Technicians, other engineering and physical sciences</p> <p>Technicians (n.e.c.)</p> <p>Veterinarians</p> <p>Professional, technical, and kindred workers (n.e.c.)</p> <p>23. Farmers and farm managers</p> <p>Farmers (owners and tenants)</p> <p>Farm managers</p> <p>24. Specified managers and officials</p> <p>Buyers and department heads, stores</p> <p>Buyers and shippers, farm products</p> <p>Conductors, railroad</p> <p>Credit men</p> <p>Floor men and floor managers, store</p> <p>Inspectors, Federal public administration and postal service</p> <p>Inspectors, State public administration</p> <p>Inspectors, local public administration</p> <p>Managers and superintendents, building</p> <p>Officers, pilots, pursers, and engineers, ship</p> <p>Officials and administrators (n.e.c.), Federal public administration and postal service</p> <p>Officials and administrators (n.e.c.), State public administration</p> <p>Officials and administrators (n.e.c.), local public administration</p> <p>Officials, lodge, society, union, etc.</p> <p>Postmasters</p> <p>Purchasing agents and buyers (n.e.c.)</p> <p>Managers, officials, and proprietors (n.e.c.)--salaried:</p> <p>25. Wholesale and retail trade</p> <p>Wholesale trade</p> <p>Food and dairy products stores</p> <p>Eating and drinking places</p> <p>General merchandise and limited price variety stores</p>
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List B--INTERMEDIATE OCCUPATIONAL CLASSIFICATION FOR FEMALES (70 ITEMS)
WITH COMPONENT DETAILED ITEMS--Con.

- Managers, officials, and proprietors (n.e.c.)--
salaried--Con.
25. Wholesale and retail trade--Con.
Apparel and accessories stores
Furniture, housefurnishings, and equipment stores
Motor vehicles and accessories retailing
Gasoline service stations
Hardware, farm equipment, and building materials
retailing
Other retail trade
26. Other industries (incl. not reported)
Construction
Manufacturing
Transportation
Communications, and utilities and sanitary
services
Banking and other finance
Insurance and real estate
Business services
Automobile repair services and garages
Miscellaneous repair services
Personal services
All other industries (incl. not reported)
- Managers, officials, and proprietors (n.e.c.)--
self-employed:
27. Eating and drinking places
28. Wholesale and retail trade, except eating and
drinking places
Wholesale trade
Food and dairy products stores
General merchandise and limited price variety
stores
Apparel and accessories stores
Furniture, housefurnishings, and equipment stores
Motor vehicles and accessories retailing
Gasoline service stations
Hardware, farm equipment, and building material
retailing
Other retail trade
29. Other industries (incl. not reported)
Construction
Manufacturing
Transportation
Communications, and utilities and sanitary
services
Banking and other finance
Insurance and real estate
Business services
Automobile repair services and garages
Miscellaneous repair services
Personal services
All other industries (incl. not reported)
30. Bookkeepers
31. Cashiers
32. Office machine operators
33. Secretaries
34. Stenographers
35. Telephone operators
36. Typists
37. Other clerical and kindred workers
Agents (n.e.c.)
Attendants and assistants, library
Attendants, physician's and dentist's office
Baggage men, transportation
Bank tellers
Collectors, bill and account
Dispatchers and starters, vehicle
Express messengers and railway mail clerks
File clerks
Insurance adjusters, examiners, and investigators
Mail carriers
Messengers and office boys
Payroll and timekeeping clerks
Postal clerks
Receptionists
Shipping and receiving clerks
Stock clerks and storeroomkeepers
Telegraph messengers
Telegraph operators
Ticket, station, and express agents
Clerical and kindred workers (n.e.c.)
38. Insurance and real estate agents and brokers
Insurance agents, brokers, and underwriters
Real estate agents and brokers
39. Other specified sales workers
Advertising agents and salesmen
Auctioneers
Demonstrators
Hucksters and peddlers
Newsboys
Stock and bond salesmen
40. Salesmen and sales clerks (n.e.c.), retail trade
41. Salesmen and sales clerks (n.e.c.), except retail
trade
Manufacturing
Wholesale trade
Other industries (incl. not reported)
42. Foremen (n.e.c.)
Construction
Metal industries
Machinery, including electrical
Transportation equipment
Other durable goods
Textiles, textile products, and apparel
Other nondurable goods (incl. not specified mfg.)
Railroads and railway express service
Transportation, except railroad
Communications, and utilities and sanitary services
Other industries (incl. not reported)
43. Other craftsmen and kindred workers (Includes all
occupations in the major group "Craftsmen, foremen,
and kindred workers" except "Foreman (n.e.c.);" see
table 1 for detailed listing.)
44. Assemblers
45. Checkers, examiners, and inspectors, manufacturing
46. Dressmakers and seamstresses, except factory
47. Laundry and dry cleaning operatives
48. Spinners and weavers, textile
Spinners, textile
Weavers, textile
49. Other specified operatives and kindred workers (In-
cludes all occupations in the major group "Opera-
tives and kindred workers" except those included in
items 44, 45, 46, 47, and 48, and "Operatives and
kindred workers (n.e.c.);" see table 1 for de-
tailed listing.)
- Operatives and kindred workers (n.e.c.):
50. Machinery, including electrical
Farm machinery and equipment
Office, computing, and accounting machines
Miscellaneous machinery
Electrical machinery, equipment, and supplies
51. Other durable goods
Sawmills, planing mills, and mill work
Miscellaneous wood products
Furniture and fixtures
Glass and glass products
Cement, and concrete, gypsum, and plaster
products
Structural clay products
Pottery and related products
Miscellaneous nonmetallic mineral and stone
products
Blast furnaces, steel works, and rolling and
finishing mill
Other primary iron and steel industries
Primary nonferrous industries
Cutlery, hand tools, and other hardware
Fabricated structural metal products
Miscellaneous fabricated metal products
Not specified metal industries
Motor vehicles and motor vehicle equipment
Aircraft and parts
Ship and boat building and repairing
Railroad and miscellaneous transportation
equipment
Professional equipment and supplies
Photographic equipment and supplies
Watches, clocks, and clockwork-operated devices
Miscellaneous manufacturing industries
52. Food and kindred products
Meat products
Dairy products
Canning and preserving fruits, vegetables, and
sea foods
Grain-mill products
Bakery products
Confectionery and related products
Beverage industries
Miscellaneous food preparations and kindred
products
Not specified food industries
53. Textile mill products
Knitting mills
Dyeing and finishing textiles, except wool and
knit goods
Floor coverings, except hard surface
Yarn, thread, and fabric mills
Miscellaneous textile mill products
54. Apparel, and other fabricated textile products
Apparel and accessories
Miscellaneous fabricated textile products
- Operatives and kindred workers (n.e.c.)--Con.
55. Other nondurable goods (incl. not specified
manufacturing)
Tobacco manufactures
Pulp, paper, and paperboard mills
Paperboard containers and boxes
Miscellaneous paper and pulp products
Newspaper publishing and printing
Printing, publishing and allied industries,
except newspapers
Synthetic fibers
Drugs and medicines
Paints, varnishes, and related products
Miscellaneous chemicals and allied products
Petroleum refining
Miscellaneous petroleum and coal products
Rubber products
Miscellaneous plastic products
Leather: tanned, curried, and finished
Footwear, except rubber
Leather products, except footwear
Not specified manufacturing industries
56. Nonmanufacturing industries (incl. not reported)
Construction
Railroads and railway express service
Transportation, except railroad
Communications, and utilities and sanitary
services
Wholesale and retail trade
Business and repair services
Personal services
Public administration
All other industries (incl. not reported)
57. Private household workers--living in
Baby sitters--living in
Housekeepers--living in
Laundresses--living in
Private household workers (n.e.c.)--living in
58. Private household workers--living out
Baby sitters--living out
Housekeepers--living out
Laundresses--living out
Private household workers (n.e.c.)--living out
59. Attendants, hospital and other institution
60. Charwomen, janitors, and porters
Charwomen and cleaners
Janitors and sextons
Porters
61. Cooks, except private household
62. Hairdressers and cosmetologists
63. Housekeepers and stewards, except private household
64. Practical nurses and midwives
Midwives
Practical nurses
65. Waiters, bartenders, and counter workers
Bartenders
Counter and fountain workers
Waiters
66. Other service workers, except private household
Attendants, professional and personal service
(n.e.c.)
Attendants, recreation and amusement
Barbers
Boarding and lodging house keepers
Bootblacks
Chambermaids and maids, except private household
Elevator operators
Kitchen workers (n.e.c.), except private household
Firemen, fire protection
Guards, watchmen, and doorkeepers
Marshals and constables
Policemen and detectives, government
Policemen and detectives, private
Sheriffs and bailiffs
Watchmen (crossing) and bridge tenders
Fishers, recreation and amusement
Service workers, except private household (n.e.c.)
67. Farm laborers, unpaid family workers
68. Farm laborers, except unpaid family workers and farm
foremen
Farm foremen
Farm laborers, wage workers
Farm service laborers, self-employed
69. Laborers, except farm and mine (Includes major group
"Laborers, except farm and mine"; see table 1 for
detailed listing.)
70. Occupation not reported

The occupational classification system used in 1940 and 1950 is basically the same as that of 1960. There are a number of differences, however, in title and content for certain items, as well as in the degree of detail shown for the various major groups. For 1930 and earlier censuses, the occupational classification system was markedly different from the 1960 system. The following publications contain information on the various factors of comparability and are particularly useful for understanding differences in the occupation information from earlier censuses: U.S. Bureau of the Census, Sixteenth Census Reports, Population, Comparative Occupation Statistics for the United States, 1870 to 1940, 1943, and Bureau of the Census Working Paper No. 5, Occupational Trends in the United States: 1900 to 1950, 1958.

Current Population Survey.--To show the degree of consistency between the 1960 Census 25-percent sample and the April 1960 CPS, the percent of employed persons in the major occupation groups is compared in table A. The base of the percentages from the Census excludes workers who did not report their occupation.

Table A.—PERCENT DISTRIBUTION OF EMPLOYED PERSONS BY MAJOR OCCUPATION GROUP, ACCORDING TO 1960 CENSUS AND TO APRIL 1960 CURRENT POPULATION SURVEY

Major occupation group	Census (25-percent sample)	CPS
Total employed.....	100.0	100.0
Professional, technical, & kindred wkrs.	11.8	11.4
Farmers and farm managers.....	4.1	4.3
Managers, off'ls, & propr's, exc. farm..	8.8	10.5
Clerical and kindred workers.....	15.1	14.6
Sales workers.....	7.6	6.7
Craftsmen, foremen, & kindred workers...	14.2	13.0
Operatives and kindred workers.....	19.4	18.1
Private household workers.....	2.8	3.3
Service workers, exc. priv. household...	8.9	9.3
Farm laborers and foremen.....	2.3	3.4
Laborers, exc. farm and mine.....	5.0	5.4

The differences that exist between the national data from the Population Census and the CPS are due to a number of factors. Among these are the more extensive training, control, and experience of the CPS enumerators; differences in the time period to which the labor force data apply (the CPS covering the week containing the 12th of the month whereas the census covered the week prior to the date the respondent filled his questionnaire or was interviewed); differences in question wording and format of the schedules; differences in the methods used to process the original data into statistical tables; differences in the weighting procedure and in the population controls; differences in noninterview rates and the treatment of noninterview cases; and the sampling variability in the CPS and in the 5-percent sample used in this report. For further comparisons of CPS and census data, see section below on "Quality of data on occupation."

Other data.--Comparability between statistics presented in this report and statistics from other sources is frequently affected by differences in

concepts and definitions. Because the 1960 Census employment data were obtained from households, they differ from statistics based on reports from individual business establishments, farm enterprises, and certain government programs. In data shown here, persons employed at more than one job are counted only once as employed and are classified according to the job at which they worked the greatest number of hours during the reference week. In statistics based upon reports from business and farm establishments, on the other hand, persons who work for more than one establishment may be counted more than once. Moreover, establishment data, unlike those presented here, generally exclude private household workers, unpaid family workers, and self-employed persons, and may include workers less than 14 years of age. An additional difference arises from the fact that persons with a job but not at work are included with the employed in the statistics shown here, whereas only part of this group is likely to be included in employment figures based on establishment payroll reports.

In addition, comparability between statistics presented in this report and statistics from other sources is frequently affected by the use of different classification systems. Occupation figures from the Population Census are not always directly comparable with data from government licensing agencies, professional associations, trade unions, etc. Among the sources of difference may be the inclusion in the organizational listing of retired persons or persons devoting all or most of their time to another occupation, the inclusion of the same person in two or more different listings, and the fact that relatively few organizations attain complete coverage of membership in an occupation field.

Quality of Data on Occupation

Many of the figures shown here are probably subject to some understatement because of the omission of some marginal workers from the count of employed persons. For example, housewives, students, and semi-retired persons, who are in the labor force on only a part-time or intermittent basis, may fail to report they are employed. These omissions arise from the difficulty of applying certain of the employment status concepts, and, perhaps more important, from the fact that complete information is not always obtained for certain groups. The age group with the largest relative difference in the number of persons in the labor force in the 1960 Census and the Current Population Survey was that for 14 to 24 years old. This group has a relatively large proportion of persons in the labor force who work part time (33.2 percent) and who, therefore, may fail to report that they are employed.

Table B presents a comparison of employment status data between the 1960 Census and April 1960 CPS. The estimated size of the employed population in the United States based on the Current Population Survey is slightly over 2 percent above the corresponding census figure. This difference represents a considerable improvement over the 1950 comparison in which the CPS figure exceeded the census figure by about 5 percent.

Table B.--COMPARISON OF EMPLOYMENT STATUS OF THE CIVILIAN NONINSTITUTIONAL POPULATION: 1960 CENSUS AND APRIL 1960 CPS

(Thousands of persons 14 years of age and over)

Employment status	Census ¹ (25- percent sample)	April CPS	Difference	
			Number	Percent of CPS
Total.....	122,783	122,406	+377	+0.3
Labor force.....	68,144	69,819	-1,675	-2.4
Employed.....	64,639	66,159	-1,520	-2.3
Agriculture.....	4,257	5,393	-1,136	-21.1
Nonagriculture.....	60,382	60,766	-384	-0.6
Unemployed.....	3,505	3,660	-155	-4.2
Not in labor force.....	54,639	52,587	+2,052	+3.9

¹ 1960 Census of Population, Volume I, Characteristics of the Population, Part 1, United States Summary, chapter C.

The application of a detailed occupational classification to approximately 65 million workers is obviously subject to some error. Although the number of misclassifications probably does not have any serious effect on the usefulness of the data, there are a few cases where relatively small numbers of erroneous returns may produce what might be regarded as a serious misstatement of the facts. Some of the more obvious misclassifications have been edited, but it was not possible to perform a complete review of the data for all discrepancies.

More information on quality of the data will be available after various census evaluation projects are completed.

MEDIAN

The median is presented in connection with the data on age, years of school completed, income, and rent of housing unit. It is the value which divides the distribution into two equal parts, one-half the cases falling below this value and one-half the cases exceeding this value.

A plus (+) or minus (-) sign after the median indicates that the median is above or below that number. For example, a median of \$10,000+ for income indicates that the median fell in the interval "\$10,000 or more."

URBAN-RURAL RESIDENCE

In general, the urban population comprises all persons living in urbanized areas and in places of 2,500 inhabitants or more outside urbanized areas. More specifically, according to the definition adopted for use in the 1960 Census, the urban population comprises all persons living in (a) places of 2,500 inhabitants or more incorporated as cities, boroughs, villages, and towns (except towns in New England, New York, and Wisconsin); (b) the densely settled urban fringe, whether incorporated or unincorporated, of urbanized areas; (c) towns in New England and townships in New Jersey and Pennsylvania which contain no incorporated municipalities as subdivisions and have either 25,000 inhabitants or more or a population of

2,500 to 25,000 and a density of 1,500 persons or more per square mile; (d) counties in States other than the New England States, New Jersey, and Pennsylvania that have no incorporated municipalities within their boundaries and have a density of 1,500 persons or more per square mile; and (e) unincorporated places of 2,500 inhabitants or more. The population not classified as urban constitutes the rural population.

FARM-NONFARM RESIDENCE

The rural population is subdivided into the rural-farm population, which comprises all rural residents living on farms, and the rural-nonfarm population, which comprises the remaining rural population. The nonfarm population, as the term is used in this report, comprises persons living in urban areas and rural persons not on farms. In the 1960 Census, the farm population consists of persons living in rural territory on places of 10 or more acres from which sales of farm products amounted to \$50 or more in 1959 or on places of less than 10 acres from which sales of farm products amounted to \$250 or more in 1959. All persons living in group quarters are classified as nonfarm except the relatively few living in workers' quarters (including quarters for migratory agricultural workers) that are located on a farm or ranch.

AGE

The age classification is based on the age of the person in completed years as of April 1, 1960, as determined from the reply to a question on month and year of birth.

RACE AND COLOR

The three major race categories distinguished in this report are white, Negro, and other races. Among persons of "other races" are American Indians, Japanese, Chinese, Filipinos, Koreans, Hawaiians, Asian Indians, Eskimos, Aleuts, and Malaysians. Negroes and persons of "other races" taken together constitute "nonwhite" persons. Persons of Mexican birth or descent who are not definitely of Indian or other nonwhite race are classified as white. In addition to persons of Negro and of mixed Negro and white descent, the category "Negro" includes persons of mixed Indian and Negro descent unless the Indian ancestry very definitely predominates or unless the person is regarded as an Indian in the community.

NATIVITY

Native.--This category comprises persons born in the United States, the Commonwealth of Puerto Rico, or a possession of the United States; persons born in a foreign country or at sea who have at least one native American parent; and persons whose place of birth was not reported and whose census report contained no contradictory information, such as an entry of a language spoken prior to coming to the United States.

Foreign born.--This category includes all persons not classified as native.

STATE OF BIRTH OF THE NATIVE POPULATION

In this report, the native population is further classified into the following groups: Persons born in the State in which they were residing at the time of the census, persons born in a different State in the same region, and persons born in a different region. Persons born in an outlying area of the United States, persons born abroad or at sea of native American parents, and persons whose State of birth was not reported are all included in the category "State not reported." The 1960 instructions specified that place of birth was to be reported in terms of the mother's usual State of residence at the time of the birth rather than in terms of the location of the hospital if the birth occurred in a hospital.

SCHOOL ENROLLMENT

School enrollment is shown for persons 5 to 34 years old. Persons were included as enrolled in school if they were reported as attending or enrolled in a "regular" school or college at any time between February 1, 1960, and the time of enumeration. Regular schooling is that which may advance a person toward an elementary school certificate or high school diploma, or a college, university, or professional degree. Schooling that was not obtained in a regular school and schooling from a tutor or through correspondence courses were counted only if the credits obtained were regarded as transferable to a school in the regular school system. Schooling which is generally regarded as not regular includes that which is given in nursery schools; in specialized vocational, trade, or business schools; in on-the-job training; and through correspondence courses.

YEARS OF SCHOOL COMPLETED

The data on years of school completed were derived from the answers to the two questions: (a) "What is the highest grade (or year) of regular school he has ever attended?" and (b) "Did he finish this grade (or year)?" Enumerators were instructed to obtain the approximate equivalent grade in the American school system for persons whose highest grade of attendance was in a foreign school system, whose highest level of attendance was in an ungraded school, whose highest level of schooling was measured by "readers," or whose training by a tutor was regarded as qualifying under the "regular" school definition. Persons were to answer "No" to the second question if they were attending school, had completed only part of a grade before they dropped out, or failed to pass the last grade attended.

The number in each category of highest grade of school completed represents the combination of (a) persons who reported that they had attended the indicated grade and finished it, and (b) those who had attended the next higher grade but had not finished it.

Elementary school, as defined here, includes grades 1 to 8, and high school includes grades 9 to 12. College includes junior or community colleges, regular 4-year colleges, and graduate or professional schools.

MARITAL STATUS

This classification refers to the marital status of the person at the time of enumeration. Persons classified as "married" comprise, therefore, both those who have been married only once and those who remarried after having been widowed or divorced. Persons reported as separated (either legally separated or otherwise absent from the spouse because of marital discord) are classified as a subcategory of married persons. The enumerators were instructed to report persons in common-law marriages as married and persons whose only marriage had been annulled as single. Persons "ever married" are those in the categories married (including separated), widowed, and divorced.

The number of married men may be different from the number of married women for an area because of the absence of husbands or wives from the country, because the husband and wife have different places of residence, because of the methods used to inflate the sample data, or for other reasons.

A married person with "spouse present" is a man or woman whose spouse was enumerated as a member of the same household even though he or she may have been temporarily absent on business or vacation, visiting, in a hospital, etc., at the time of enumeration.

HOUSEHOLD, HOUSING UNIT, GROUP QUARTERS, AND
RELATIONSHIP TO HEAD OF HOUSEHOLD

A household consists of all the persons who occupy a housing unit. A house, an apartment or other group of rooms, or a single room, is regarded as a housing unit when it is occupied or intended for occupancy as separate living quarters; that is, when the occupants do not live and eat with any other persons in the structure and there is either (1) direct access from the outside or through a common hall or (2) a kitchen or cooking equipment for the exclusive use of the occupants.

All persons who are not members of households are regarded as living in group quarters. Group quarters are living arrangements for institutional inmates or for other groups containing five or more persons unrelated to the person in charge. Most of the persons in group quarters live in rooming houses, college dormitories, military barracks, or institutions. Inmates of institutions are persons for whom care or custody is provided in such places as homes for delinquent or dependent children; homes and schools for the mentally or physically handicapped; places providing specialized medical care for persons with mental disorders, tuberculosis, or other chronic disease; nursing and domiciliary homes for the aged and dependent; prisons; and jails.

For persons in households, several categories of relationship to head of household are recognized in this report:

1. The head of the household is the member reported as the head by the household respondent. However, if a married woman living with her husband is reported as the head, her husband is classified as the head for the purpose of census tabulations.

2. The wife of a head of a household is a woman married to and living with a household head. This category includes women in common-law marriages as well as women in formal marriages.

3. A child of the head is a son, daughter, stepchild, or adopted child of the head of the household. "Child of head" is a more inclusive category than "own child of head" (defined below).

4. An other relative of the head is a person related to the head of the household by blood, marriage, or adoption, but not included specifically in another category.

FAMILY AND OWN CHILD

A family consists of two or more persons in the same household who are related to each other by blood, marriage, or adoption; all persons living in one household who are related to each other are regarded as one family. In a primary family, the head of the family is the head of a household. Other families are secondary families.

A subfamily is a married couple with or without children, or one parent with one or more own children under 18 years old, living in a housing unit and related to the head of the household or his wife. The number of subfamilies is not included in the count of families.

An own child of a woman ever married is defined here as a single (never married) son, daughter, stepchild, or adopted child of the woman. Only those children who are present in the home are included in the count of women by number of own children.

WEEKS WORKED IN 1959

The data on weeks worked in 1959 pertain to the number of different weeks during 1959 in which a person did any work for pay or profit (including paid vacation and sick leave) or worked without pay on a family farm or in a family business. Weeks of active service in the Armed Forces are also included.

YEAR LAST WORKED

The "year last worked" pertains to the most recent year in which a person did any work for pay or profit, or worked without pay on a family farm or in a family business. Active service in the Armed Forces is also included. Data derived from this item were tabulated for persons classified as not in the labor force and for persons classified as unemployed. Persons not in the labor force with work experience within the last 10 years are referred to as members of the "labor reserve."

INDUSTRY

The data on industry in this report refer to the job held during the week for which employment status and occupation was reported. For persons employed at two or more jobs, the data refer to the job at which the person worked the greatest number of hours. The

industry data, as well as the occupation data, presented here are based on the detailed systems developed for the 1960 Census; see 1960 Census of Population, Classified Index of Occupations and Industries, U.S. Government Printing Office, Washington, D.C., 1960.

CLASS OF WORKER

The class-of-worker information refers to the same job as the occupation information. The assignment of a person to a particular class-of-worker category is basically independent, however, of the occupation in which he worked. The classification by class of worker consists of four categories which are defined as follows:

1. Private wage and salary workers.--Persons who worked for a private employer for wages, salary, commission, tips, pay-in-kind, or at piece rates.

2. Government workers.--Persons who worked for any governmental unit (Federal, State, local, or international), regardless of the activity which the particular agency carried on.

3. Self-employed workers.--Persons who worked for profit or fees in their own business, profession, or trade, or who operated a farm either as an owner or tenant. Included here are the owner-operators of large stores and manufacturing establishments as well as small merchants, independent craftsmen and professional men, farmers, peddlers, and other persons who conducted enterprises of their own. Persons paid to manage businesses owned by other persons or by corporations, on the other hand, are classified as private wage and salary workers (or, in some few cases, as government workers).

4. Unpaid family workers.--Persons who worked without pay on a farm or in a business operated by a person to whom they are related by blood or marriage. The great majority of unpaid family workers are farm laborers.

Wage and salary workers include private wage and salary workers and government workers, as defined above.

The relatively small number of employed persons for whom class of worker was not reported have been included among private wage and salary workers unless there was evidence on the census schedule that they should have been classified in one of the other class-of-worker categories.

INCOME IN 1959

Information on income for the calendar year 1959 was requested from all persons 14 years old and over in the sample. "Total income" is the sum of amounts reported separately for wage or salary income, self-employment income, and other income. Wage or salary income is defined as the total money earnings received for work performed as an employee. It represents the amount received before deductions for personal income taxes, Social Security, bond purchases, union dues, etc. Self-employment income is defined as net money income (gross receipts minus operating expenses) from a business, farm, or professional enterprise in which

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the person was engaged on his own account. Earnings are obtained by summing wage or salary and self-employment income. Other income includes money income received from such sources as net rents, interest, dividends, Social Security benefits, pensions, veterans' payments, unemployment insurance, and public assistance or other governmental payments, and periodic receipts from insurance policies or annuities. Not included as income are money received from the sale of property (unless the recipient was engaged in the business of selling such property), the value of income "in kind," withdrawals of bank deposits, money borrowed, tax refunds, and gifts and lump-sum inheritances or insurance payments.

HOUSING CHARACTERISTICS

Occupied housing unit.--A housing unit is "occupied" if it is the usual place of residence of the person or group of persons living in it at the time of enumeration. Included are units occupied by persons who are only temporarily absent, such as persons on vacation. Units occupied by persons with no usual place of residence are also considered occupied.

Tenure.--A housing unit is "owner occupied" if the owner or co-owner lives in the unit, even if it is

mortgaged or not fully paid for. The head himself need not be the owner. All other occupied units are classified as "renter occupied," whether or not cash rent is paid.

Value.--Value is the respondent's estimate of how much the property would sell for on the current market (April 1960). Value data are restricted to owner-occupied units having only one housing unit in the property and no business. Units in multiunit structures and trailers were excluded from the tabulations, and in rural territory, units on farms and all units on places of 10 acres or more (whether farm or nonfarm) also were excluded.

Gross rent.--Gross rent is based on the information reported for contract rent and the cost of utilities and fuel. Contract rent is the monthly rent agreed upon regardless of any furnishings, utilities, or services that may be included. The computed rent termed "gross rent" is the contract rent plus the average monthly cost of utilities (water, electricity, gas) and fuels such as wood, coal, and oil if these items are paid for by the renter. Thus, gross rent eliminates differentials which result from varying practices with respect to the inclusion of utilities and fuel as part of the rental payment. Rent data exclude rents for units in rural-farm territory.

COLLECTION AND PROCESSING OF DATA

COLLECTION OF DATA

Several enumeration forms were used to collect the information for the 1960 Census of Population. A few days before the census date, the Post Office Department delivered an Advance Census Report (ACR) to households on postal delivery routes. This form contained questions which were to be answered for every person and every housing unit. Household members were requested to fill the ACR and have it ready for the enumerator. The census enumerator recorded this information on a form specially designed for electronic data processing by FOSDIC (Film Optical Sensing Device for Input to Computer). The information was either transcribed from the ACR to the complete-count FOSDIC schedule or entered on this schedule during direct interview.

In the densely populated areas, the enumerator left a Household Questionnaire to be completed by each household (or person) in the sample and mailed to the local census office. The population and housing information was transcribed from the Household Questionnaire to a sample FOSDIC schedule. When the Household Questionnaire was not returned or was returned without having been completed, the enumerator collected the missing information by personal visit or by telephone and entered it directly on the sample FOSDIC schedule. In the remaining areas, when the enumerator picked up the ACR, he obtained all the information by direct interview and recorded it directly on the sample FOSDIC schedule.

Soon after the enumerator started work, his schedules were examined in a formal field review. This operation was designed to assure at an early stage of

the work that the enumerator was performing his duties properly and had corrected any errors he had made.

More detailed descriptions of the 1960 Census procedures in the collection and processing of the data are given in reports entitled United States Censuses of Population and Housing, 1960: Principal Data Collection Forms and Procedures, 1961; and Processing the Data, 1962, U.S. Government Printing Office, Washington, D.C., 20402.

MANUAL EDITING AND CODING

After the FOSDIC forms had been checked for completeness in the field, they were sent to a central processing office for manual editing and coding and for microfilming. Except where some special problems arose, there was no manual coding of the FOSDIC forms for complete-count data. On the sample forms, the manual operation was limited to those items where coding required the reading of written entries and therefore could not be done effectively by machine. The coding clerks converted the written entries to codes by marking the appropriate circles on the FOSDIC schedules and at the same time were able to correct obviously wrong entries and sometimes supply missing information.

ELECTRONIC PROCESSING

After the enumerators and coders recorded the information by marking the appropriate circles, the schedules were microfilmed. The information on the microfilm was then read by FOSDIC, which converted the markings to signals on magnetic tape. The tape, in

turn, was processed in an electronic computer, which was used extensively to edit and tabulate the data and to produce the publication tables.

EDITING

For a majority of items, nonresponses and inconsistencies were eliminated by using the computer to assign entries and correct inconsistencies. In general, few assignments or corrections were required, although the amount varied by subject and by enumerator.

The assignment of an acceptable entry by machine was based on related information reported for the person or on information reported for a similar person in the immediate neighborhood. For example, in the assignment of age in the complete-count tabulations, the computer stored reported ages of persons by sex, color or race, household relationship, and marital status; each stored age was retained in the computer only until a succeeding person having the same characteristics and having age reported was processed through the computer; this stored age was assigned to the next person whose age was unknown and who otherwise had the same characteristics. This procedure insured that the distribution of ages assigned by the computer for persons of a given set of characteristics would correspond closely to the reported age distribution of such persons as obtained in the current census.

It was decided that, because of the great variety of occupations, allocation for omission of entries was not feasible. Therefore, persons whose occupation information was lacking were generally classified as "not reported." However, assignments of occupation codes were made in cases of certain omissions and inconsistencies. These assignments were made on the basis of obvious relationships existing between certain occupations, industries, and class of worker. For example, a person reporting himself as "self-employed" in industry and as "own" in class of worker was assigned the occupation of a proprietor.

The extent of the allocations for nonresponse or for inconsistency is shown for the United States and for States, places of 10,000 inhabitants or more, and other areas in appendix tables in chapters B, C, and D of 1960 Census of Population, Volume I, Characteristics of the Population.

Specific tolerances were established for the number of computer allocations acceptable for a given area. If the number was beyond tolerance, the data

were rejected and the original schedules were re-examined to determine the source of the error. Correction and reprocessing were undertaken as necessary and feasible.

ACCURACY OF THE DATA

Human and mechanical errors occur in any mass statistical operation such as a decennial census. Such errors include failure to obtain required information from respondents, obtaining inconsistent information, recording information in the wrong place or incorrectly, or otherwise producing inconsistencies between entries on interrelated items on the field documents. Sampling biases occur because some of the enumerators fail to follow the sampling instructions. Clerical coding and editing errors occur, as well as errors in the electronic processing operation.

Careful efforts are made in every census to keep the errors in each step at an acceptably low level. Review of the enumerator's work, verification of manual coding and editing, checking of tabulated figures, and ratio estimation of sample data to control totals from the complete count reduce the effects of the errors in the census data.

Very minor differences between tables in this report or between corresponding data in this report and chapters C and D of Volume I, Characteristics of the Population, result from imperfections in the electronic equipment. No attempt has been made to reconcile these minor discrepancies.

Some innovations in the 1960 Censuses reduced errors in processing and others produced a more consistent quality of editing. The elimination of the card-punching operation removed one important source of error. The extensive use of electronic equipment insured a more uniform and more flexible edit than could have been accomplished manually or by less intricate mechanical equipment. It is believed that the use of electronic equipment in the 1960 Censuses has improved the quality of the editing compared with that of earlier censuses but, at the same time, it has introduced an element of difference in the statistics.

A group of reports designated "Evaluation and Research Series" will deal with the methods, results, and interpretation of a group of evaluation and research studies of the 1960 Censuses of Population and Housing. A report entitled The Post-Enumeration Survey: 1950, Technical Paper No. 4, presents evaluative material on the 1950 Census.

SAMPLE DESIGN AND SAMPLING VARIABILITY

SAMPLE DESIGN

For persons in housing units at the time of the 1960 Census, the sampling unit was the housing unit and all its occupants; for persons in group quarters, it was the person. On the first visit to an address, the enumerator assigned a sample key letter (A, B, C, or D) to each housing unit sequentially in the order in which he first visited the units, whether or not he completed an interview. Each enumerator was given a

random key letter to start his assignment, and the order of canvassing was indicated in advance, although these instructions allowed some latitude in the order of visiting addresses. Each housing unit to which the key letter "A" was assigned was designated as a sample unit, and all persons enumerated in the unit were included in the sample. In every group quarters, the sample consisted of every fourth person in the order listed. The 1960 statistics in this report are based on a subsample of one-fifth of the original 25-percent

sample schedules. The subsample was selected on the computer, using a stratified systematic sample design. The strata were made up as follows: For persons in regular housing units there were 36 strata, i.e., 9 household size groups by 2 tenure groups by 2 color groups; for persons in group quarters, there were 2 strata, i.e., the 2 color groups.

Although the sampling procedure did not automatically insure an exact 5 percent sample of persons, the sample design was unbiased if carried through according to instructions. Generally, for large areas, the

deviation from the estimated sample size was found to be quite small. Biases may have arisen, however, when the enumerator failed to follow his listing and sampling instructions exactly.

Table C compares the distribution by major occupation group of employed persons, as presented in this report, based on the 5-percent sample with corresponding statistics based on the 25-percent sample presented in Volume I of the 1960 Census of Population. Differences in this table reflect primarily sampling error.

Table C.--OCCUPATION--COMPARISON OF 25-PERCENT AND 5-PERCENT SAMPLE DATA ON MAJOR OCCUPATION GROUP OF EMPLOYED PERSONS, BY SEX, FOR THE UNITED STATES: 1960

Major occupation group and sex	25-percent sample	5-percent sample	Percent distribution		Ratio of 25-percent sample number to 5-percent sample number
			25-percent sample	5-percent sample	
Male, employed.....	43,466,955	43,490,888	100.0	100.0	0.999
Professional, technical, and kindred workers.....	4,479,358	4,473,300	10.3	10.3	1.001
Farmers and farm managers.....	2,387,584	2,392,247	5.5	5.5	0.998
Managers, officials, and proprietors, except farm.....	4,629,842	4,627,827	10.6	10.6	1.000
Clerical and kindred workers.....	3,015,476	3,027,732	6.9	7.0	0.996
Sales workers.....	2,977,872	2,983,675	6.8	6.9	0.998
Craftsmen, foremen, and kindred workers.....	8,488,777	8,500,579	19.5	19.5	0.999
Operatives and kindred workers.....	8,641,652	8,663,746	19.9	19.9	0.997
Private household workers.....	61,063	60,396	0.1	0.1	1.011
Service workers, except private household.....	2,598,673	2,599,758	6.0	6.0	1.000
Farm laborers and foremen.....	1,201,922	1,195,004	2.9	2.7	1.006
Laborers, except farm and mine.....	2,997,785	2,982,858	6.9	6.9	1.005
Occupation not reported.....	1,986,951	1,983,766	4.6	4.6	1.002
Female, employed.....	21,172,301	21,155,675	100.0	100.0	1.001
Professional, technical, and kindred workers.....	2,753,052	2,749,941	13.0	13.0	1.001
Farmers and farm managers.....	118,100	115,925	0.6	0.5	1.019
Managers, officials, and proprietors, except farm.....	779,701	780,063	3.7	3.7	1.000
Clerical and kindred workers.....	6,291,420	6,275,499	29.7	29.7	1.003
Sales workers.....	1,661,113	1,660,109	7.8	7.8	1.001
Craftsmen, foremen, and kindred workers.....	252,515	252,889	1.2	1.2	0.999
Operatives and kindred workers.....	3,255,949	3,256,696	15.4	15.4	1.000
Private household workers.....	1,664,763	1,655,735	7.9	7.8	1.005
Service workers, except private household.....	2,846,289	2,855,948	13.4	13.5	0.997
Farm laborers and foremen.....	242,885	244,724	1.1	1.2	0.992
Laborers, except farm and mine.....	109,746	110,364	0.5	0.5	0.994
Occupation not reported.....	1,196,768	1,197,782	5.7	5.7	0.999

RATIO ESTIMATION

The statistics based on the 5-percent sample of the 1960 Census returns are estimates that have been developed through the use of a ratio estimation procedure. This procedure was carried out for each of the following 44 groups of persons in each of the sample weighting areas:²

² Estimates of characteristics from the sample for a given area are produced using the formula:

$$x' = \sum_{i=1}^{44} \frac{x_i}{Y_i} Y_i$$

where x' is the estimate of the characteristic for the area obtained through the use of the ratio estimation procedure, x_i is the count of sample persons with the characteristic for the area in one (i) of the 44 groups, y_i is the count of all sample persons for the area in the same one of the 44 groups, and Y_i is the count of persons in the complete count for the area in the same one of the 44 groups.

Group	Sex, color, and age	Relationship and tenure
	Male white:	
1	Under 5	
2	5 to 13	
3	14 to 24	Head of owner household
4	14 to 24	Head of renter household
5	14 to 24	Not head of household
6-8	25 to 44	Same groups as age group 14 to 24
9-11	45 and over	Same groups as age group 14 to 24
	Male nonwhite:	
12-22	Same groups as male white	
	Female white:	
23-33	Same groups as male white	
	Female nonwhite:	
34-44	Same groups as male white	

The sample weighting areas were defined as those areas within a State consisting of central cities of urbanized areas, the remaining portion of urbanized areas

not in central cities, urban places not in urbanized areas, or rural areas.³

For each of the 44 groups, the ratio of the complete count to the sample count of the population in the group was determined. Each specific sample person in the group was assigned an integral weight so that the sum of the weights would equal the complete count for the group. For example, if the ratio for a group was 20.1, one-tenth of the persons (selected at random) within the group were assigned a weight of 21, and the remaining nine-tenths a weight of 20. The use of such a combination of integral weights rather than a single fractional weight was adopted to avoid the complications involved in rounding in the final tables. In order to increase the reliability, where there were fewer than 275 persons in the complete count in a group, or where the resulting weight was over 80, groups were combined in a specific order to satisfy both of these two conditions.

These ratio estimates reduce the component of sampling error arising from the variation in the size of household and achieve some of the gains of stratification in the selection of the sample, with the strata being the groups for which separate ratio estimates are computed. The net effect is a reduction in the sampling error and bias of most statistics below what would be obtained by weighting the results of the 5-percent sample by a uniform factor of twenty. The reduction in sampling error will be trivial for some items and substantial for others. A byproduct of this estimation procedure, in general, is that estimates for this sample are generally consistent with the complete count with respect to the total population and for the subdivisions used as groups in the estimation procedure. A more complete discussion of the technical aspects of these ratio estimates will be presented in another report.

SAMPLING VARIABILITY

The figures from the 5-percent sample tabulations are subject to sampling variability, which can be estimated roughly from the standard errors shown in tables D and E.

These tables⁴ do not reflect the effect of response variance, processing variance, or bias arising in the collection, processing, and estimation steps. Estimates of the magnitude of some of these factors in the total error are being evaluated and will be published at a later date. The chances are about two out of three that the difference due to sampling variability between an estimate and the figure that would have been obtained from a complete count of the population

³ For the definitions of urbanized area and urban place, see 1960 Census of Population, Volume I, Characteristics of the Population, Part 1, United States Summary.

⁴ The estimates of sampling variability are based on calculations from a preliminary sample of the 1960 Census results. Further estimates are being calculated and will be available at a later date.

is less than the standard error. The chances are about 19 out of 20 that the difference is less than twice the standard error and about 99 out of 100 that it is less than 2½ times the standard error. The amount by which the estimated standard error must be multiplied to obtain other odds deemed more appropriate can be found in most statistical textbooks.

Table D shows rough standard errors of estimated numbers up to 50,000. The relative sampling errors of larger estimated numbers are somewhat smaller than for 50,000. For estimated numbers above 50,000, however, the nonsampling errors, e.g., response errors and processing errors, may have an increasingly important effect on the total error. Table E shows rough standard errors of data in the form of percentages. Linear interpolation in tables D and E will provide approximate results that are satisfactory for most purposes.

Table D.--ROUGH APPROXIMATION TO STANDARD ERROR OF ESTIMATED NUMBER

(Range of 2 chances out of 3)

Estimated number	Standard error	Estimated number	Standard error
50.....	30	5,000.....	280
100.....	40	10,000.....	390
250.....	60	15,000.....	480
500.....	90	25,000.....	620
1,000.....	120	50,000.....	880
2,500.....	200		

Table E.--ROUGH APPROXIMATION TO STANDARD ERROR OF ESTIMATED PERCENTAGE

(Range of 2 chances out of 3)

Estimated percentage	Base of percentage					
	500	1,000	2,500	10,000	25,000	100,000
2 or 98.....	3.3	2.3	1.3	0.8	0.3	0.3
5 or 95.....	5.0	4.0	2.3	1.0	0.5	0.3
10 or 90.....	7.0	5.0	3.0	1.5	0.8	0.5
25 or 75.....	10.0	6.8	3.8	1.8	1.0	0.5
50.....	11.0	7.8	4.0	2.0	1.3	0.8

For a discussion of the sampling variability of medians and means and of the method for obtaining standard errors of differences between two estimates, see 1960 Census of Population, Volume I, Characteristics of the Population, Part 1, United States Summary.

Illustration: Table 8 shows that there are 47,315 total native males 14 years old and over who are aeronautical engineers. Table D shows that a rough approximation to the standard error for an estimate of 47,315 is 852, which means that the chances are about 2 out of 3 that the results of a complete census would not differ by more than 852 from this estimated 47,315. It also follows that there is only about 1 chance in 100 that a complete census result would differ by as much as 2,130, that is, by about 2½ times the number estimated from table D.