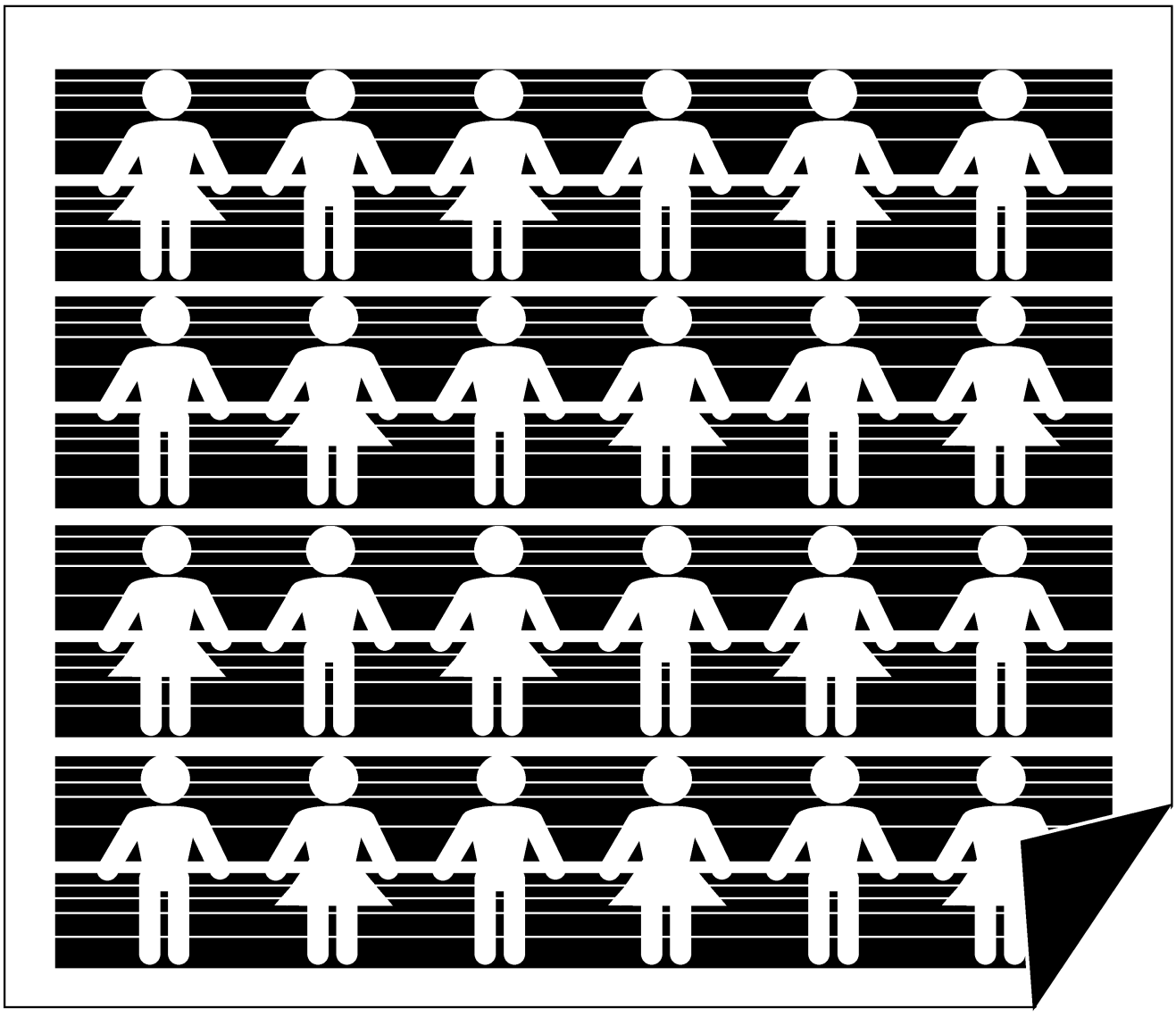
U.S. Department of Commerce
Economics and Statistics Administration
BUREAU OF THE CENSUS

1990 CP-S-1-1

1990 Census of Population

CENSUS '90

Detailed Occupation and Other Characteristics From the EEO File for the United States



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CONTENTS

HOW TO USE THIS CENSUS REPORT

CONTENTS

INTRODUCTION

Data from the 1990 census are presented in several different report series. These series are published under the following three subject titles:

1. 1990 Census of Population (1990 CP)
2. 1990 Census of Housing (1990 CH)
3. 1990 Census of Population and Housing (1990 CPH)

In addition, special compilations of census data are presented in the supplementary report series (1990 CP-S-1 or 1990 CH-S-1). This report is part of this series and provides 1990 census sample data relevant for Equal Employment Opportunity (EEO) and affirmative action uses. This report includes tabulations showing detailed occupations and educational attainment data by age for the United States. These data also will be cross tabulated by sex, Hispanic origin, and race. See appendix F for detailed information about the various report series; additional 1990 census data products such as computer tapes, microfiche, and laser disks; other related materials; and sources of assistance.

The data from the 1990 census were derived from a limited number of basic questions asked of the entire population and about every housing unit (referred to as the 100-percent questions), and from additional questions asked of a sample of the population and housing units (referred to as the sample questions). Two primary versions of questionnaires were used: a short form containing only the 100-percent questions and a long form containing both the 100-percent questions and the additional sample questions. Appendix E presents facsimiles of the questionnaire pages and the respondent instructions used to collect the data included in this report. Appendix F lists the subjects that are covered by the 100-percent and sample components of the 1990 census.

Legal provision for this census, which was conducted as of April 1, 1990, was made in the Act of Congress of August 31, 1954 (amended August 1957, December 1975, and October 1976), which is codified in Title 13, United States Code.

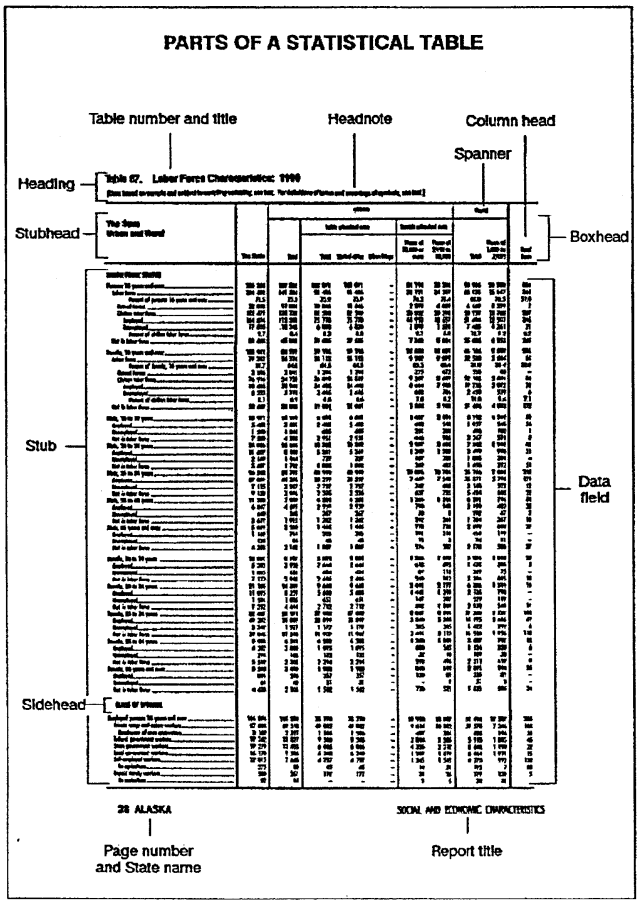
HOW TO USE THE STATISTICAL TABLES

Parts of a Statistical Table

The census data included in printed reports are arranged in tables. Each table includes four major parts: *(1) heading, (2) boxhead, (3) stub, and (4) data field.*

A typical census report table is illustrated below.

The *heading* consists of the table number, title, and headnote. The table number indicates the position of the table within the report, while the title is a brief statement indicating the classification, nature, and time reference of the data presented in the table. The headnote is enclosed in brackets and is located under the title. It contains statements that qualify, explain, or provide information pertaining to the entire table. In some tables showing racial



and Hispanic origin groups, the headnote includes information that data are presented only when certain population-size criteria (thresholds) are met. (For more information on thresholds, see the ''User Notes'' section.)

The *boxhead* is under the heading. This portion of the table, which contains the individual column heads or captions, describes the data in each vertical column. In the boxhead of many tables, a spanner appears across and above two or more column heads or across two or more lower spanners. The purpose of a spanner is to classify or qualify items below it or separate the table into identifiable blocks in terms of major aspects of the data.

The *stub* is located at the left edge of the table. It includes a listing of line or row captions or descriptions. At the top of the stub is the stubhead. The stubhead is considered to be an extension of the table title and usually shows generic geographic area designations and restrictions.

In the stub, several features are used to help the user better understand the contents of the table. Usually, a block of data lines is preceded by a sidehead. The sidehead, similar to a spanner, describes and classifies the stub entries following it. The use of indentation in a stub indicates the relationship of one data line to another. Indented data lines represent subcategories that in most instances, sum to a total. Occasionally in tables, it is desirable to show one or more single-line subcategories that do not sum to the total. The unit of measure, such as dollars, is shown when it is not clear from the general wording of the data line.

The *data field* is that part of the table that contains the data. It extends from the bottom of the boxhead to the bottom of the table and from the right of the stub to the right-hand edge of the page.

Both geographic and subject-matter terms appear in tables. It is important to read the definitions of the terms used in the tables because census terms often are defined in special ways that reflect the manner in which the questions were asked and the data were tabulated. Definitions of geographic terms are provided in appendix A. Subject-matter terms are defined in appendix B.

Symbols

The following symbols are used in the tables and explanations of subjects covered in this report:

- A dash ''-'' represents zero or a percent that rounds to less than 0.1.
- Three dots ''...'' mean not applicable.

USER NOTES

User notes include corrections, errata, and related explanatory information. This section appears directly before the statistical tables in census reports unless graphics are shown. It presents information about unique characteristics of the report and changes or corrections made too late to be reflected in the text or tables themselves.

CONTENTS OF THE APPENDIXES

Appendix A—Provides definitions of the types of geographic areas and related information used in census reports.

Appendix B—Contains definitions for the subject-matter items used in census reports, including explanations of derived measures, limitations of the data, and comparability with previous censuses. The subjects are listed alphabetically. In reports that contain both population and housing characteristics, the population characteristics are described first, followed by the explanations of the housing subjects.

Appendix C—Provides information on confidentiality of the data, allocations and substitutions, and sources of errors in the data.

Appendix D—Explains the residence rules used in counting the population and housing units, presents a brief overview of data collection operations, and describes processing procedures used to convert data from unedited questionnaires to final 1990 publications and tapes. This appendix also clarifies the procedures used to collect data for persons abroad at the time of the census, where persons on military bases or away at school were counted, how data were collected for persons in institutions, and which citizens of foreign countries were included in the U.S. data.

Appendix E—Presents a facsimile of the 1990 census questionnaire pages and the respondent instructions used to collect the data in this report.

Appendix F—Summarizes the 1990 census data products program by describing the information available in printed reports and in other sources, such as microfiche or computer tape; and provides information on where to obtain assistance.

USER NOTES

Additional information concerning this 1990 census product may be available at a later date. If you wish to receive these *User Notes*, contact:

Data User Services Division
Customer Services
Bureau of the Census
Washington, DC 20233
301-763-4100

Questions concerning the content of this report may be directed to:

Thomas S. Scopp
Housing and Household Economic Statistics Division
Bureau of the Census
Washington, DC 20233

ADDITIONAL DEFINITIONS AND EXPLANATIONS OF DATA

GENERAL

User Note 1

Age Reporting—Review of detailed 1990 information indicated that respondents tended to provide their age as of the date of completion of the questionnaire, not their age on April 1, 1990. In addition, there may have been a tendency for respondents to round up their age if they were close to having a birthday. It is likely that approximately 10 percent of persons in most age groups are actually 1 year younger. For most single years of age, the misstatements are largely offsetting. The problem is most pronounced at age 0 because persons lost to age 1 may not have been fully offset by the inclusion of babies born after April 1, 1990, and because there may have been more rounding up to age 1 to avoid reporting age as 0 years. (Age in completed months was not collected for infants under age 1.)

The reporting of age 1 year older than age on April 1, 1990, is likely to have been greater in areas where the census data were collected later in 1990. The magnitude of this problem was much less in the three previous censuses where age was typically derived from respondent data on year of birth and quarter of birth. (For more information on the design of the age question, see the discussion on comparability under ''Age'' in appendix B.)

User Note 2

The user should note that there are limitations to many of these data. Please refer to the text provided with this report for further explanations on the limitations of the data.

User Note 3

Estimated population and housing unit totals based on tabulations from only the sample questionnaires (sample tabulations) may differ from the official counts as tabulated from every census questionnaire (100-percent tabulations). Such differences result, in part, because the sample tabulations are based on information from a sample of households rather than from all households (sampling error). Differences also can occur because the interview situation (length of questionnaire, effect of the interviewer, etc.) and the processing rules differ between the 100-percent and sample tabulations. These types of differences are referred to as nonsampling errors. (For more information on nonsampling error, see appendix C.)

The 100-percent data are the official counts and should be used as the source of information on population and housing items collected on the 100-percent questionnaire, such as age, race, Hispanic origin, number of rooms, and tenure. This is especially appropriate when the primary focus is on counts of the population or housing units for small areas such as census tracts/ BNA's, block groups, and for American Indian and Alaska Native areas. For estimates of counts of persons and housing units by characteristics asked only on a sample basis (such as education, labor force status, income, and source of water), the sample estimates should be used within the context of the error associated with them.

Many users are interested in tabulations of items collected on the sample cross-classified by items collected on a 100-percent basis such as age, race, sex, Hispanic origin, and housing units by tenure. Given the way the weights were applied during sample tabulations, generally, there is exact agreement between sample estimates and 100-percent counts for total population and total housing units for most geographic areas. At the State level and higher geographic levels, sample estimates and 100-percent counts for population by age, sex, race, and Hispanic origin and for housing units by tenure, number of rooms and so on would be reasonably similar and, in some cases, the same.

At smaller geographic levels, including census tract/ BNA, there is still general agreement between 100-percent

counts and sample estimates of total population or housing units. At smaller geographic levels, however, there will be expected differences between sample estimates and 100-percent counts for population by age, sex, race, and Hispanic origin and for housing units by tenure, number of rooms and so on. In these cases, users may want to consider using derived measures (such as means and medians) or percent distributions. Whether using absolute numbers or derived measures for small population groups and for a small number of housing units in small geographic areas, users should be cautioned that the sampling error associated with these data may be large.

Even though the differences between sample estimates and 100-percent counts for these categories are generally small, the differences for the American Indian, as well as the Hispanic origin populations, are relatively larger than for other groups. The following provides some explanation for these differences.

State-level sample estimates of the number of American Indians are generally higher than the corresponding 100-percent counts. It appears the differences are primarily the result of proportionately higher reporting of ''Cherokee'' tribe on sample questionnaires. This phenomenon occurs primarily in off-reservation areas. The reasons for the greater reporting of Cherokee on sample forms are not fully known at this time. The Census Bureau will do research to provide more information on this phenomenon.

For the Hispanic origin population, sample estimates at the State level are generally lower than the corresponding 100-percent counts. The majority of difference is caused by the 100-percent and sample processing of the Hispanic question on the sample questionnaire when the respondent did not mark any response category. When processing the sample, we used written entries in race or Hispanic origin as well as responses to questions only asked on the sample, such as ancestry and place of birth. These procedures led to a lower proportion of persons being assigned as Hispanic in sample processing than were assigned during 100-percent processing. The Census Bureau will evaluate the effectiveness of the 100-percent and sample procedures.

As in previous censuses, the Census Bureau will evaluate the quality of the data and make this information available to data users. In the meanwhile, both 100-percent and sample data serve very important purposes and, therefore, should be used within the limitations of the sampling and nonsampling errors.

Table 1. Detailed Occupation of the Civilian Labor Force by Sex, Race, and Hispanic Origin: 1990

[Data based on sample and subject to sampling variability, see text. For definitions of terms and meanings of symbols, see text]

United States	All persons		Hispanic origin (of any race)		Not of Hispanic origin									
					White		Black		American Indian, Eskimo, or Aleut		Asian or Pacific Islander		Other race	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Civilian labor force 16 years and over	**66 986 201**	**56 487 249**	**5 888 180**	**4 133 543**	**52 652 638**	**43 590 483**	**6 108 277**	**6 727 324**	**426 376**	**365 896**	**1 864 689**	**1 631 072**	**46 041**	**38 931**
MANAGERIAL AND PROFESSIONAL SPECIALTY OCCUPATIONS														
Executive, administrative, and managerial occupations	**8 448 483**	**6 170 674**	**362 858**	**290 938**	**7 398 764**	**5 165 841**	**402 889**	**499 587**	**30 880**	**31 820**	**249 424**	**179 300**	**3 668**	**3 188**
Legislators	7 431	5 285	141	201	6 218	4 309	612	619	331	104	129	52	–	–
Chief executives and general administrators, public administration	13 788	5 235	667	354	11 171	3 655	1 594	1 033	202	72	154	113	–	8
Administrators and officials, public administration	275 864	230 819	12 068	10 525	230 095	178 035	25 223	35 735	2 680	2 521	5 611	3 917	187	86
Administrators, protective services	35 201	14 072	1 285	803	30 864	10 863	2 422	2 053	288	153	329	190	13	10
Financial managers	343 630	292 281	12 032	12 663	306 454	252 494	12 179	17 516	605	859	12 265	8 614	95	135
Personnel and labor relations managers	141 246	134 249	10 351	8 560	115 315	108 353	10 105	13 227	596	782	4 797	3 247	82	80
Purchasing managers	80 136	40 639	2 500	1 599	72 811	34 562	2 547	3 325	224	250	2 022	881	32	22
Managers, marketing, advertising, and public relations	415 411	193 698	11 326	7 079	384 566	174 468	10 234	7 698	876	581	8 328	3 837	81	35
Administrators, education and related fields	295 274	328 338	11 183	15 427	249 921	264 437	26 389	40 114	1 698	2 141	6 043	6 052	40	167
Managers, medicine and health	78 099	155 522	3 986	7 293	63 205	126 913	8 185	16 874	304	910	2 373	3 424	46	108
Postmasters and mail superintendents	21 614	18 232	874	351	18 472	16 617	1 788	948	198	201	237	108	45	7
Managers, food serving and lodging establishments	572 095	458 556	44 016	26 246	448 799	369 131	38 234	38 947	2 409	2 912	38 057	21 044	580	276
Managers, properties and real estate	221 625	189 841	13 240	10 195	190 789	163 607	11 674	11 667	916	1 169	4 873	3 051	133	152
Funeral directors	39 393	6 093	718	144	34 525	4 873	3 898	1 016	116	35	130	19	6	6
Managers, service organizations, n.e.c.	201 002	203 071	9 123	7 824	171 845	171 836	15 000	19 189	1 240	1 464	3 650	2 654	144	104
Managers and administrators, n.e.c., salaried	3 355 970	1 585 636	125 977	70 135	3 024 916	1 383 619	109 449	88 438	10 048	6 715	84 566	35 985	1 014	744
Managers and administrators, n.e.c., self-employed	313 599	90 788	14 025	3 895	279 769	80 169	9 429	2 346	1 466	443	8 695	3 874	215	61
Management related occupations	2 037 105	2 218 319	89 346	107 644	1 759 029	1 817 900	113 927	198 842	6 683	10 508	67 165	82 238	955	1 187
Accountants and auditors	751 840	838 338	28 867	38 170	646 664	678 739	37 457	68 589	1 500	3 435	37 092	48 912	260	493
Underwriters	21 949	45 818	570	1 984	19 576	38 911	1 203	3 770	45	97	555	1 056	–	–
Other financial officers	328 204	351 071	11 329	17 752	293 550	295 804	13 245	25 920	681	1 353	9 267	10 104	132	138
Management analysts	186 724	95 065	4 672	3 025	170 371	81 846	6 610	7 131	607	507	4 354	2 490	110	66
Personnel, training, and labor relations specialists	217 138	296 487	13 411	16 578	177 290	233 612	21 358	38 411	1 321	1 852	3 580	5 926	178	108
Purchasing agents and buyers, farm products	14 336	2 962	820	344	12 648	2 030	617	493	40	42	211	53	–	–
Buyers, wholesale and retail trade, except farm products	107 051	121 348	5 741	4 930	94 422	107 777	3 808	5 361	323	387	2 719	2 828	38	65
Purchasing agents and buyers, n.e.c.	135 474	111 493	5 796	4 676	120 229	95 506	6 461	8 994	495	622	2 433	1 630	60	65
Business and promotion agents	19 569	16 923	1 375	598	16 686	14 770	1 032	1 057	64	117	387	381	25	–
Construction inspectors	60 087	4 197	3 358	225	50 978	3 106	3 882	712	481	51	1 365	103	23	–
Inspectors and compliance officers, except construction	112 130	49 147	7 486	3 773	90 358	33 136	10 871	10 386	775	459	2 560	1 341	80	52
Management related occupations, n.e.c.	82 603	285 470	5 921	15 589	66 257	232 663	7 383	28 018	351	1 586	2 642	7 414	49	200
Professional specialty occupations	**7 706 256**	**8 941 432**	**299 731**	**357 467**	**6 619 249**	**7 452 498**	**403 176**	**815 695**	**28 730**	**42 451**	**351 345**	**269 089**	**4 025**	**4 232**
Engineers, architects, and surveyors	1 695 690	180 833	54 591	7 693	1 469 852	146 297	51 619	12 209	4 550	579	114 191	13 950	887	105
Architects	133 212	23 662	6 720	1 286	115 733	20 342	3 711	616	250	40	6 719	1 378	79	–
Engineers	1 551 961	156 283	47 539	6 394	1 344 335	125 167	47 728	11 538	4 233	535	107 323	12 544	803	105
Aerospace	131 786	11 648	5 197	437	112 350	9 170	3 648	942	405	65	10 109	1 025	77	9
Metallurgical and materials	17 021	2 209	424	75	15 149	1 816	422	243	34	5	992	70	–	–
Mining	6 063	415	184	–	5 607	373	44	24	54	18	160	–	14	–
Petroleum	22 908	1 657	654	117	21 029	1 370	425	90	69	13	731	67	–	–
Chemical	57 163	7 157	1 501	304	50 001	5 778	1 726	520	86	7	3 830	548	19	–
Nuclear	10 108	693	232	13	9 006	626	186	5	21	8	663	41	–	–
Civil	235 162	17 646	8 466	788	200 217	14 015	6 937	1 047	736	60	18 691	1 708	115	28
Agricultural	2 012	136	83	–	1 838	96	27	18	–	–	64	22	–	–
Electrical and electronic	420 471	46 552	12 999	1 920	358 739	35 622	15 055	4 283	1 086	110	32 383	4 566	209	51
Industrial	151 859	24 474	4 628	1 104	135 998	20 422	4 830	1 645	472	114	5 870	1 185	61	4
Mechanical	176 092	9 780	4 144	254	156 757	8 274	4 516	538	420	17	10 181	697	74	–
Marine and naval architects	12 776	493	199	12	11 623	422	315	52	65	–	568	7	6	–
Engineers, n.e.c.	308 540	33 423	8 828	1 370	266 021	27 183	9 597	2 131	785	118	23 081	2 608	228	13
Surveyors and mapping scientists	10 517	888	332	13	9 784	788	180	55	67	4	149	28	5	–
Mathematical and computer scientists	503 806	275 701	15 089	10 142	430 714	223 505	23 831	24 720	1 412	980	32 419	16 227	341	127
Computer systems analysts and scientists	326 831	144 459	9 069	4 214	278 755	118 647	13 668	11 249	877	432	24 231	9 817	231	100
Operations and systems researchers and analysts	144 484	107 334	5 160	5 157	123 549	85 804	8 927	11 184	464	479	6 291	4 683	93	27
Actuaries	12 416	6 316	163	93	11 304	5 480	195	214	7	–	738	529	9	–
Statisticians	15 744	16 108	604	657	13 317	12 390	888	1 862	64	60	863	1 139	8	–
Mathematical scientists, n.e.c.	4 331	1 484	93	21	3 789	1 184	153	211	–	9	296	59	–	–

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	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
MANAGERIAL AND PROFESSIONAL SPECIALTY OCCUPATIONS—Con.														
Natural scientists	300 573	108 102	8 318	3 991	262 247	87 827	10 686	6 435	1 255	397	17 955	9 328	112	124
Physicists and astronomers	24 238	3 604	541	120	21 688	3 058	470	206	74	10	1 465	210	–	–
Chemists, except biochemists	102 505	38 750	2 803	1 701	84 751	29 179	5 679	2 938	214	93	9 013	4 767	45	72
Atmospheric and space scientists	7 279	1 075	105	68	6 680	883	242	63	37	2	215	55	–	4
Geologists and geodesists	45 501	7 628	989	281	43 093	7 010	421	169	128	27	840	139	30	2
Physical scientists, n.e.c.	13 338	5 444	295	68	12 098	4 745	433	433	44	40	455	158	13	–
Agricultural and food scientists	25 537	9 305	1 128	348	22 702	7 911	849	597	57	52	793	380	8	17
Biological and life scientists	36 207	25 930	1 127	848	31 327	21 599	1 149	1 285	161	72	2 435	2 119	8	7
Forestry and conservation scientists	30 205	4 610	756	123	27 757	4 191	919	185	540	56	225	55	8	–
Medical scientists	15 763	11 756	574	434	12 151	9 251	524	559	–	45	2 514	1 445	–	22
Health diagnosing occupations	700 419	174 106	27 833	8 007	597 992	133 951	18 579	9 491	965	387	54 770	22 188	280	82
Physicians	465 468	121 247	22 978	5 803	383 033	89 318	13 707	7 167	654	214	44 881	18 671	215	74
Dentists	135 588	19 941	2 950	1 059	122 417	15 502	3 549	1 218	137	53	6 494	2 107	41	2
Veterinarians	35 755	12 989	705	262	33 358	12 003	539	296	56	25	1 085	403	12	–
Optometrists	23 463	4 052	370	185	21 938	3 372	205	192	56	11	894	292	–	–
Podiatrists	7 904	1 004	130	58	7 436	726	172	127	6	–	160	93	–	–
Health diagnosing practitioners, n.e.c.	32 241	14 873	700	640	29 810	13 030	407	491	56	84	1 256	622	12	6
Health assessment and treating occupations	322 927	2 191 413	14 799	63 077	265 402	1 834 729	25 593	190 835	1 357	8 447	15 606	93 371	170	954
Registered nurses	107 244	1 777 885	5 998	48 065	84 999	1 488 663	10 444	155 076	520	7 004	5 213	78 314	70	763
Pharmacists	114 949	66 849	2 815	2 869	101 820	54 002	3 440	4 277	267	103	6 594	5 574	13	24
Dietitians	9 629	80 594	830	3 483	5 641	58 633	2 771	14 422	73	475	310	3 539	4	42
Therapists	78 143	253 478	4 284	7 939	62 592	223 139	7 817	16 038	402	737	2 965	5 500	83	125
Respiratory therapists	26 155	39 434	1 895	1 341	19 966	32 776	2 887	4 140	136	157	1 240	996	31	24
Occupational therapists	3 957	33 938	313	874	3 139	30 119	333	1 666	8	50	164	1 213	–	16
Physical therapists	22 540	69 482	962	2 330	18 728	61 697	1 607	3 498	108	189	1 129	1 749	6	19
Speech therapists	5 736	58 977	123	1 385	5 339	54 140	185	2 612	28	100	57	716	4	24
Therapists, n.e.c.	19 755	51 647	991	2 009	15 420	44 407	2 805	4 122	122	241	375	826	42	42
Physicians' assistants	12 962	12 607	872	721	10 350	10 292	1 121	1 022	95	128	524	444	–	–
Teachers, postsecondary	467 429	318 804	14 744	12 333	393 551	269 962	18 666	19 201	1 511	1 294	38 642	15 809	315	205
Earth, environmental, and marine science teachers	889	364	26	16	813	334	–	–	–	–	50	5	–	9
Biological science teachers	4 031	2 070	100	88	3 687	1 837	44	56	10	–	190	89	–	–
Chemistry teachers	4 053	1 393	56	46	3 591	1 180	110	45	7	9	289	113	–	–
Physics teachers	3 876	556	59	2	3 349	487	129	28	–	–	339	39	–	–
Natural science teachers, n.e.c.	292	97	–	8	272	80	7	9	–	–	13	–	–	–
Psychology teachers	2 409	2 109	48	74	2 224	1 880	79	100	7	19	51	36	–	–
Economics teachers	2 650	776	75	17	2 272	709	75	10	–	–	219	40	9	–
History teachers	2 996	1 125	65	26	2 841	1 033	71	59	7	7	12	–	–	–
Political science teachers	752	253	22	23	656	209	53	–	6	7	15	14	–	–
Sociology teachers	905	552	15	4	776	496	39	39	27	2	48	11	–	–
Social science teachers, n.e.c.	548	312	18	–	435	276	65	11	14	11	16	14	–	–
Engineering teachers	6 489	1 288	227	27	5 486	1 158	259	68	12	–	505	35	–	–
Mathematical science teachers	10 639	6 718	334	142	9 021	5 835	515	352	30	57	720	332	19	–
Computer science teachers	2 679	1 705	93	113	2 193	1 427	106	73	5	11	282	78	–	3
Medical science teachers	1 976	767	39	12	1 777	674	68	38	7	–	85	43	–	–
Health specialties teachers	3 784	11 927	111	254	3 251	10 569	134	882	14	45	274	177	–	–
Business, commerce, and marketing teachers	2 288	2 775	51	75	1 926	2 411	148	198	25	22	138	69	–	–
Agriculture and forestry teachers	759	302	17	–	714	283	16	11	2	8	10	–	–	–
Art, drama, and music teachers	10 591	10 802	417	237	9 441	9 698	465	431	40	43	221	387	7	6
Physical education teachers	2 042	2 073	31	91	1 752	1 681	163	255	8	12	54	34	34	–
Education teachers	747	708	64	14	608	589	65	97	–	8	10	–	–	–
English teachers	10 243	14 033	252	516	9 393	12 541	448	620	15	56	120	284	15	16
Foreign language teachers	2 966	7 059	577	1 151	2 075	5 250	128	109	11	7	175	542	–	–
Law teachers	3 158	1 397	63	23	2 882	1 275	173	70	17	–	23	29	–	–
Social work teachers	103	205	–	22	85	159	–	24	–	–	18	–	–	–
Theology teachers	2 001	615	16	4	1 878	588	59	18	8	3	40	2	–	–
Trade and industrial teachers	668	602	34	–	589	539	29	44	7	–	9	19	–	–
Home economics teachers	94	499	–	36	75	354	19	93	–	–	–	16	–	–
Teachers, postsecondary, n.e.c.	8 779	4 676	311	218	7 606	3 972	279	261	19	35	557	187	7	3
Postsecondary teachers, subject not specified	374 022	241 046	11 623	9 094	311 883	202 438	14 920	15 200	1 213	932	34 159	13 214	224	168

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	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
MANAGERIAL AND PROFESSIONAL SPECIALTY OCCUPATIONS—Con.														
Teachers, except postsecondary	1 157 678	3 401 848	49 117	148 644	992 885	2 842 142	89 757	345 801	5 983	16 916	19 380	47 036	556	1 309
Teachers, prekindergarten and kindergarten	5 920	263 410	415	15 259	4 167	207 514	1 108	33 882	93	2 126	132	4 393	5	236
Teachers, elementary school	652 015	2 372 174	27 858	104 645	554 541	1 970 664	57 464	254 799	3 442	11 158	8 410	30 097	300	811
Teachers, secondary school	269 533	354 867	9 366	12 096	242 466	311 996	13 842	25 358	1 103	1 451	2 710	3 865	46	101
Teachers, special education	11 047	51 169	573	1 744	9 206	43 136	1 081	5 402	79	341	108	521	–	25
Teachers, n.e.c.	219 163	360 228	10 905	14 900	182 505	308 832	16 262	26 360	1 266	1 840	8 020	8 160	205	136
Counselors, educational and vocational	91 763	146 770	5 230	7 846	72 383	113 282	11 389	21 490	862	1 400	1 825	2 604	74	148
Librarians, archivists, and curators	49 787	178 669	2 227	5 113	41 520	153 974	3 721	13 253	261	846	2 046	5 416	12	67
Librarians	37 522	163 359	1 576	4 588	30 878	140 592	3 093	12 407	157	741	1 812	4 964	6	67
Archivists and curators	12 265	15 310	651	525	10 642	13 382	628	846	104	105	234	452	6	–
Social scientists and urban planners	189 041	196 197	6 293	6 388	167 670	172 717	9 883	11 958	601	789	4 551	4 272	43	73
Economists	85 335	66 902	2 433	1 777	76 409	59 302	3 522	3 519	192	166	2 769	2 138	10	–
Psychologists	79 430	112 532	2 792	3 853	70 276	99 107	5 037	7 200	311	573	988	1 736	26	63
Sociologists	1 152	1 059	102	65	828	829	65	99	31	7	126	59	–	–
Social scientists, n.e.c.	10 649	9 648	351	381	9 628	8 395	398	601	35	26	230	235	7	10
Urban planners	12 475	6 056	615	312	10 529	5 084	861	539	32	17	438	104	–	–
Social, recreation, and religious workers	552 861	580 533	27 998	33 561	443 976	428 592	63 824	103 558	3 818	5 436	12 864	8 994	381	392
Social workers	204 760	454 159	16 388	28 481	142 816	319 329	38 726	94 323	2 292	4 835	4 363	6 876	175	315
Recreation workers	14 811	35 968	1 034	1 851	9 973	29 105	3 322	4 206	154	213	277	551	51	42
Clergy	291 140	33 749	8 710	1 180	254 600	29 439	19 222	2 266	1 222	173	7 244	680	142	11
Religious workers, n.e.c.	42 150	56 657	1 866	2 049	36 587	50 719	2 554	2 763	150	215	980	887	13	24
Lawyers and judges	589 326	190 145	13 130	6 580	552 746	167 094	15 452	11 868	1 082	519	6 822	4 023	94	61
Lawyers	564 332	182 745	12 330	6 282	530 259	161 054	14 061	11 006	972	445	6 616	3 897	94	61
Judges	24 994	7 400	800	298	22 487	6 040	1 391	862	110	74	206	126	–	–
Writers, artists, entertainers, and athletes	1 084 956	998 311	60 362	44 092	928 311	878 426	60 176	44 876	5 073	4 461	30 274	25 871	760	585
Authors	53 863	52 867	1 091	955	50 202	49 161	1 402	1 724	235	189	912	816	21	22
Technical writers	37 265	37 027	524	976	34 636	32 876	1 354	2 027	102	188	649	944	–	16
Designers	265 299	331 503	15 570	16 726	225 872	293 142	10 717	9 689	951	1 259	12 013	10 559	176	128
Musicians and composers	99 409	48 611	8 743	872	79 614	44 330	8 677	2 190	417	131	1 827	1 066	131	22
Actors and directors	67 787	41 786	3 390	1 996	58 673	35 682	4 538	3 215	258	176	864	686	64	31
Painters, sculptors, craft-artists, and artist printmakers	101 067	111 695	6 853	3 507	84 913	102 028	4 934	2 526	909	753	3 352	2 785	106	96
Photographers	100 169	43 351	5 808	2 460	85 496	37 148	5 526	2 504	414	219	2 904	972	21	48
Dancers	5 097	16 816	555	1 045	3 698	13 980	557	1 031	57	172	230	561	–	27
Artists, performers, and related workers, n.e.c.	46 865	46 556	4 511	5 899	36 958	35 664	2 914	1 888	318	406	2 058	2 659	106	40
Editors and reporters	131 303	135 240	4 260	3 991	118 006	120 040	5 762	8 115	427	399	2 800	2 625	48	70
Public relations specialists	69 118	98 450	2 963	4 356	60 401	84 347	4 124	7 745	300	338	1 308	1 595	22	69
Announcers	47 752	12 517	2 669	617	40 348	10 202	3 940	1 352	266	114	498	219	31	13
Athletes	59 962	21 892	3 425	692	49 494	19 826	5 731	870	419	117	859	384	34	3
TECHNICAL, SALES, AND ADMINISTRATIVE SUPPORT OCCUPATIONS														
Technicians and related support occupations	**2 366 641**	**2 020 767**	**129 501**	**102 091**	**1 943 965**	**1 590 073**	**154 054**	**232 189**	**11 643**	**11 282**	**126 041**	**83 958**	**1 437**	**1 174**
Health technologists and technicians	270 887	1 158 210	22 809	57 699	194 404	905 466	35 148	152 513	1 827	6 942	16 491	35 037	208	553
Clinical laboratory technologists and technicians	82 202	247 690	6 696	11 390	55 684	189 023	11 341	31 108	460	1 019	7 958	15 039	63	111
Dental hygienists	1 174	71 220	108	1 887	859	66 717	124	1 354	6	142	77	1 111	–	9
Health record technologists and technicians	4 663	51 101	648	3 438	2 358	37 922	1 108	7 547	44	683	505	1 486	–	25
Radiologic technicians	36 176	94 207	3 893	3 238	26 622	82 757	3 541	6 510	229	367	1 852	1 278	39	57
Licensed practical nurses	27 569	401 904	2 535	17 245	17 972	299 284	5 643	73 493	254	3 196	1 131	8 501	34	185
Health technologists and technicians, n.e.c.	119 103	292 088	8 929	20 501	90 909	229 763	13 391	32 501	834	1 535	4 968	7 622	72	166
Technologists and technicians, except health	2 095 754	862 557	106 692	44 392	1 749 561	684 607	118 906	79 676	9 816	4 340	109 550	48 921	1 229	621
Engineering and related technologists and technicians	899 324	205 111	50 524	11 975	754 306	161 145	48 508	19 376	4 650	1 233	40 791	11 200	545	182
Electrical and electronic technicians	345 626	55 837	19 754	4 128	282 624	40 458	22 064	7 019	1 522	374	19 406	3 793	256	65
Industrial engineering technicians	11 991	3 333	510	129	10 489	2 816	672	332	74	24	235	32	11	–
Mechanical engineering technicians	27 578	2 531	1 154	199	23 938	1 958	1 075	218	77	25	1 318	120	16	11
Engineering technicians, n.e.c.	166 541	73 139	8 542	3 822	139 736	56 919	10 164	7 963	825	378	7 187	3 999	87	58
Drafting occupations	263 940	60 824	16 233	3 280	223 240	51 197	11 680	2 898	1 257	310	11 389	3 099	141	40
Surveying and mapping technicians	83 648	9 447	4 331	417	74 279	7 797	2 853	946	895	122	1 256	157	34	8

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	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
TECHNICAL, SALES, AND ADMINISTRATIVE SUPPORT OCCUPATIONS—Con.														
Science technicians	141 022	67 966	9 144	4 255	112 916	52 358	11 303	6 886	876	439	6 694	3 951	89	77
Biological technicians	32 467	24 256	2 961	1 877	25 512	19 021	2 362	2 021	230	128	1 355	1 202	47	7
Chemical technicians	57 700	18 939	3 169	697	46 528	14 620	5 674	2 572	325	126	1 977	915	27	9
Science technicians, n.e.c.	50 855	24 771	3 014	1 681	40 876	18 717	3 267	2 293	321	185	3 362	1 834	15	61
Technicians, except health, engineering, and science	1 055 408	589 480	47 024	28 162	882 339	471 104	59 095	53 414	4 290	2 668	62 065	33 770	595	362
Airplane pilots and navigators	105 929	3 897	2 273	88	100 624	3 450	1 594	292	384	19	1 021	48	33	–
Air traffic controllers	36 668	10 495	1 637	638	31 193	8 155	3 088	1 483	147	58	603	161	–	–
Broadcast equipment operators	27 241	8 278	1 626	426	22 280	6 241	2 508	1 248	174	104	629	243	24	16
Computer programmers	447 109	215 650	15 237	7 356	381 021	170 471	20 717	18 567	1 169	535	28 700	18 613	265	108
Tool programmers, numerical control	3 141	529	102	34	2 824	353	102	142	34	–	79	–	–	–
Legal assistants	62 175	195 977	4 906	11 211	49 340	165 588	5 509	13 863	410	1 125	1 961	4 084	49	106
Technicians, n.e.c.	373 145	154 654	21 243	8 409	295 057	116 846	25 577	17 819	1 972	827	29 072	10 621	224	132
Sales occupations	**7 334 643**	**7 098 126**	**419 068**	**468 358**	**6 324 402**	**5 726 154**	**353 747**	**655 224**	**25 576**	**41 438**	**207 803**	**202 096**	**4 047**	**4 856**
Supervisors and proprietors, sales occupations, salaried	1 964 716	1 050 658	105 892	53 585	1 715 855	898 017	80 602	69 136	6 430	5 063	55 049	24 300	888	557
Supervisors and proprietors, sales occupations, self-employed	285 593	150 494	15 030	6 098	242 363	128 614	6 896	3 748	1 120	921	20 095	11 018	89	95
Sales representatives, finance and business services	1 475 043	1 013 597	52 432	41 868	1 331 051	888 020	57 618	57 013	3 683	3 748	29 636	22 511	623	437
Insurance sales occupations	431 027	235 515	15 453	11 110	386 662	198 631	19 738	20 356	1 074	899	7 933	4 399	167	120
Real estate sales occupations	397 205	404 033	14 905	14 313	356 763	366 355	12 916	11 258	1 011	1 435	11 401	10 536	209	136
Securities and financial services sales occupations	214 848	82 700	5 737	4 002	197 180	70 452	6 304	5 215	305	211	5 289	2 773	33	47
Advertising and related sales occupations	84 108	89 957	3 434	3 337	74 986	79 924	4 391	5 016	233	403	1 018	1 202	46	75
Sales occupations, other business services	347 855	201 392	12 903	9 106	315 460	172 658	14 269	15 168	1 060	800	3 995	3 601	168	59
Sales representatives, commodities, except retail	1 220 788	350 644	50 142	21 031	1 117 814	303 845	30 757	15 554	2 847	1 258	18 880	8 700	348	256
Sales engineers	41 408	2 208	772	68	39 550	2 041	324	50	34	3	726	46	2	–
Sales representatives, mining, manufacturing, and wholesale	1 179 380	348 436	49 370	20 963	1 078 264	301 804	30 433	15 504	2 813	1 255	18 154	8 654	346	256
Sales workers, retail and personal services	2 363 574	4 484 707	194 411	343 531	1 894 956	3 465 438	176 934	507 447	11 389	30 087	83 796	134 716	2 088	3 488
Sales workers, motor vehicles and boats	314 915	37 364	18 312	1 796	275 531	32 583	15 747	2 025	1 204	212	3 955	741	166	7
Sales workers, apparel	82 914	361 663	8 359	28 966	60 825	288 743	8 883	31 086	263	1 487	4 483	11 119	101	262
Sales workers, shoes	44 534	73 233	5 736	5 943	30 745	56 763	6 148	8 250	147	357	1 688	1 826	70	94
Sales workers, furniture and home furnishings	102 617	84 503	6 418	3 645	89 341	75 874	4 757	3 376	296	333	1 767	1 262	38	13
Sales workers, radio, TV, hi-fi, and appliances	122 032	48 840	6 955	2 836	104 379	41 735	6 782	2 798	387	248	3 429	1 191	100	32
Sales workers, hardware and building supplies	135 593	39 594	7 799	1 475	120 783	36 323	4 905	1 076	482	133	1 584	587	40	–
Sales workers, parts	118 966	13 127	8 891	755	103 463	11 258	4 592	743	641	149	1 347	198	32	24
Sales workers, other commodities	626 278	1 231 579	46 306	78 606	515 251	1 019 766	39 069	91 044	2 740	6 109	22 487	35 140	425	914
Sales counter clerks	72 545	137 528	5 993	9 866	56 899	110 288	4 991	11 045	467	958	4 119	5 227	76	144
Cashiers	596 364	2 259 316	69 276	199 779	417 781	1 623 658	68 915	340 508	4 020	18 836	35 525	74 654	847	1 881
Street and door-to-door sales workers	77 367	153 560	5 510	7 530	63 136	129 618	6 697	13 213	418	880	1 503	2 223	103	96
News vendors	69 449	44 400	4 856	2 334	56 822	38 829	5 448	2 283	324	385	1 909	548	90	21
Sales related occupations	24 929	48 026	1 161	2 245	22 363	42 220	940	2 326	107	361	347	851	11	23
Demonstrators, promoters and models, sales	8 317	36 948	660	1 725	6 806	32 609	562	1 777	48	276	230	557	11	4
Auctioneers	7 209	1 163	71	18	7 004	1 079	94	55	22	11	18	–	–	–
Sales support occupations, n.e.c.	9 403	9 915	430	502	8 553	8 532	284	494	37	74	99	294	–	19
Administrative support occupations, including clerical	**4 482 923**	**15 222 640**	**401 751**	**982 739**	**3 285 948**	**12 125 043**	**594 910**	**1 663 394**	**24 106**	**86 112**	**172 449**	**356 083**	**3 759**	**9 269**
Supervisors, administrative support occupations	406 628	517 698	29 078	30 696	318 648	407 604	46 232	65 310	2 133	2 560	10 366	11 229	171	299
Supervisors, general office	214 678	364 947	16 798	22 441	164 808	285 303	25 982	47 437	1 260	1 995	5 756	7 542	74	229
Supervisors, computer equipment operators	21 917	12 631	1 042	635	18 503	10 054	1 734	1 556	77	87	561	299	–	–
Supervisors, financial records processing	33 380	77 006	1 520	4 043	28 348	64 031	2 223	6 533	89	287	1 178	2 080	22	32
Chief communications operators	1 720	2 653	69	171	1 489	2 075	115	346	9	–	38	61	–	–
Supervisors, distribution, scheduling, and adjusting clerks	134 933	60 461	9 649	3 406	105 500	46 141	16 178	9 438	698	191	2 833	1 247	75	38
Computer equipment operators	256 310	410 903	18 184	24 748	191 094	314 087	33 192	57 873	1 188	2 430	12 421	11 465	231	300
Computer operators	253 115	407 203	17 849	24 360	188 887	311 723	32 664	57 083	1 178	2 388	12 306	11 355	231	294
Peripheral equipment operators	3 195	3 700	335	388	2 207	2 364	528	790	10	42	115	110	–	6

Table 1. **Detailed Occupation of the Civilian Labor Force by Sex, Race, and Hispanic Origin: 1990**—Con.

[Data based on sample and subject to sampling variability, see text. For definitions of terms and meanings of symbols, see text]

United States	All persons		Hispanic origin (of any race)		Not of Hispanic origin									
					White		Black		American Indian, Eskimo, or Aleut		Asian or Pacific Islander		Other race	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
TECHNICAL, SALES, AND ADMINISTRATIVE SUPPORT OCCUPATIONS—Con.														
Secretaries, stenographers, and typists	97 485	4 663 841	8 266	265 703	69 662	3 888 331	13 998	403 270	720	25 682	4 715	78 675	124	2 180
Secretaries	52 492	3 966 179	4 206	219 115	39 218	3 375 482	6 554	288 645	400	20 636	2 064	60 516	50	1 785
Stenographers	7 563	72 317	255	2 989	6 767	62 441	359	5 228	24	326	158	1 315	–	18
Typists	37 430	625 345	3 805	43 599	23 677	450 408	7 085	109 397	296	4 720	2 493	16 844	74	377
Information clerks	230 674	1 347 972	19 916	105 723	171 103	1 067 383	26 968	133 829	1 550	8 652	10 924	31 139	213	1 246
Interviewers	49 781	156 177	3 839	11 684	36 782	117 133	7 203	22 283	700	1 663	1 194	3 311	63	103
Hotel clerks	27 005	69 385	2 366	4 384	20 155	54 367	2 535	7 182	138	592	1 788	2 773	23	87
Transportation ticket and reservation agents	79 758	190 193	7 538	13 668	59 107	153 237	8 361	14 673	305	859	4 347	7 580	100	176
Receptionists	35 037	787 056	3 794	65 014	24 323	633 492	4 874	68 716	220	4 708	1 799	14 425	27	701
Information clerks, n.e.c.	39 093	145 161	2 379	10 973	30 736	109 154	3 995	20 975	187	830	1 796	3 050	–	179
Records processing occupations, except financial	192 809	691 402	18 402	49 731	134 447	512 189	28 888	104 684	1 009	4 100	9 855	20 089	208	609
Classified-ad clerks	910	4 372	74	216	735	3 809	96	285	–	5	5	57	–	–
Correspondence clerks	2 116	10 405	111	466	1 609	8 023	347	1 702	–	47	43	167	6	–
Order clerks	64 599	164 523	6 963	11 522	46 521	123 015	8 940	25 874	322	856	1 801	3 115	52	141
Personnel clerks, except payroll and timekeeping	11 771	69 122	1 086	5 257	8 269	52 204	1 837	9 155	83	424	478	1 953	18	129
Library clerks	31 965	118 510	2 433	6 814	22 664	93 316	3 673	12 852	212	831	2 936	4 566	47	131
File clerks	51 924	216 022	5 751	18 288	32 212	149 256	10 336	39 365	274	1 399	3 311	7 544	40	170
Records clerks	29 524	108 448	1 984	7 168	22 437	82 566	3 659	15 451	118	538	1 281	2 687	45	38
Financial records processing occupations	264 608	2 136 921	21 900	108 653	201 589	1 833 438	24 772	130 379	1 094	10 365	14 965	53 033	288	1 053
Bookkeepers, accounting, and auditing clerks	200 750	1 721 202	16 669	82 432	153 146	1 497 872	18 397	89 431	733	8 225	11 605	42 452	200	790
Payroll and timekeeping clerks	20 343	159 137	1 524	8 948	15 211	131 392	2 352	14 625	181	752	1 054	3 346	21	74
Billing clerks	15 783	152 693	1 480	9 415	11 511	125 022	1 805	13 697	73	817	882	3 619	32	123
Cost and rate clerks	20 177	58 090	1 442	4 458	16 471	44 780	1 399	6 640	90	326	760	1 875	15	11
Billing, posting, and calculating machine operators	7 555	45 799	785	3 400	5 250	34 372	819	5 986	17	245	664	1 741	20	55
Duplicating, mail and other office machine operators	28 348	40 440	3 332	3 177	18 097	28 572	4 772	7 248	126	278	1 958	1 156	63	9
Duplicating machine operators	13 018	14 848	1 646	1 087	8 039	10 676	2 306	2 411	44	126	959	543	24	5
Mail preparing and paper handling machine operators	2 608	3 588	257	395	1 784	2 485	358	624	46	16	163	68	–	–
Office machine operators, n.e.c.	12 722	22 004	1 429	1 695	8 274	15 411	2 108	4 213	36	136	836	545	39	4
Communications equipment operators	33 799	210 316	3 264	13 706	23 467	152 137	6 148	40 565	203	1 193	700	2 524	17	191
Telephone operators	29 670	203 587	2 883	13 156	20 946	147 199	5 039	39 486	196	1 177	589	2 385	17	184
Communications equipment operators, n.e.c.	4 129	6 729	381	550	2 521	4 938	1 109	1 079	7	16	111	139	–	7
Mail and message distributing occupations	646 568	386 709	53 906	24 070	440 528	254 956	122 144	90 868	2 856	2 300	26 583	14 180	551	335
Postal clerks, except mail carriers	192 895	157 670	14 744	9 318	121 410	86 243	45 430	51 377	664	1 088	10 524	9 463	123	181
Mail carriers, postal service	240 290	87 951	16 706	4 725	181 698	68 842	32 480	12 547	1 092	410	8 189	1 375	125	52
Mail clerks, except postal service	105 987	105 722	11 381	7 898	64 205	71 900	25 127	22 685	504	588	4 605	2 568	165	83
Messengers	107 396	35 366	11 075	2 129	73 215	27 971	19 107	4 259	596	214	3 265	774	138	19
Material recording, scheduling, and distributing clerks	1 332 268	888 638	143 735	67 060	972 972	691 590	172 526	103 671	7 582	6 017	34 387	19 801	1 066	499
Dispatchers	107 747	97 200	6 994	5 000	90 419	78 670	8 501	11 645	556	849	1 242	981	35	55
Production coordinators	133 509	119 150	8 932	7 628	111 165	96 974	9 336	10 567	562	748	3 454	3 179	60	54
Traffic, shipping, and receiving clerks	460 680	187 922	62 977	17 862	316 151	143 973	67 423	20 926	2 434	1 250	11 270	3 797	425	114
Stock and inventory clerks	451 459	260 313	48 722	20 287	319 587	197 087	65 334	33 863	2 918	1 921	14 461	6 974	437	181
Meter readers	42 565	6 971	3 762	337	31 397	5 684	6 694	841	384	48	318	61	10	–
Weighers, measurers, checkers, and samplers	43 126	37 620	4 332	3 653	31 576	27 248	5 948	5 361	280	383	966	972	24	3
Expediters	82 324	156 465	7 062	10 128	64 267	125 650	8 330	16 754	398	684	2 215	3 179	52	70
Material recording, scheduling, and distributing clerks, n.e.c.	10 858	22 997	954	2 165	8 410	16 304	960	3 714	50	134	461	658	23	22
Adjusters and investigators	313 023	826 064	20 146	52 346	253 006	643 107	29 599	107 617	1 511	3 719	8 610	18 605	151	670
Insurance adjusters, examiners, and investigators	101 118	243 521	4 388	11 124	86 104	191 533	7 844	34 468	362	858	2 361	5 332	59	206
Investigators and adjusters, except insurance	151 592	430 238	10 016	28 842	121 749	336 500	14 398	52 127	768	1 827	4 596	10 608	65	334
Eligibility clerks, social welfare	5 150	44 356	965	3 939	2 868	32 190	705	6 914	31	364	581	896	–	53
Bill and account collectors	55 163	107 949	4 777	8 441	42 285	82 884	6 652	14 108	350	670	1 072	1 769	27	77

Table 1. Detailed Occupation of the Civilian Labor Force by Sex, Race, and Hispanic Origin: 1990—Con.

[Data based on sample and subject to sampling variability, see text. For definitions of terms and meanings of symbols, see text]

United States	All persons		Hispanic origin (of any race)		Not of Hispanic origin									
					White		Black		American Indian, Eskimo, or Aleut		Asian or Pacific Islander		Other race	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
TECHNICAL, SALES, AND ADMINISTRATIVE SUPPORT OCCUPATIONS—Con.														
Miscellaneous administrative support occupations	680 403	3 101 736	61 622	237 126	491 335	2 331 649	85 671	418 080	4 134	18 816	36 965	94 187	676	1 878
General office clerks	264 538	1 226 578	27 030	95 836	185 545	918 998	36 355	166 327	1 459	7 546	13 893	36 991	256	880
Bank tellers	51 882	457 141	6 581	29 649	35 369	369 860	5 639	40 495	183	1 542	4 069	15 343	41	252
Proofreaders	7 304	23 022	302	728	6 220	19 710	546	1 937	20	66	216	552	–	29
Data-entry keyers	83 043	556 222	8 486	43 085	54 332	387 764	13 522	100 446	585	3 242	6 020	21 352	98	333
Statistical clerks	48 733	99 845	2 966	5 421	37 771	76 991	5 457	14 346	224	614	2 236	2 422	79	51
Teachers' aides	29 662	245 881	3 880	31 964	17 781	172 417	3 907	33 787	445	2 935	3 599	4 619	50	159
Administrative support occupations, n.e.c.	195 241	493 047	12 377	30 443	154 317	385 909	20 245	60 742	1 218	2 871	6 932	12 908	152	174
SERVICE OCCUPATIONS														
Private household occupations	**29 077**	**534 841**	**6 219**	**124 499**	**14 870**	**255 625**	**6 184**	**138 071**	**309**	**3 540**	**1 407**	**12 394**	**88**	**712**
Launderers and ironers	291	1 396	37	194	215	867	5	275	–	10	34	50	–	–
Cooks, private household	1 008	8 204	95	1 084	523	4 101	188	2 656	6	30	196	301	–	32
Housekeepers and butlers	2 087	32 329	465	10 800	800	9 853	683	10 132	–	209	128	1 263	11	72
Child care workers, private household	4 428	159 824	585	22 960	3 206	115 450	453	16 595	86	1 295	78	3 396	20	128
Private household cleaners and servants	21 263	333 088	5 037	89 461	10 126	125 354	4 855	108 413	217	1 996	971	7 384	57	480
Protective service occupations	**1 754 500**	**330 275**	**122 436**	**21 915**	**1 330 522**	**223 737**	**259 384**	**77 367**	**15 866**	**3 014**	**24 922**	**3 879**	**1 370**	**363**
Supervisors, protective service occupations	121 044	14 162	6 026	824	99 832	9 728	13 225	3 384	690	97	1 236	115	35	14
Supervisors, firefighting and fire prevention occupations	28 466	832	926	38	25 946	697	1 188	97	148	–	258	–	–	–
Supervisors, police and detectives	54 159	7 063	2 471	328	45 669	4 756	5 320	1 856	258	49	435	60	6	14
Supervisors, guards	38 419	6 267	2 629	458	28 217	4 275	6 717	1 431	284	48	543	55	29	–
Firefighting and fire prevention occupations	233 170	8 316	11 351	418	196 263	6 344	20 320	1 201	3 063	315	2 063	35	110	3
Fire inspection and fire prevention occupations	14 407	2 318	623	145	12 104	1 691	1 327	437	208	31	145	11	–	3
Firefighting occupations	218 763	5 998	10 728	273	184 159	4 653	18 993	764	2 855	284	1 918	24	110	–
Police and detectives	702 475	119 808	44 625	7 851	558 783	78 703	86 389	30 978	5 508	1 118	6 672	1 048	498	110
Police and detectives, public service	457 078	62 106	29 165	4 482	374 308	42 260	45 253	14 074	3 457	573	4 568	671	327	46
Sheriffs, bailiffs, and other law enforcement officers	95 561	22 871	5 498	1 425	77 970	16 816	10 463	4 155	740	204	856	249	34	22
Correctional institution officers	149 836	34 831	9 962	1 944	106 505	19 627	30 673	12 749	1 311	341	1 248	128	137	42
Guards	697 811	187 989	60 434	12 822	475 644	128 962	139 450	41 804	6 605	1 484	14 951	2 681	727	236
Crossing guards	12 818	32 495	822	2 124	9 524	24 068	2 309	6 039	78	140	75	95	10	29
Guards and police, except public service	655 141	130 370	57 619	9 734	440 912	82 110	135 332	34 733	6 285	1 262	14 294	2 347	699	184
Protective service occupations, n.e.c.	29 852	25 124	1 993	964	25 208	22 784	1 809	1 032	242	82	582	239	18	23
Service occupations, except protective and household	**5 135 444**	**8 783 420**	**803 674**	**802 822**	**3 171 383**	**6 185 729**	**885 789**	**1 460 372**	**43 766**	**80 889**	**224 700**	**245 824**	**6 132**	**7 784**
Food preparation and service occupations	2 369 276	3 369 682	421 287	250 850	1 432 140	2 594 481	346 387	381 696	17 271	30 313	149 191	109 746	3 000	2 596
Supervisors, food preparation and service occupations	117 402	159 018	13 862	9 586	80 141	125 945	14 677	16 894	605	1 185	7 904	5 309	213	99
Bartenders	166 630	164 080	13 781	5 395	140 017	150 210	7 571	4 002	961	1 929	4 170	2 441	130	103
Waiters and waitresses	290 768	1 197 485	48 693	69 295	189 781	1 025 935	25 530	52 830	1 349	9 013	25 102	39 641	313	771
Cooks	1 085 895	987 365	191 390	87 253	615 444	665 954	189 799	190 622	8 706	11 234	79 152	31 587	1 404	715
Food counter, fountain and related occupations	65 491	170 989	7 621	12 840	46 220	134 235	8 043	17 670	427	1 425	3 122	4 599	58	220
Kitchen workers, food preparation	52 183	159 317	8 403	11 591	35 040	122 155	6 309	20 595	273	1 021	2 062	3 803	96	152
Waiters'/waitresses' assistants	217 437	161 121	54 109	15 155	123 673	118 142	28 098	20 723	1 352	1 045	9 999	5 860	206	196
Miscellaneous food preparation occupations	373 470	370 307	83 428	39 735	201 824	251 905	66 360	58 360	3 598	3 461	17 680	16 506	580	340
Health service occupations	287 943	1 974 015	27 244	148 274	169 771	1 247 415	76 495	512 027	3 053	19 460	11 038	44 894	342	1 945
Dental assistants	5 166	174 121	940	14 382	2 950	145 547	678	8 650	21	1 133	577	4 282	–	127
Health aides, except nursing	45 064	177 913	3 775	10 761	26 730	124 471	11 818	36 973	489	1 147	2 215	4 413	37	148
Nursing aides, orderlies, and attendants	237 713	1 621 981	22 529	123 131	140 091	977 397	63 999	466 404	2 543	17 180	8 246	36 199	305	1 670
Cleaning and building service occupations, except household	2 013 354	1 410 347	305 247	234 789	1 243 260	769 461	395 968	348 336	19 802	15 815	46 779	40 168	2 298	1 778
Supervisors, cleaning and building service workers	117 971	49 504	13 241	6 719	83 724	29 297	18 351	11 430	950	432	1 557	1 541	148	85
Maids and housemen	137 337	575 452	30 158	103 022	56 514	282 901	41 849	159 793	1 254	7 379	7 297	21 542	265	815
Janitors and cleaners	1 700 984	780 561	255 573	124 696	1 059 736	453 749	329 540	176 251	17 194	7 946	37 082	17 041	1 859	878
Elevator operators	9 684	1 727	2 216	139	5 065	837	2 162	712	30	30	204	9	7	–
Pest control occupations	47 378	3 103	4 059	213	38 221	2 677	4 066	150	374	28	639	35	19	–
Personal service occupations	464 871	2 029 376	49 896	168 909	326 212	1 574 372	66 939	218 313	3 640	15 301	17 692	51 016	492	1 465
Supervisors, personal service occupations	19 313	43 619	1 653	3 122	14 465	34 045	2 291	5 198	153	364	741	837	10	53
Barbers	66 677	17 949	6 069	1 452	50 091	13 885	9 159	1 680	468	116	875	816	15	–
Hairdressers and cosmetologists	76 143	657 433	9 090	50 613	56 139	529 006	7 713	52 976	362	3 700	2 749	20 712	90	426

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					White		Black		American Indian, Eskimo, or Aleut		Asian or Pacific Islander		Other race	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
SERVICE OCCUPATIONS—Con.														
Attendants, amusement and recreation facilities	86 248	50 905	7 128	3 826	66 004	36 841	8 094	5 307	982	1 086	4 011	3 792	29	53
Guides	19 281	22 005	1 495	977	13 452	16 609	2 562	2 913	164	123	1 597	1 365	11	18
Ushers	19 853	9 758	1 880	781	14 899	7 237	2 382	1 361	70	76	604	271	18	32
Public transportation attendants	21 801	84 148	2 623	3 541	13 431	68 499	4 433	9 317	71	206	1 193	2 574	50	11
Baggage porters and bellhops	34 558	4 205	4 287	622	19 158	2 282	8 884	988	141	15	2 036	290	52	8
Welfare service aides	7 871	40 319	808	4 568	4 774	24 407	1 825	9 908	214	657	250	756	–	23
Family child care providers	6 234	428 409	508	37 020	4 772	351 312	728	29 940	82	2 937	116	6 870	28	330
Early childhood teacher's assistants	14 059	324 869	1 550	25 733	9 090	244 067	2 921	47 585	127	2 723	360	4 552	11	209
Child care workers, n.e.c.	22 932	188 419	2 318	19 285	14 049	133 125	5 723	30 786	322	1 940	487	3 165	33	118
Personal service occupations, n.e.c.	69 901	157 338	10 487	17 369	45 888	113 057	10 224	20 354	484	1 358	2 673	5 016	145	184
FARMING, FORESTRY, AND FISHING OCCUPATIONS														
Farming, forestry, and fishing occupations	**2 597 829**	**507 566**	**443 270**	**85 007**	**1 924 614**	**380 584**	**170 994**	**27 812**	**23 945**	**4 384**	**33 464**	**9 388**	**1 542**	**391**
Farm operators and managers	933 808	153 557	33 238	4 862	874 322	143 630	16 196	2 558	3 655	806	6 218	1 671	179	30
Farmers, except horticultural	680 512	114 675	11 466	1 814	656 812	110 429	6 660	962	2 378	569	3 105	896	91	5
Horticultural specialty farmers	31 261	3 471	3 289	112	25 398	3 139	1 692	71	134	27	733	122	15	–
Managers, farms, except horticultural	208 114	30 770	16 674	2 609	181 006	26 102	7 179	1 337	1 097	178	2 085	524	73	20
Managers, horticultural specialty farms	13 921	4 641	1 809	327	11 106	3 960	665	188	46	32	295	129	–	5
Other agricultural and related occupations	1 466 828	342 587	399 625	79 292	890 052	228 127	137 216	24 146	14 321	3 181	24 367	7 499	1 247	342
Farm occupations, except managerial	666 460	175 613	227 217	49 583	374 968	106 636	49 127	13 019	6 533	1 672	7 947	4 449	668	254
Supervisors, farm workers	37 273	6 162	11 977	1 337	22 836	3 933	1 473	651	236	57	717	180	34	4
Farm workers	609 123	150 546	207 238	45 658	341 936	88 723	46 484	11 030	6 169	1 430	6 683	3 465	613	240
Marine life cultivation workers	879	354	59	42	695	271	51	41	43	–	31	–	–	–
Nursery workers	19 185	18 551	7 943	2 546	9 501	13 709	1 119	1 297	85	185	516	804	21	10
Related agricultural occupations	800 368	166 974	172 408	29 709	515 084	121 491	88 089	11 127	7 788	1 509	16 420	3 050	579	88
Supervisors, related agricultural occupations	60 452	5 155	7 516	457	49 003	4 265	2 704	318	300	83	845	32	84	–
Groundskeepers and gardeners, except farm	680 843	54 713	151 017	6 403	427 982	41 515	79 988	4 880	6 832	650	14 577	1 234	447	31
Animal caretakers, except farm	40 059	67 146	4 441	2 177	31 400	62 883	3 256	1 206	455	390	491	474	16	16
Graders and sorters, agricultural products	16 695	37 964	9 094	20 219	5 018	11 789	1 924	4 301	181	369	446	1 245	32	41
Inspectors, agricultural products	2 319	1 996	340	453	1 681	1 039	217	422	20	17	61	65	–	–
Forestry and logging occupations	140 463	7 560	7 383	576	113 503	5 737	15 414	900	3 716	248	377	99	70	–
Supervisors, forestry and logging workers	11 529	539	380	21	10 162	500	726	18	233	–	19	–	9	–
Forestry workers, except logging	16 858	3 573	2 661	426	12 359	2 689	1 104	306	641	120	85	32	8	–
Timber cutting and logging occupations	112 076	3 448	4 342	129	90 982	2 548	13 584	576	2 842	128	273	67	53	–
Fishers, hunters, and trappers	56 730	3 862	3 024	277	46 737	3 090	2 168	208	2 253	149	2 502	119	46	19
Captains and other officers, fishing vessels	6 149	192	320	21	5 452	150	78	17	154	4	136	–	9	–
Fishers	48 813	3 339	2 604	229	39 831	2 672	2 002	166	2 034	141	2 305	112	37	19
Hunters and trappers	1 768	331	100	27	1 454	268	88	25	65	4	61	7	–	–
PRECISION PRODUCTION, CRAFT, AND REPAIR OCCUPATIONS														
Precision production, craft, and repair occupations	**12 701 437**	**1 329 863**	**1 148 544**	**142 710**	**10 370 551**	**948 709**	**867 525**	**158 390**	**97 173**	**11 373**	**209 785**	**67 455**	**7 859**	**1 226**
Mechanics and repairers	4 085 908	185 258	323 481	13 002	3 385 468	139 201	277 371	26 837	27 048	1 379	70 082	4 573	2 458	266
Supervisors, mechanics and repairers	247 901	22 681	11 577	1 065	220 556	17 395	11 557	3 689	1 058	143	3 039	377	114	12
Mechanics and repairers, except supervisors	3 838 007	162 577	311 904	11 937	3 164 912	121 806	265 814	23 148	25 990	1 236	67 043	4 196	2 344	254
Vehicle and mobile equipment mechanics and repairers	1 829 964	35 714	169 683	2 860	1 487 194	26 839	126 462	4 990	13 015	310	32 396	675	1 214	40
Automobile mechanics, except apprentices	936 977	17 646	92 946	1 461	747 463	13 404	70 620	2 312	6 590	162	18 644	277	714	30
Automobile mechanic apprentices	1 531	60	125	3	1 207	57	156	–	14	–	29	–	–	–
Bus, truck, and stationary engine mechanics	263 806	2 336	18 918	194	221 670	1 581	18 559	504	1 957	27	2 595	30	107	–
Aircraft engine mechanics	129 256	5 416	11 435	490	103 155	3 913	9 661	799	911	45	4 012	169	82	–
Small engine repairers	60 914	1 108	3 686	77	53 315	812	2 726	190	561	7	592	22	34	–
Automobile body and related repairers	223 991	4 719	28 132	304	177 785	3 862	12 849	482	1 333	29	3 661	32	231	10
Aircraft mechanics, except engine	29 437	2 377	2 596	133	22 858	1 691	2 515	421	191	37	1 263	95	14	–
Heavy equipment mechanics	155 764	1 731	10 071	135	134 481	1 315	8 422	249	1 345	3	1 413	29	32	–
Farm equipment mechanics	28 288	321	1 774	63	25 260	204	954	33	113	–	187	21	–	–
Industrial machinery repairers	318 984	13 795	21 235	1 124	269 412	10 407	22 333	1 807	1 825	93	4 021	318	158	46
Machinery maintenance occupations	24 140	1 133	1 522	115	19 356	800	2 624	181	419	2	208	27	11	8
Electrical and electronic equipment repairers	573 064	62 461	36 835	4 298	478 230	45 971	41 405	9 738	3 251	487	13 016	1 882	327	85
Electronic repairers, communications and industrial equipment	164 678	14 551	12 306	1 062	133 637	11 039	12 877	1 777	947	132	4 782	525	129	16
Data processing equipment repairers	79 736	11 921	4 378	782	66 433	9 149	5 759	1 381	340	69	2 795	540	31	–
Household appliance and power tool repairers	50 935	2 190	3 455	248	43 639	1 637	2 534	236	311	11	981	58	15	–

Table 1. **Detailed Occupation of the Civilian Labor Force by Sex, Race, and Hispanic Origin: 1990**—Con.

[Data based on sample and subject to sampling variability, see text. For definitions of terms and meanings of symbols, see text]

United States	All persons		Hispanic origin (of any race)		Not of Hispanic origin									
					White		Black		American Indian, Eskimo, or Aleut		Asian or Pacific Islander		Other race	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
PRECISION PRODUCTION, CRAFT, AND REPAIR OCCUPATIONS—Con.														
Telephone line installers and repairers	47 211	3 422	2 676	355	40 852	2 387	2 855	512	327	33	467	114	34	21
Telephone installers and repairers	164 418	26 509	9 029	1 522	139 554	19 118	12 494	5 177	856	141	2 430	503	55	48
Miscellaneous electrical and electronic equipment repairers	66 086	3 868	4 991	329	54 115	2 641	4 886	655	470	101	1 561	142	63	–
Heating, air conditioning, and refrigeration mechanics	190 412	2 571	13 102	130	164 475	1 977	9 184	410	1 201	18	2 357	25	93	11
Miscellaneous mechanics and repairers	901 443	46 903	69 527	3 410	746 245	35 812	63 806	6 022	6 279	326	15 045	1 269	541	64
Camera, watch, and musical instrument repairers	27 311	3 786	1 730	291	23 582	2 917	799	344	61	22	1 121	212	18	–
Locksmiths and safe repairers	25 360	1 777	1 541	86	22 014	1 547	1 251	85	173	27	361	27	20	5
Office machine repairers	39 540	2 348	2 565	169	32 749	1 829	2 979	254	200	–	1 033	96	14	–
Mechanical controls and valve repairers	19 393	1 015	1 565	6	15 211	734	2 287	239	96	20	204	16	30	–
Elevator installers and repairers	25 207	427	1 434	53	22 119	302	1 184	72	140	–	292	–	38	–
Millwrights	92 874	3 266	2 721	214	84 512	2 549	4 647	408	519	52	464	43	11	–
Specified mechanics and repairers, n.e.c.	199 247	14 702	14 794	1 124	166 286	11 159	13 107	1 938	1 421	87	3 533	388	106	6
Not specified mechanics and repairers	472 511	19 582	43 177	1 467	379 772	14 775	37 552	2 682	3 669	118	8 037	487	304	53
Construction trades	5 170 054	147 946	502 639	11 534	4 210 711	117 870	350 888	14 278	47 798	1 843	54 807	2 278	3 211	143
Supervisors, construction occupations	815 303	22 697	52 707	1 307	711 202	18 634	37 932	2 209	5 254	206	7 857	324	351	17
Supervisors, brickmasons, stonemasons, and tile setters	12 880	88	957	9	10 542	62	1 163	9	81	–	137	8	–	–
Supervisors, carpenters and related workers	45 096	529	3 155	50	40 100	436	948	27	352	16	514	–	27	–
Supervisors, electricians and power transmission installers	71 958	1 598	3 226	106	65 083	1 343	2 497	114	318	11	782	24	52	–
Supervisors, painters, paperhangers, and plasterers	30 759	1 610	2 678	68	25 480	1 388	1 853	117	324	11	409	26	15	–
Supervisors, plumbers, pipefitters, and steamfitters	20 103	415	938	17	18 108	363	741	19	120	16	196	–	–	–
Supervisors, construction n.e.c.	634 507	18 457	41 753	1 057	551 889	15 042	30 730	1 923	4 059	152	5 819	266	257	17
Construction trades, except supervisors	4 354 751	125 249	449 932	10 227	3 499 509	99 236	312 956	12 069	42 544	1 637	46 950	1 954	2 860	126
Brickmasons and stonemasons, except apprentices	194 480	2 459	20 325	229	142 932	1 582	28 187	621	1 455	24	1 465	3	116	–
Brickmason and stonemason apprentices	685	42	55	–	535	37	87	5	–	–	8	–	–	–
Tile setters, hard and soft	54 356	1 286	9 009	209	41 053	983	3 008	61	346	–	894	33	46	–
Carpet installers	109 426	2 410	13 312	240	88 434	1 926	6 053	173	821	34	709	29	97	8
Carpenters, except apprentices	1 337 544	23 163	119 732	1 799	1 124 393	18 744	65 242	1 923	13 751	342	13 618	299	808	56
Carpenter apprentices	4 600	253	436	4	3 725	150	224	77	57	22	151	–	7	–
Drywall installers	146 761	3 793	22 763	449	111 386	2 975	8 923	283	2 587	86	1 007	–	95	–
Electricians, except apprentices	619 358	15 659	37 073	1 193	533 493	11 705	35 050	2 102	3 970	200	9 437	450	335	9
Electrician apprentices	14 888	684	881	22	12 853	580	891	75	124	7	139	–	–	–
Electrical power installers and repairers	118 543	1 689	5 161	66	102 000	1 395	9 672	189	1 108	11	575	28	27	–
Painters, construction and maintenance	515 697	43 329	83 618	3 451	372 083	35 944	46 459	2 671	4 425	484	8 479	748	633	31
Paperhangers	12 811	4 399	918	73	11 318	4 226	302	49	87	29	170	22	16	–
Plasterers	42 260	849	11 650	170	24 627	521	5 356	142	281	16	305	–	41	–
Plumbers, pipefitters, and steamfitters, except apprentices	481 639	7 219	37 868	484	401 484	5 732	33 134	846	4 179	58	4 694	92	280	7
Plumber, pipefitter, and steamfitter apprentices	6 426	153	415	–	5 546	134	306	19	52	–	107	–	–	–
Concrete and terrazzo finishers	74 944	1 001	14 033	225	44 668	448	14 971	314	876	14	363	–	33	–
Glaziers	43 142	2 453	3 820	163	36 884	1 893	1 743	299	237	35	443	63	15	–
Insulation workers	71 460	2 952	11 212	428	51 326	1 826	7 236	623	859	59	801	16	26	–
Paving, surfacing, and tamping equipment operators	12 777	333	1 472	15	9 360	247	1 744	71	132	–	59	–	10	–
Roofers	194 098	3 085	28 440	326	142 984	2 224	18 328	437	2 833	90	1 359	8	154	–
Sheetmetal duct installers	29 541	421	1 701	59	26 039	326	1 455	26	193	3	149	7	4	–
Structural metal workers	73 885	1 453	5 068	121	62 829	1 092	4 040	198	1 284	21	642	21	22	–
Drillers, earth	19 983	508	1 612	69	17 095	364	893	69	309	6	74	–	–	–
Construction trades, n.e.c.	175 447	5 656	19 358	432	132 462	4 182	19 652	796	2 578	96	1 302	135	95	15
Extractive occupations	187 451	5 411	14 935	440	161 685	4 298	7 864	537	2 265	89	620	39	82	8
Supervisors, extractive occupations	47 578	1 741	2 505	79	43 143	1 484	1 239	150	403	7	279	21	9	–
Drillers, oil well	36 539	533	3 916	4	30 220	503	1 669	8	665	18	57	–	12	–
Explosives workers	8 872	505	608	91	7 373	313	700	74	165	19	20	–	6	8
Mining machine operators	60 613	1 705	3 708	138	53 461	1 340	2 627	178	581	31	205	18	31	–
Mining occupations, n.e.c.	33 849	927	4 198	128	27 488	658	1 629	127	451	14	59	–	24	–
Precision production occupations	3 258 024	991 248	307 489	117 734	2 612 687	687 340	231 402	116 738	20 062	8 062	84 276	60 565	2 108	809
Supervisors, production occupations	1 069 504	230 133	81 527	25 386	888 132	172 129	77 393	24 829	5 145	1 483	16 818	6 123	489	183
Precision metal working occupations	973 211	79 163	72 101	9 255	818 433	55 458	53 191	9 581	6 727	1 708	22 158	3 047	601	114
Tool and die makers, except apprentices	139 502	3 312	5 186	283	129 264	2 533	3 377	322	448	12	1 207	162	20	–
Tool and die maker apprentices	2 267	109	67	–	2 130	91	40	9	20	9	10	–	–	–
Precision assemblers, metal	31 912	9 047	3 780	1 419	23 167	4 998	3 621	1 915	222	96	1 072	606	50	13
Machinists, except apprentices	543 172	25 909	39 106	2 918	454 867	18 035	32 245	4 168	3 093	239	13 507	527	354	22

Table 1. Detailed Occupation of the Civilian Labor Force by Sex, Race, and Hispanic Origin: 1990—Con.

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					White		Black		American Indian, Eskimo, or Aleut		Asian or Pacific Islander		Other race	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
PRECISION PRODUCTION, CRAFT, AND REPAIR OCCUPATIONS—Con.														
Machinist apprentices	1 436	107	101	12	1 224	75	57	18	11	2	39	–	4	–
Boilermakers	23 706	587	1 415	23	19 843	445	2 089	106	223	13	136	–	–	–
Precision grinders, filers, and tool sharpeners	21 378	1 691	1 039	52	19 165	1 412	799	201	165	–	191	26	19	–
Patternmakers and model makers, metal	5 177	265	191	33	4 782	192	169	30	12	–	23	10	–	–
Lay-out workers	14 834	2 153	629	116	11 694	1 577	2 044	343	149	31	312	83	6	3
Precious stones and metals workers (Jewelers)	40 995	20 835	8 746	3 340	26 865	14 137	1 226	833	1 499	1 194	2 579	1 257	80	74
Engravers, metal	10 659	6 499	899	405	9 082	5 580	422	347	41	25	215	142	–	–
Sheet metal workers, except apprentices	135 431	8 060	10 702	654	114 112	5 880	6 917	1 216	812	87	2 820	221	68	2
Sheet metal worker apprentices	865	86	100	–	682	60	58	26	11	–	14	–	–	–
Miscellaneous precision metal workers	1 877	503	140	–	1 556	443	127	47	21	–	33	13	–	–
Precision woodworking occupations	97 016	13 643	10 627	634	79 681	11 042	4 904	1 771	615	91	1 120	84	69	21
Patternmakers and model makers, wood	2 976	323	159	–	2 694	267	82	48	10	–	31	8	–	–
Cabinet makers and bench carpenters	67 251	4 620	6 531	274	56 826	3 958	2 739	354	412	9	701	25	42	–
Furniture and wood finishers	25 035	8 396	3 796	343	18 727	6 586	1 972	1 343	149	52	364	51	27	21
Miscellaneous precision woodworkers	1 754	304	141	17	1 434	231	111	26	44	30	24	–	–	–
Precision textile, apparel, and furnishings machine workers	119 539	152 981	25 999	21 580	75 990	100 509	10 794	14 333	635	827	6 010	15 685	111	47
Dressmakers	6 421	90 837	1 883	13 856	3 164	57 918	544	8 336	51	565	771	10 141	8	21
Tailors	29 538	27 269	7 903	4 209	15 675	16 208	3 169	2 862	52	57	2 688	3 928	51	5
Upholsterers	57 167	16 771	11 805	1 200	39 754	13 890	4 483	1 409	349	112	743	155	33	5
Shoe repairers	20 178	7 850	3 601	805	12 712	5 901	2 103	685	129	50	1 618	404	15	5
Miscellaneous precision apparel and fabric workers	6 235	10 254	807	1 510	4 685	6 592	495	1 041	54	43	190	1 057	4	11
Precision workers, assorted materials	265 293	303 078	34 376	39 155	190 347	199 764	20 531	34 034	1 527	2 052	18 277	27 822	235	251
Hand molders and shapers, except jewelers	16 892	3 165	2 249	390	13 402	2 398	892	232	117	36	204	109	28	–
Patternmakers, lay-out workers, and cutters	17 388	5 502	992	804	15 440	3 419	509	414	73	9	363	842	11	14
Optical goods workers	33 171	41 736	2 983	3 212	26 933	34 050	1 858	2 767	140	206	1 231	1 486	26	15
Dental laboratory and medical appliance technicians	34 394	22 570	3 922	1 417	25 645	18 152	1 920	1 539	210	95	2 679	1 335	18	32
Bookbinders	13 964	15 969	1 273	1 837	11 008	11 252	1 282	2 347	77	59	320	465	4	9
Electrical and electronic equipment assemblers	104 105	205 301	16 168	30 184	64 041	124 165	11 109	25 831	691	1 591	11 990	23 357	106	173
Miscellaneous precision workers, n.e.c.	45 379	8 835	6 789	1 311	33 878	6 328	2 961	904	219	56	1 490	228	42	8
Precision food production occupations	331 632	160 280	59 404	17 605	225 771	110 260	32 693	24 977	2 276	1 419	11 096	5 876	392	143
Butchers and meat cutters	224 107	54 795	36 788	6 712	159 350	29 948	19 938	14 752	1 671	677	6 155	2 629	205	77
Bakers	86 076	73 096	18 436	6 408	52 020	55 950	10 585	7 941	468	488	4 424	2 277	143	32
Food batchmakers	21 449	32 389	4 180	4 485	14 401	24 362	2 170	2 284	137	254	517	970	44	34
Precision inspectors, testers, and related workers	105 820	34 835	6 958	3 106	86 840	25 073	7 821	4 758	576	252	3 565	1 614	60	32
Inspectors, testers, and graders	99 861	32 044	6 587	2 672	81 823	23 274	7 517	4 285	529	234	3 353	1 559	52	20
Adjusters and calibrators	5 959	2 791	371	434	5 017	1 799	304	473	47	18	212	55	8	12
Plant and system operators	296 009	17 135	16 497	1 013	247 493	13 105	24 075	2 455	2 561	230	5 232	314	151	18
Water and sewage treatment plant operators	58 174	3 095	2 952	89	49 091	2 434	5 103	468	530	50	483	54	15	–
Power plant operators	34 759	2 253	1 717	143	29 878	1 704	2 403	332	418	62	335	12	8	–
Stationary engineers	153 639	7 602	7 358	538	129 657	5 715	11 615	1 028	1 128	97	3 812	217	69	7
Miscellaneous plant and system operators	49 437	4 185	4 470	243	38 867	3 252	4 954	627	485	21	602	31	59	11
OPERATORS, FABRICATORS, AND LABORERS														
Machine operators, assemblers, and inspectors	**5 185 397**	**3 450 107**	**681 514**	**493 093**	**3 700 481**	**2 176 492**	**635 330**	**599 509**	**37 875**	**27 011**	**125 506**	**150 422**	**4 691**	**3 580**
Machine operators and tenders, except precision	3 176 768	2 231 958	437 314	327 447	2 242 513	1 388 448	397 125	396 711	21 208	17 065	75 594	100 049	3 014	2 238
Metal working and plastic working machine operators	317 227	70 805	30 605	5 656	251 726	54 094	28 776	9 439	1 887	556	4 085	994	148	66
Lathe and turning machine set-up operators	26 770	2 690	2 389	213	22 164	2 108	1 799	337	85	7	331	25	2	–
Lathe and turning machine operators	32 088	4 442	1 868	319	27 916	3 561	1 643	477	178	13	478	72	5	–
Milling and planing machine operators	5 806	983	399	48	4 868	769	331	129	31	15	168	22	9	–
Punching and stamping press machine operators	79 351	31 115	7 418	2 442	62 117	23 872	8 392	4 251	572	257	830	271	22	22
Rolling machine operators	11 767	1 976	897	123	9 538	1 477	1 216	339	46	15	70	13	–	9
Drilling and boring machine operators	17 201	4 375	1 034	328	14 713	3 407	1 236	558	71	50	129	26	18	6
Grinding, abrading, buffing, and polishing machine operators	105 876	19 582	13 934	1 775	78 869	14 596	10 687	2 587	713	170	1 586	425	87	29
Forging machine operators	16 076	970	1 043	46	13 108	796	1 688	114	81	–	156	14	–	–
Numerical control machine operators	1 363	273	133	23	1 102	189	85	24	–	–	43	37	–	–
Miscellaneous metal, plastic, stone, and glass working machine operators	20 929	4 399	1 490	339	17 331	3 319	1 699	623	110	29	294	89	5	–
Fabricating machine operators, n.e.c.	18 127	8 535	2 568	744	13 056	6 296	1 993	1 206	70	45	414	244	26	–
Metal and plastic processing machine operators	132 690	29 677	16 811	2 670	98 959	22 270	13 828	3 992	947	221	1 994	499	151	25
Molding and casting machine operators	68 281	21 187	7 238	1 855	52 925	15 960	6 806	2 881	500	132	754	334	58	25
Metal plating machine operators	31 109	4 288	5 817	499	21 106	3 171	3 045	469	214	50	857	99	70	–
Heat treating equipment operators	17 323	1 220	1 124	81	14 314	849	1 731	266	64	2	90	22	–	–
Miscellaneous metal and plastic processing machine operators	15 977	2 982	2 632	235	10 614	2 290	2 246	376	169	37	293	44	23	–

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					White		Black		American Indian, Eskimo, or Aleut		Asian or Pacific Islander		Other race	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
OPERATORS, FABRICATORS, AND LABORERS—Con.														
Woodworking machine operators	132 205	23 432	10 003	2 038	105 724	18 062	13 432	2 746	1 749	277	1 197	293	100	16
Wood lathe, routing, and planing machine operators	7 157	1 054	396	32	6 085	850	510	135	100	29	66	8	–	–
Sawing machine operators	82 788	12 117	5 821	1 355	65 402	8 955	9 641	1 445	1 241	134	610	212	73	16
Shaping and joining machine operators	4 180	1 864	392	75	3 417	1 563	283	199	54	15	34	12	–	–
Nailing and tacking machine operators	2 345	874	350	92	1 670	681	256	97	33	4	33	–	3	–
Miscellaneous woodworking machine operators	35 735	7 523	3 044	484	29 150	6 013	2 742	870	321	95	454	61	24	–
Printing machine operators	374 529	157 616	34 109	10 844	301 683	130 559	27 810	12 262	1 676	854	8 939	2 998	312	99
Printing press operators	293 657	66 124	28 472	6 173	232 614	50 983	23 741	7 166	1 358	373	7 184	1 372	288	57
Photoengravers and lithographers	35 861	13 245	2 528	797	31 245	11 235	1 371	900	102	81	608	219	7	13
Typesetters and compositors	21 641	50 712	1 277	1 920	18 625	45 618	941	2 107	90	215	697	836	11	16
Miscellaneous printing machine operators	23 370	27 535	1 832	1 954	19 199	22 723	1 757	2 089	126	185	450	571	6	13
Textile, apparel, and furnishings machine operators	341 153	1 076 419	68 986	167 869	192 812	615 037	59 766	215 752	2 008	8 815	17 176	68 013	405	933
Winding and twisting machine operators	19 579	51 041	530	686	14 098	33 929	4 600	15 510	109	395	242	516	–	5
Knitting, looping, taping, and weaving machine operators	21 250	38 973	2 216	1 496	13 893	26 721	4 587	9 384	216	427	314	914	24	31
Textile cutting machine operators	4 549	3 290	840	448	2 758	2 167	824	602	28	22	95	51	4	–
Textile sewing machine operators	93 074	690 725	32 621	123 539	39 485	383 544	14 820	120 961	500	5 460	5 508	56 632	140	589
Shoe machine operators	10 052	24 192	1 355	1 701	7 788	20 447	736	1 722	66	115	100	156	7	51
Pressing machine operators	54 543	93 868	10 597	15 651	30 018	47 429	9 242	27 448	310	662	4 295	2 589	81	89
Laundering and dry cleaning machine operators	82 729	136 368	15 090	21 840	46 523	75 314	14 618	31 095	464	1 290	5 952	6 666	82	163
Miscellaneous textile machine operators	55 377	37 962	5 737	2 508	38 249	25 486	10 339	9 030	315	444	670	489	67	5
Machine operators, assorted materials	1 860 837	865 474	274 232	137 626	1 278 553	542 130	251 520	151 314	12 871	6 297	41 789	27 008	1 872	1 099
Cementing and gluing machine operators	20 070	12 316	3 569	1 280	12 421	8 893	3 510	1 819	240	118	262	206	68	–
Packaging and filling machine operators	112 546	168 699	23 926	34 395	64 667	94 970	19 511	32 183	851	1 113	3 433	5 782	158	256
Extruding and forming machine operators	23 668	4 233	1 755	348	19 181	3 402	2 237	425	168	12	294	46	33	–
Mixing and blending machine operators	97 976	13 165	10 883	1 349	67 044	8 844	17 772	2 425	677	90	1 531	426	69	31
Separating, filtering, and clarifying machine operators	61 822	7 808	5 105	845	48 174	5 391	7 414	1 418	311	85	810	58	8	11
Compressing and compacting machine operators	17 356	4 997	1 713	443	12 841	3 404	2 428	1 036	138	65	225	38	11	11
Painting and paint spraying machine operators	116 325	19 852	21 267	2 257	80 609	14 068	11 799	2 925	795	172	1 800	397	55	33
Roasting and baking machine operators, food	3 796	952	564	112	2 678	593	508	238	33	3	13	6	–	–
Washing, cleaning, and pickling machine operators	7 229	3 209	1 086	509	5 143	2 084	837	523	70	28	93	59	–	6
Folding machine operators	6 699	13 730	900	1 647	4 959	8 542	660	3 076	34	87	146	335	–	43
Furnace, kiln, and oven operators, except food	90 357	5 919	5 583	352	71 653	4 339	11 681	1 034	733	92	674	100	33	2
Crushing and grinding machine operators	36 554	8 653	4 335	672	27 337	6 238	4 084	1 500	412	121	370	122	16	–
Slicing and cutting machine operators	133 879	54 070	23 332	9 493	90 601	33 194	16 108	9 100	1 234	491	2 480	1 753	124	39
Motion picture projectionists	8 811	1 546	579	46	7 671	1 344	424	69	13	8	118	71	6	8
Photographic process machine operators	49 210	52 729	4 596	4 031	37 094	41 828	4 439	4 593	288	392	2 720	1 879	73	6
Miscellaneous machine operators, n.e.c.	411 563	199 707	63 723	31 383	277 687	123 345	56 416	37 093	2 744	1 538	10 516	6 059	477	289
Manufacturing, nondurable goods	164 760	72 060	21 210	11 669	113 627	43 143	25 345	14 613	1 099	559	3 294	2 001	185	75
Manufacturing, durable goods	189 490	87 622	34 156	15 493	124 564	52 709	23 738	15 571	1 132	659	5 650	3 024	250	166
Nonmanufacturing industries	57 313	40 025	8 357	4 221	39 496	27 493	7 333	6 909	513	320	1 572	1 034	42	48
Machine operators, not specified	662 976	293 889	101 316	48 464	448 793	181 651	91 692	51 857	4 130	1 882	16 304	9 671	741	364
Manufacturing, nondurable goods	190 549	118 677	29 434	18 792	126 017	74 093	29 680	21 551	1 029	710	4 143	3 452	246	79
Manufacturing, durable goods	314 293	125 191	47 520	20 918	215 776	78 000	40 502	20 776	1 879	778	8 282	4 502	334	217
Nonmanufacturing industries	158 134	50 021	24 362	8 754	107 000	29 558	21 510	9 530	1 222	394	3 879	1 717	161	68
Fabricators, assemblers, and hand working occupations	1 611 743	780 910	207 631	105 905	1 156 126	503 227	195 348	129 907	14 155	6 436	37 060	34 534	1 423	901
Welders and cutters	613 596	30 382	67 814	3 677	478 483	20 511	51 767	5 297	6 770	378	8 346	476	416	43
Solderers and brazers	9 320	18 917	3 009	3 118	4 954	12 566	729	1 888	54	191	555	1 128	19	26
Assemblers	892 566	681 413	123 232	93 822	602 851	434 129	133 334	116 006	6 467	5 304	25 835	31 390	847	762
Hand cutting and trimming occupations	10 378	6 127	2 313	909	6 110	2 876	1 385	1 779	149	92	404	471	17	–
Hand molding, casting, and forming occupations	18 792	7 617	2 252	841	14 391	5 730	1 707	775	126	61	289	199	27	11
Hand painting, coating, and decorating occupations	30 865	14 193	3 986	1 255	23 221	11 319	2 676	1 148	321	164	607	286	54	21
Hand engraving and printing occupations	8 417	6 437	1 088	504	6 556	5 400	474	411	52	38	247	84	–	–
Miscellaneous hand working occupations	27 809	15 824	3 937	1 779	19 560	10 696	3 276	2 603	216	208	777	500	43	38
Production inspectors, testers, samplers, and weighers	396 886	437 239	36 569	59 741	301 842	284 817	42 857	72 891	2 512	3 510	12 852	15 839	254	441
Production inspectors, checkers, and examiners	294 026	330 982	22 684	34 393	231 636	227 642	29 069	54 976	1 664	2 476	8 789	11 218	184	277
Production testers	40 360	19 784	2 720	1 704	31 592	13 859	3 310	2 501	173	162	2 554	1 525	11	33
Production samplers and weighers	5 285	5 505	706	2 125	3 894	2 577	552	499	34	24	88	271	11	9
Graders and sorters, except agricultural	57 215	80 968	10 459	21 519	34 720	40 739	9 926	14 915	641	848	1 421	2 825	48	122

Table 1. Detailed Occupation of the Civilian Labor Force by Sex, Race, and Hispanic Origin: 1990—Con.

[Data based on sample and subject to sampling variability, see text. For definitions of terms and meanings of symbols, see text]

United States	All persons		Hispanic origin (of any race)		Not of Hispanic origin									
					White		Black		American Indian, Eskimo, or Aleut		Asian or Pacific Islander		Other race	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
OPERATORS, FABRICATORS, AND LABORERS—Con.														
Transportation and material moving occupations	**4 594 570**	**504 404**	**408 847**	**29 395**	**3 481 397**	**387 462**	**609 410**	**77 409**	**37 247**	**5 568**	**54 689**	**4 199**	**2 980**	**371**
Motor vehicle operators	3 392 948	444 959	310 262	23 813	2 540 950	345 474	469 292	67 099	24 434	4 770	45 699	3 503	2 311	300
Supervisors, motor vehicle operators	67 709	12 642	4 652	671	54 538	10 181	7 268	1 589	325	81	920	120	6	–
Truck drivers	2 733 620	175 332	240 989	10 690	2 106 910	140 885	337 125	19 707	19 792	2 044	27 157	1 892	1 647	114
Driver-sales workers	128 937	14 416	8 332	850	110 556	12 430	7 879	837	503	133	1 593	145	74	21
Bus drivers	232 404	215 166	19 176	8 967	143 330	163 415	64 209	39 669	2 324	2 126	3 168	833	197	156
Taxicab drivers and chauffeurs	184 894	22 439	27 911	2 088	101 972	15 515	42 642	4 274	1 262	306	10 831	256	276	–
Parking lot attendants	41 776	4 783	8 641	541	21 280	2 916	9 555	985	184	75	2 005	257	111	9
Motor transportation occupations, n.e.c.	3 608	181	561	6	2 364	132	614	38	44	5	25	–	–	–
Transportation occupations, except motor vehicles	183 732	7 375	6 675	431	158 956	5 229	15 200	1 438	1 326	117	1 495	151	80	9
Rail transportation occupations	117 319	4 527	4 209	283	100 804	3 032	11 163	1 061	577	57	522	94	44	–
Railroad conductors and yardmasters	35 140	2 433	1 066	173	31 142	1 617	2 528	561	114	30	276	52	14	–
Locomotive operating occupations	44 744	1 222	1 540	64	37 888	841	4 881	248	257	27	152	42	26	–
Railroad brake, signal, and switch operators	32 689	570	1 352	40	27 882	440	3 227	90	149	–	75	–	4	–
Rail vehicle operators, n.e.c.	4 746	302	251	6	3 892	134	527	162	57	–	19	–	–	–
Water transportation occupations	66 413	2 848	2 466	148	58 152	2 197	4 037	377	749	60	973	57	36	9
Ship captains and mates, except fishing boats	31 956	1 041	756	38	29 645	907	796	81	395	–	353	15	11	–
Sailors and deckhands	24 992	953	1 399	85	20 199	708	2 586	104	250	29	533	27	25	–
Marine engineers	4 103	49	109	–	3 712	40	199	9	23	–	60	–	–	–
Bridge, lock, and lighthouse tenders	5 362	805	202	25	4 596	542	456	183	81	31	27	15	–	9
Material moving equipment operators	1 017 890	52 070	91 910	5 151	781 491	36 759	124 918	8 872	11 487	681	7 495	545	589	62
Supervisors, material moving equipment operators	22 365	1 438	1 377	35	18 860	1 177	1 801	168	153	18	161	40	13	–
Operating engineers	236 996	4 816	15 325	452	200 053	3 406	16 415	706	3 467	161	1 625	91	111	–
Longshore equipment operators	4 331	72	446	8	2 476	64	1 226	–	83	–	100	–	–	–
Hoist and winch operators	19 831	469	2 454	35	15 667	328	1 230	106	370	–	91	–	19	–
Crane and tower operators	79 850	1 975	4 795	116	63 491	1 354	10 358	458	680	7	502	40	24	–
Excavating and loading machine operators	94 408	1 575	4 622	78	83 036	1 285	5 257	187	1 074	13	365	12	54	–
Grader, dozer, and scraper operators	63 758	1 122	2 561	51	55 979	901	4 035	114	910	39	261	–	12	17
Industrial truck and tractor equipment operators	414 030	27 829	53 657	1 974	278 034	20 163	74 605	5 119	3 753	331	3 693	210	288	32
Miscellaneous material moving equipment operators	82 321	12 774	6 673	2 402	63 895	8 081	9 991	2 014	997	112	697	152	68	13
Handlers, equipment cleaners, helpers, and laborers	**4 203 264**	**1 038 920**	**575 949**	**127 570**	**2 891 706**	**722 137**	**623 288**	**152 681**	**41 478**	**9 119**	**66 885**	**26 330**	**3 958**	**1 083**
Supervisors, handlers, equipment cleaners, and laborers, n.e.c.	13 990	1 678	1 650	129	9 866	1 147	2 010	342	106	25	332	35	26	–
Helpers, mechanics, and repairers	20 613	1 258	4 191	162	13 300	883	2 426	143	274	48	400	22	22	–
Helpers, construction, and extractive occupations	88 032	4 680	15 313	340	60 841	3 788	10 028	460	965	64	850	28	35	–
Helpers, construction trades	81 768	3 836	14 966	317	55 460	3 036	9 629	417	862	45	816	21	35	–
Helpers, surveyor	4 221	454	179	7	3 766	387	180	43	62	10	34	7	–	–
Helpers, extractive occupations	2 043	390	168	16	1 615	365	219	–	41	9	–	–	–	–
Construction laborers	1 103 482	46 298	188 082	5 365	744 189	33 252	145 635	6 256	13 235	843	11 392	575	949	7
Production helpers	29 835	8 148	6 115	1 459	18 353	4 959	4 225	1 194	280	92	831	444	31	–
Freight, stock, and material handlers	1 364 524	397 396	134 220	31 233	976 326	304 056	217 669	50 193	10 934	3 135	24 143	8 391	1 232	388
Garbage collectors	57 407	2 502	6 535	216	31 823	1 435	18 060	779	561	46	347	18	81	8
Stevedores	11 133	350	1 611	66	5 737	186	3 316	92	160	6	287	–	22	–
Stock handlers and baggers	726 754	303 608	67 464	22 914	547 294	239 602	90 148	31 671	4 907	2 353	16 246	6 780	695	288
Machine feeders and offbearers	56 986	30 223	5 167	2 940	40 304	20 457	10 069	5 971	607	233	832	572	7	50
Freight, stock, and material handlers, n.e.c.	512 244	60 713	53 443	5 097	351 168	42 376	96 076	11 680	4 699	497	6 431	1 021	427	42
Garage and service station related occupations	241 429	28 798	22 703	2 164	187 379	23 142	23 987	2 586	2 309	332	4 847	549	204	25
Vehicle washers and equipment cleaners	203 731	28 785	34 295	3 643	125 739	18 613	38 980	5 342	1 553	335	2 935	802	229	50
Hand packers and packagers	130 183	238 158	30 814	44 227	71 818	148 174	22 446	36 442	964	1 628	3 948	7 387	193	300
Laborers, except construction	1 007 445	283 721	138 566	38 848	683 895	184 123	155 882	49 723	10 858	2 617	17 207	8 097	1 037	313
Manufacturing, nondurable goods	156 302	74 247	23 170	10 585	102 384	45 976	26 372	14 896	1 233	571	2 999	2 148	144	71
Manufacturing, durable goods	238 225	69 630	31 066	9 393	169 227	47 932	32 933	10 029	1 922	530	2 898	1 638	179	108
Transportation, communications, and other public utilities	119 224	14 387	14 906	1 794	78 184	8 398	22 843	3 552	1 623	296	1 502	332	166	15
Wholesale and retail trade	278 875	69 948	37 501	9 343	197 159	47 425	35 472	10 291	2 238	431	6 206	2 372	299	86
All other industries	214 819	55 509	31 923	7 733	136 941	34 392	38 262	10 955	3 842	789	3 602	1 607	249	33
EXPERIENCED UNEMPLOYED NOT CLASSIFIED BY OCCUPATION														
Unemployed, no recent civilian work experience	445 737	554 214	84 818	104 939	194 786	250 399	141 597	169 624	7 782	7 895	16 269	20 655	485	702

Table 2. **Detailed Occupation of the Civilian Labor Force by Sex and Race: 1990**

[Data based on sample and subject to sampling variability, see text. For definitions of terms and meanings of symbols, see text]

United States	All persons		White		Black		American Indian, Eskimo, or Aleut		Asian or Pacific Islander		Other race	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Civilian labor force 16 years and over	**66 986 201**	**56 487 249**	**55 699 109**	**45 826 627**	**6 247 539**	**6 847 642**	**459 892**	**391 420**	**1 918 998**	**1 684 082**	**2 660 663**	**1 737 478**
MANAGERIAL AND PROFESSIONAL SPECIALTY OCCUPATIONS												
Executive, administrative, and managerial occupations	**8 448 483**	**6 170 674**	**7 630 041**	**5 345 826**	**411 472**	**507 260**	**32 624**	**33 683**	**254 287**	**184 348**	**120 059**	**99 557**
Legislators	7 431	5 285	6 302	4 399	612	631	335	115	129	58	53	82
Chief executives and general administrators, public administration	13 788	5 235	11 591	3 869	1 617	1 039	202	77	154	120	224	130
Administrators and officials, public administration	275 864	230 819	238 091	184 657	25 425	36 056	2 813	2 610	5 777	4 119	3 758	3 377
Administrators, protective services	35 201	14 072	31 659	11 348	2 449	2 070	288	155	354	190	451	309
Financial managers	343 630	292 281	315 117	260 880	12 417	17 858	637	895	12 488	8 842	2 971	3 806
Personnel and labor relations managers	141 246	134 249	121 111	113 557	10 413	13 498	618	821	4 861	3 355	4 243	3 018
Purchasing managers	80 136	40 639	74 513	35 500	2 592	3 381	256	283	2 032	938	743	537
Managers, marketing, advertising, and public relations	415 411	193 698	393 106	179 343	10 360	7 798	914	653	8 412	3 983	2 619	1 921
Administrators, education and related fields	295 274	328 338	257 136	274 088	26 745	40 565	1 748	2 287	6 101	6 226	3 544	5 172
Managers, medicine and health	78 099	155 522	65 703	131 261	8 360	17 170	348	946	2 430	3 523	1 258	2 622
Postmasters and mail superintendents	21 614	18 232	18 973	16 869	1 824	957	209	203	249	116	359	87
Managers, food serving and lodging establishments	572 095	458 556	473 859	384 362	39 149	39 419	2 600	3 088	38 685	21 413	17 802	10 274
Managers, properties and real estate	221 625	189 841	198 794	169 631	12 334	11 876	1 010	1 254	4 974	3 156	4 513	3 924
Funeral directors	39 393	6 093	34 994	4 978	3 917	1 016	116	35	140	19	226	45
Managers, service organizations, n.e.c.	201 002	203 071	177 228	176 341	15 195	19 562	1 307	1 561	3 857	2 802	3 415	2 805
Managers and administrators, n.e.c., salaried	3 355 970	1 585 636	3 107 913	1 428 336	111 904	90 208	10 608	7 165	85 999	37 094	39 546	22 833
Managers and administrators, n.e.c., self-employed	313 599	90 788	288 654	82 753	9 657	2 369	1 555	464	8 819	3 950	4 914	1 252
Management related occupations	2 037 105	2 218 319	1 815 297	1 883 654	116 502	201 787	7 060	11 071	68 826	84 444	29 420	37 363
Accountants and auditors	751 840	838 338	666 140	702 298	38 187	69 768	1 589	3 614	37 734	49 971	8 190	12 687
Underwriters	21 949	45 818	19 893	40 235	1 237	3 823	45	115	575	1 099	199	546
Other financial officers	328 204	351 071	301 317	306 963	13 565	26 293	727	1 415	9 478	10 372	3 117	6 028
Management analysts	186 724	95 065	173 726	83 900	6 725	7 231	627	522	4 441	2 562	1 205	850
Personnel, training, and labor relations specialists	217 138	296 487	184 670	243 372	21 800	38 857	1 406	1 942	3 781	6 191	5 481	6 125
Purchasing agents and buyers, farm products	14 336	2 962	13 025	2 188	617	510	40	42	226	53	428	169
Buyers, wholesale and retail trade, except farm products	107 051	121 348	97 931	110 781	3 874	5 427	326	433	2 868	2 861	2 052	1 846
Purchasing agents and buyers, n.e.c.	135 474	111 493	123 680	98 479	6 587	9 055	533	644	2 547	1 728	2 127	1 587
Business and promotion agents	19 569	16 923	17 428	15 131	1 125	1 073	95	117	414	381	507	221
Construction inspectors	60 087	4 197	53 044	3 229	4 000	721	493	51	1 414	103	1 136	93
Inspectors and compliance officers, except construction	112 130	49 147	94 987	35 219	11 131	10 545	789	459	2 651	1 434	2 572	1 490
Management related occupations, n.e.c.	82 603	285 470	69 456	241 859	7 654	28 484	390	1 717	2 697	7 689	2 406	5 721
Professional specialty occupations	**7 706 256**	**8 941 432**	**6 814 728**	**7 678 901**	**410 505**	**827 439**	**30 475**	**44 431**	**355 851**	**275 268**	**94 697**	**115 393**
Engineers, architects, and surveyors	1 695 690	180 833	1 507 087	151 469	52 577	12 376	4 793	621	115 218	14 064	16 015	2 303
Architects	133 212	23 662	120 541	21 365	3 790	639	274	48	6 834	1 378	1 773	232
Engineers	1 551 961	156 283	1 376 473	129 303	48 607	11 682	4 452	569	108 235	12 658	14 194	2 071
Aerospace	131 786	11 648	115 649	9 435	3 705	942	431	65	10 249	1 034	1 752	172
Metallurgical and materials	17 021	2 209	15 430	1 856	422	243	34	5	992	70	143	35
Mining	6 063	415	5 731	373	44	24	54	18	160	–	74	–
Petroleum	22 908	1 657	21 477	1 470	449	90	75	13	742	67	165	17
Chemical	57 163	7 157	51 104	6 004	1 754	520	86	7	3 848	555	371	71
Nuclear	10 108	693	9 172	629	186	5	21	8	668	41	61	10
Civil	235 162	17 646	206 163	14 523	7 113	1 094	771	64	18 843	1 710	2 272	255
Agricultural	2 012	136	1 903	96	27	18	–	–	64	22	18	–
Electrical and electronic	420 471	46 552	367 566	36 935	15 370	4 320	1 156	133	32 634	4 618	3 745	546
Industrial	151 859	24 474	139 045	21 086	4 851	1 659	472	114	5 945	1 213	1 546	402
Mechanical	176 092	9 780	159 458	8 359	4 627	559	448	17	10 295	703	1 264	142
Marine and naval architects	12 776	493	11 742	434	323	52	65	–	574	7	72	–
Engineers, n.e.c.	308 540	33 423	272 033	28 103	9 736	2 156	839	125	23 221	2 618	2 711	421
Surveyors and mapping scientists	10 517	888	10 073	801	180	55	67	4	149	28	48	–
Mathematical and computer scientists	503 806	275 701	440 712	230 099	24 338	25 127	1 483	1 013	32 708	16 447	4 565	3 015
Computer systems analysts and scientists	326 831	144 459	284 776	121 555	13 964	11 406	915	446	24 390	9 925	2 786	1 127
Operations and systems researchers and analysts	144 484	107 334	126 926	88 938	9 111	11 416	497	498	6 414	4 773	1 536	1 709
Actuaries	12 416	6 316	11 416	5 542	195	214	7	–	745	529	53	31
Statisticians	15 744	16 108	13 736	12 865	915	1 880	64	60	863	1 161	166	142
Mathematical scientists, n.e.c.	4 331	1 484	3 858	1 199	153	211	–	9	296	59	24	6
Natural scientists	300 573	108 102	267 943	90 489	10 776	6 539	1 333	418	18 162	9 436	2 359	1 220
Physicists and astronomers	24 238	3 604	22 096	3 137	479	206	85	14	1 480	210	98	37
Chemists, except biochemists	102 505	38 750	86 661	30 240	5 732	3 008	228	93	9 115	4 853	769	556
Atmospheric and space scientists	7 279	1 075	6 751	934	242	63	37	2	215	61	34	15
Geologists and geodesists	45 501	7 628	43 720	7 191	421	183	128	36	848	139	384	79
Physical scientists, n.e.c.	13 338	5 444	12 281	4 813	433	433	44	40	467	158	113	–
Agricultural and food scientists	25 537	9 305	23 444	8 132	869	597	87	55	814	387	323	134
Biological and life scientists	36 207	25 930	32 176	22 216	1 151	1 292	168	72	2 468	2 128	244	222
Forestry and conservation scientists	30 205	4 610	28 218	4 245	919	191	556	61	231	55	281	58
Medical scientists	15 763	11 756	12 596	9 581	530	566	–	45	2 524	1 445	113	119
Health diagnosing occupations	700 419	174 106	619 287	139 436	19 068	9 803	1 055	425	55 417	22 589	5 592	1 853
Physicians	465 468	121 247	400 756	93 271	14 130	7 408	727	252	45 483	19 052	4 372	1 264
Dentists	135 588	19 941	124 507	16 274	3 604	1 262	149	53	6 519	2 107	809	245
Veterinarians	35 755	12 989	33 945	12 219	550	302	56	25	1 099	413	105	30
Optometrists	23 463	4 052	22 250	3 521	205	200	56	11	900	292	52	28
Podiatrists	7 904	1 004	7 487	784	172	127	6	–	160	93	79	–
Health diagnosing practitioners, n.e.c.	32 241	14 873	30 342	13 367	407	504	61	84	1 256	632	175	286
Health assessment and treating occupations	322 927	2 191 413	274 643	1 873 530	25 935	193 847	1 479	8 871	15 919	95 884	4 951	19 281
Registered nurses	107 244	1 777 885	88 579	1 517 912	10 550	157 515	598	7 363	5 386	80 494	2 131	14 601
Pharmacists	114 949	66 849	104 015	56 134	3 487	4 349	267	111	6 616	5 606	564	649
Dietitians	9 629	80 594	6 096	60 634	2 806	14 639	88	475	315	3 612	324	1 234
Therapists	78 143	253 478	65 050	228 181	7 923	16 292	425	794	3 065	5 690	1 680	2 521
Respiratory therapists	26 155	39 434	21 014	33 643	2 934	4 167	154	157	1 305	1 028	748	439
Occupational therapists	3 957	33 938	3 271	30 677	343	1 711	8	71	172	1 213	163	266
Physical therapists	22 540	69 482	19 333	63 197	1 623	3 531	108	198	1 156	1 823	320	733
Speech therapists	5 736	58 977	5 415	55 114	185	2 650	28	102	57	737	51	374
Therapists, n.e.c.	19 755	51 647	16 017	45 550	2 838	4 233	127	266	375	889	398	709
Physicians' assistants	12 962	12 607	10 903	10 669	1 169	1 052	101	128	537	482	252	276

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Table 2. **Detailed Occupation of the Civilian Labor Force by Sex and Race: 1990**—Con.

[Data based on sample and subject to sampling variability, see text. For definitions of terms and meanings of symbols, see text]

United States	All persons		White		Black		American Indian, Eskimo, or Aleut		Asian or Pacific Islander		Other race	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
MANAGERIAL AND PROFESSIONAL SPECIALTY OCCUPATIONS—Con.												
Teachers, postsecondary	467 429	318 804	403 626	278 755	19 052	19 489	1 599	1 362	38 856	15 988	4 296	3 210
Earth, environmental, and marine science teachers	889	364	839	342	–	–	–	–	50	5	–	17
Biological science teachers	4 031	2 070	3 768	1 917	44	56	10	–	201	97	8	–
Chemistry teachers	4 053	1 393	3 634	1 204	110	45	7	9	289	113	13	22
Physics teachers	3 876	556	3 389	489	129	28	–	–	339	39	19	–
Natural science teachers, n.e.c.	292	97	272	80	7	9	–	–	13	–	–	8
Psychology teachers	2 409	2 109	2 249	1 926	79	100	7	19	51	36	23	28
Economics teachers	2 650	776	2 323	726	84	10	–	–	219	40	24	–
History teachers	2 996	1 125	2 883	1 054	82	59	7	7	12	–	12	5
Political science teachers	752	253	678	222	53	–	6	7	15	14	–	10
Sociology teachers	905	552	782	500	39	39	27	2	48	11	9	–
Social science teachers, n.e.c.	548	312	453	276	65	11	14	11	16	14	–	–
Engineering teachers	6 489	1 288	5 644	1 180	271	68	12	–	510	40	52	–
Mathematical science teachers	10 639	6 718	9 229	5 899	522	363	30	57	728	332	130	67
Computer science teachers	2 679	1 705	2 255	1 498	106	82	5	11	282	78	31	36
Medical science teachers	1 976	767	1 816	686	68	38	7	–	85	43	–	–
Health specialties teachers	3 784	11 927	3 320	10 760	151	882	14	45	284	177	15	63
Business, commerce, and marketing teachers	2 288	2 775	1 946	2 475	148	198	25	22	138	69	31	11
Agriculture and forestry teachers	759	302	724	283	16	11	2	8	10	–	7	–
Art, drama, and music teachers	10 591	10 802	9 681	9 870	493	431	40	49	221	387	156	65
Physical education teachers	2 042	2 073	1 767	1 755	163	255	8	12	54	34	50	17
Education teachers	747	708	661	603	65	97	–	8	10	–	11	–
English teachers	10 243	14 033	9 498	12 869	448	627	15	56	120	295	162	186
Foreign language teachers	2 966	7 059	2 495	6 146	128	109	11	7	188	556	144	241
Law teachers	3 158	1 397	2 921	1 291	173	70	17	–	31	29	16	7
Social work teachers	103	205	85	181	–	24	–	–	18	–	–	–
Theology teachers	2 001	615	1 894	592	59	18	8	3	40	2	–	–
Trade and industrial teachers	668	602	605	539	37	44	7	–	9	19	10	–
Home economics teachers	94	499	75	390	19	93	–	–	–	16	–	–
Teachers, postsecondary, n.e.c.	8 779	4 676	7 823	4 105	286	273	19	35	561	190	90	73
Postsecondary teachers, subject not specified	374 022	241 046	319 917	208 897	15 207	15 449	1 301	994	34 314	13 352	3 283	2 354
Teachers, except postsecondary	1 157 678	3 401 848	1 024 154	2 937 371	91 025	349 480	6 307	17 646	19 856	48 360	16 336	48 991
Teachers, prekindergarten and kindergarten	5 920	263 410	4 350	216 097	1 142	34 299	95	2 294	154	4 587	179	6 133
Teachers, elementary school	652 015	2 372 174	572 473	2 038 535	58 147	257 434	3 540	11 547	8 602	30 932	9 253	33 726
Teachers, secondary school	269 533	354 867	248 376	320 240	14 074	25 549	1 168	1 518	2 843	3 967	3 072	3 593
Teachers, special education	11 047	51 169	9 584	44 183	1 081	5 439	79	349	108	535	195	663
Teachers, n.e.c.	219 163	360 228	189 371	318 316	16 581	26 759	1 425	1 938	8 149	8 339	3 637	4 876
Counselors, educational and vocational	91 763	146 770	75 142	117 990	11 546	21 814	898	1 473	1 890	2 668	2 287	2 825
Librarians, archivists, and curators	49 787	178 669	42 834	157 333	3 789	13 372	278	920	2 075	5 462	811	1 582
Librarians	37 522	163 359	31 840	143 646	3 137	12 504	163	781	1 823	5 003	559	1 425
Archivists and curators	12 265	15 310	10 994	13 687	652	868	115	139	252	459	252	157
Social scientists and urban planners	189 041	196 197	171 835	177 232	10 055	12 145	639	849	4 695	4 340	1 817	1 631
Economists	85 335	66 902	78 211	60 649	3 565	3 552	197	166	2 788	2 151	574	384
Psychologists	79 430	112 532	72 014	101 696	5 151	7 345	337	624	1 038	1 774	890	1 093
Sociologists	1 152	1 059	913	888	65	105	31	7	126	59	17	–
Social scientists, n.e.c.	10 649	9 648	9 819	8 687	404	604	42	29	261	242	123	86
Urban planners	12 475	6 056	10 878	5 312	870	539	32	23	482	114	213	68
Social, recreation, and religious workers	552 861	580 533	459 625	446 915	64 827	105 240	3 988	5 670	13 196	9 336	11 225	13 372
Social workers	204 760	454 159	151 512	334 472	39 357	95 808	2 379	5 055	4 556	7 140	6 956	11 684
Recreation workers	14 811	35 968	10 456	30 137	3 365	4 312	168	221	280	583	542	715
Clergy	291 140	33 749	259 894	30 205	19 446	2 306	1 257	179	7 364	699	3 179	360
Religious workers, n.e.c.	42 150	56 657	37 763	52 101	2 659	2 814	184	215	996	914	548	613
Lawyers and judges	589 326	190 145	562 660	171 754	15 767	12 181	1 146	547	6 960	4 102	2 793	1 561
Lawyers	564 332	182 745	539 582	165 478	14 360	11 310	1 029	473	6 744	3 976	2 617	1 508
Judges	24 994	7 400	23 078	6 276	1 407	871	117	74	216	126	176	53
Writers, artists, entertainers, and athletes	1 084 956	998 311	965 180	906 528	61 750	46 026	5 477	4 616	30 899	26 592	21 650	14 549
Authors	53 863	52 867	50 948	49 829	1 429	1 733	270	200	937	834	279	271
Technical writers	37 265	37 027	35 092	33 547	1 354	2 042	102	196	656	964	61	278
Designers	265 299	331 503	235 215	303 185	11 059	10 145	1 016	1 324	12 246	10 852	5 763	5 997
Musicians and composers	99 409	48 611	84 442	44 986	8 969	2 197	434	146	1 912	1 073	3 652	209
Actors and directors	67 787	41 786	61 024	37 086	4 622	3 329	300	178	892	705	949	488
Painters, sculptors, craft-artists, and artist printmakers	101 067	111 695	89 022	104 373	5 086	2 610	1 001	784	3 400	2 854	2 558	1 074
Photographers	100 169	43 351	89 125	38 533	5 591	2 576	446	223	2 938	991	2 069	1 028
Dancers	5 097	16 816	4 008	14 641	576	1 056	57	185	230	637	226	297
Artists, performers, and related workers, n.e.c.	46 865	46 556	39 635	39 574	3 025	1 987	344	406	2 082	2 704	1 779	1 885
Editors and reporters	131 303	135 240	120 883	122 708	5 884	8 232	441	399	2 860	2 709	1 235	1 192
Public relations specialists	69 118	98 450	62 338	87 234	4 179	7 843	314	342	1 323	1 650	964	1 381
Announcers	47 752	12 517	41 978	10 574	4 061	1 373	285	116	518	233	910	221
Athletes	59 962	21 892	51 470	20 258	5 915	903	467	117	905	386	1 205	228
TECHNICAL, SALES, AND ADMINISTRATIVE SUPPORT OCCUPATIONS												
Technicians and related support occupations	**2 366 641**	**2 020 767**	**2 019 015**	**1 648 806**	**157 491**	**235 786**	**12 494**	**12 002**	**128 344**	**86 049**	**49 297**	**38 124**
Health technologists and technicians	270 887	1 158 210	207 248	937 792	35 874	154 752	1 955	7 348	17 057	36 339	8 753	21 979
Clinical laboratory technologists and technicians	82 202	247 690	59 477	195 726	11 648	31 598	517	1 071	8 192	15 491	2 368	3 804
Dental hygienists	1 174	71 220	937	68 024	124	1 413	6	151	87	1 118	20	514
Health record technologists and technicians	4 663	51 101	2 718	39 761	1 123	7 684	45	709	527	1 548	250	1 399
Radiologic technicians	36 176	94 207	28 922	84 812	3 599	6 612	262	380	1 913	1 308	1 480	1 095
Licensed practical nurses	27 569	401 904	19 260	308 561	5 785	74 292	263	3 328	1 195	8 912	1 066	6 811
Health technologists and technicians, n.e.c.	119 103	292 088	95 934	240 908	13 595	33 153	862	1 709	5 143	7 962	3 569	8 356

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Table 2. **Detailed Occupation of the Civilian Labor Force by Sex and Race: 1990**—Con.

[Data based on sample and subject to sampling variability, see text. For definitions of terms and meanings of symbols, see text]

United States	All persons		White		Black		American Indian, Eskimo, or Aleut		Asian or Pacific Islander		Other race	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
TECHNICAL, SALES, AND ADMINISTRATIVE SUPPORT OCCUPATIONS—Con.												
Technologists and technicians, except health	2 095 754	862 557	1 811 767	711 014	121 617	81 034	10 539	4 654	111 287	49 710	40 544	16 145
Engineering and related technologists and technicians	899 324	205 111	783 355	168 147	49 743	19 778	5 010	1 328	41 556	11 423	19 660	4 435
Electrical and electronic technicians	345 626	55 837	293 759	42 781	22 597	7 121	1 664	389	19 717	3 883	7 889	1 663
Industrial engineering technicians	11 991	3 333	10 785	2 891	680	332	74	24	241	32	211	54
Mechanical engineering technicians	27 578	2 531	24 616	2 034	1 085	238	81	35	1 337	145	459	79
Engineering technicians, n.e.c.	166 541	73 139	144 841	59 086	10 380	8 098	872	407	7 274	4 092	3 174	1 456
Drafting occupations	263 940	60 824	232 525	53 309	12 108	3 037	1 371	330	11 701	3 114	6 235	1 034
Surveying and mapping technicians	83 648	9 447	76 829	8 046	2 893	952	948	143	1 286	157	1 692	149
Science technicians	141 022	67 966	117 702	54 586	11 393	7 001	959	439	6 848	4 022	4 120	1 918
Biological technicians	32 467	24 256	26 917	19 922	2 378	2 043	241	128	1 388	1 218	1 543	945
Chemical technicians	57 700	18 939	48 232	15 046	5 708	2 572	351	126	2 054	930	1 355	265
Science technicians, n.e.c.	50 855	24 771	42 553	19 618	3 307	2 386	367	185	3 406	1 874	1 222	708
Technicians, except health, engineering, and science	1 055 408	589 480	910 710	488 281	60 481	54 255	4 570	2 887	62 883	34 265	16 764	9 792
Airplane pilots and navigators	105 929	3 897	102 328	3 504	1 644	292	402	19	1 054	48	501	34
Air traffic controllers	36 668	10 495	32 199	8 602	3 240	1 495	151	64	628	161	450	173
Broadcast equipment operators	27 241	8 278	23 218	6 514	2 571	1 257	184	104	646	261	622	142
Computer programmers	447 109	215 650	390 605	175 109	21 164	18 813	1 221	565	29 001	18 729	5 118	2 434
Tool programmers, numerical control	3 141	529	2 884	387	102	142	42	–	79	–	34	–
Legal assistants	62 175	195 977	52 237	172 326	5 713	14 243	429	1 253	2 072	4 272	1 724	3 883
Technicians, n.e.c.	373 145	154 654	307 239	121 839	26 047	18 013	2 141	882	29 403	10 794	8 315	3 126
Sales occupations	**7 334 643**	**7 098 126**	**6 572 300**	**5 990 016**	**364 072**	**667 278**	**27 735**	**44 716**	**212 229**	**208 811**	**158 307**	**187 305**
Supervisors and proprietors, sales occupations, salaried	1 964 716	1 050 658	1 779 842	930 236	82 971	70 321	6 995	5 499	56 068	25 062	38 840	19 540
Supervisors and proprietors, sales occupations, self-employed	285 593	150 494	251 597	132 594	7 335	3 800	1 187	966	20 214	11 075	5 260	2 059
Sales representatives, finance and business services	1 475 043	1 013 597	1 366 193	915 753	58 809	58 061	3 914	3 863	30 232	23 165	15 895	12 755
Insurance sales occupations	431 027	235 515	396 881	205 596	20 043	20 651	1 141	925	8 137	4 542	4 825	3 801
Real estate sales occupations	397 205	404 033	366 785	376 528	13 243	11 495	1 085	1 479	11 557	10 789	4 535	3 742
Securities and financial services sales occupations	214 848	82 700	201 192	73 077	6 481	5 372	339	211	5 374	2 856	1 462	1 184
Advertising and related sales occupations	84 108	89 957	77 234	81 987	4 510	5 153	247	411	1 037	1 266	1 080	1 140
Sales occupations, other business services	347 855	201 392	324 101	178 565	14 532	15 390	1 102	837	4 127	3 712	3 993	2 888
Sales representatives, commodities, except retail	1 220 788	350 644	1 149 656	316 248	31 656	16 055	3 095	1 350	19 350	8 942	17 031	8 049
Sales engineers	41 408	2 208	40 083	2 086	324	50	48	3	738	54	215	15
Sales representatives, mining, manufacturing, and wholesale	1 179 380	348 436	1 109 573	314 162	31 332	16 005	3 047	1 347	18 612	8 888	16 816	8 034
Sales workers, retail and personal services	2 363 574	4 484 707	2 001 906	3 651 482	182 328	516 702	12 437	32 656	86 010	139 680	80 893	144 187
Sales workers, motor vehicles and boats	314 915	37 364	286 770	33 682	16 079	2 052	1 331	238	4 167	752	6 568	640
Sales workers, apparel	82 914	361 663	65 320	305 578	9 119	31 843	290	1 689	4 590	11 512	3 595	11 041
Sales workers, shoes	44 534	73 233	33 833	60 180	6 304	8 374	168	422	1 739	1 939	2 490	2 318
Sales workers, furniture and home furnishings	102 617	84 503	93 147	78 201	4 878	3 450	307	350	1 778	1 310	2 507	1 192
Sales workers, radio, TV, hi-fi, and appliances	122 032	48 840	108 517	43 386	7 010	2 852	451	275	3 521	1 243	2 533	1 084
Sales workers, hardware and building supplies	135 593	39 594	125 353	37 250	5 043	1 076	533	143	1 675	618	2 989	507
Sales workers, parts	118 966	13 127	108 297	11 664	4 732	771	702	152	1 412	198	3 823	342
Sales workers, other commodities	626 278	1 231 579	541 817	1 066 418	40 350	92 882	2 980	6 731	23 005	36 372	18 126	29 176
Sales counter clerks	72 545	137 528	60 264	115 696	5 263	11 284	504	1 023	4 171	5 299	2 343	4 226
Cashiers	596 364	2 259 316	452 965	1 725 368	71 149	346 359	4 379	20 287	36 479	77 490	31 392	89 812
Street and door-to-door sales workers	77 367	153 560	66 273	134 091	6 878	13 416	442	944	1 508	2 313	2 266	2 796
News vendors	69 449	44 400	59 350	39 968	5 523	2 343	350	402	1 965	634	2 261	1 053
Sales related occupations	24 929	48 026	23 106	43 703	973	2 339	107	382	355	887	388	715
Demonstrators, promoters and models, sales	8 317	36 948	7 247	33 740	583	1 790	48	296	230	593	209	529
Auctioneers	7 209	1 163	7 043	1 096	94	55	22	12	18	–	32	–
Sales support occupations, n.e.c.	9 403	9 915	8 816	8 867	296	494	37	74	107	294	147	186
Administrative support occupations, including clerical	**4 482 923**	**15 222 640**	**3 499 712**	**12 677 800**	**608 499**	**1 690 712**	**26 338**	**92 465**	**178 185**	**369 694**	**170 189**	**391 969**
Supervisors, administrative support occupations	406 628	517 698	335 646	425 718	47 362	66 458	2 336	2 738	10 770	11 612	10 514	11 172
Supervisors, general office	214 678	364 947	174 720	298 523	26 631	48 203	1 368	2 126	5 985	7 812	5 974	8 283
Supervisors, computer equipment operators	21 917	12 631	19 146	10 440	1 790	1 617	94	99	568	310	319	165
Supervisors, financial records processing	33 380	77 006	29 369	66 534	2 250	6 641	89	309	1 209	2 157	463	1 365
Chief communications operators	1 720	2 653	1 523	2 183	115	356	9	7	38	61	35	46
Supervisors, distribution, scheduling, and adjusting clerks	134 933	60 461	110 888	48 038	16 576	9 641	776	197	2 970	1 272	3 723	1 313
Computer equipment operators	256 310	410 903	201 021	328 122	33 904	58 772	1 270	2 522	12 767	11 767	7 348	9 720
Computer operators	253 115	407 203	198 683	325 605	33 356	57 962	1 258	2 480	12 652	11 657	7 166	9 499
Peripheral equipment operators	3 195	3 700	2 338	2 517	548	810	12	42	115	110	182	221
Secretaries, stenographers, and typists	97 485	4 663 841	74 086	4 041 838	14 463	410 735	777	27 229	4 872	81 793	3 287	102 246
Secretaries	52 492	3 966 179	41 568	3 504 652	6 763	294 437	436	21 870	2 135	62 929	1 590	82 291
Stenographers	7 563	72 317	6 932	64 404	359	5 302	24	371	158	1 389	90	851
Typists	37 430	625 345	25 586	472 782	7 341	110 996	317	4 988	2 579	17 475	1 607	19 104
Information clerks	230 674	1 347 972	182 940	1 125 309	27 672	136 492	1 731	9 606	11 222	32 622	7 109	43 943
Interviewers	49 781	156 177	38 924	123 428	7 353	22 553	754	1 790	1 264	3 415	1 486	4 991
Hotel clerks	27 005	69 385	21 629	56 816	2 602	7 322	158	617	1 839	2 925	777	1 705
Transportation ticket and reservation agents	79 758	190 193	64 092	162 203	8 590	15 093	352	920	4 449	7 819	2 275	4 158
Receptionists	35 037	787 056	26 338	668 110	5 001	70 286	242	5 336	1 852	15 310	1 604	28 014
Information clerks, n.e.c.	39 093	145 161	31 957	114 752	4 126	21 238	225	943	1 818	3 153	967	5 075

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Table 2. **Detailed Occupation of the Civilian Labor Force by Sex and Race: 1990**—Con.

[Data based on sample and subject to sampling variability, see text. For definitions of terms and meanings of symbols, see text]

United States	All persons		White		Black		American Indian, Eskimo, or Aleut		Asian or Pacific Islander		Other race	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
TECHNICAL, SALES, AND ADMINISTRATIVE SUPPORT OCCUPATIONS—Con.												
Records processing occupations, except financial	192 809	691 402	143 988	538 922	29 630	106 186	1 085	4 393	10 078	20 864	8 028	21 037
Classified-ad clerks	910	4 372	792	3 929	96	297	–	5	5	57	17	84
Correspondence clerks	2 116	10 405	1 689	8 272	347	1 722	–	57	43	199	37	155
Order clerks	64 599	164 523	50 148	129 382	9 187	26 173	359	879	1 862	3 249	3 043	4 840
Personnel clerks, except payroll and timekeeping	11 771	69 122	8 816	55 334	1 877	9 263	89	452	493	2 016	496	2 057
Library clerks	31 965	118 510	23 904	97 125	3 778	13 051	218	885	2 942	4 694	1 123	2 755
File clerks	51 924	216 022	35 088	158 355	10 624	39 994	285	1 531	3 409	7 892	2 518	8 250
Records clerks	29 524	108 448	23 551	86 525	3 721	15 686	134	584	1 324	2 757	794	2 896
Financial records processing occupations	264 608	2 136 921	214 409	1 898 405	25 495	132 795	1 184	11 033	15 375	54 734	8 145	39 954
Bookkeepers, accounting, and auditing clerks	200 750	1 721 202	163 051	1 548 980	18 988	91 236	793	8 772	11 888	43 741	6 030	28 473
Payroll and timekeeping clerks	20 343	159 137	16 086	136 119	2 387	14 851	194	819	1 086	3 503	590	3 845
Billing clerks	15 783	152 693	12 343	130 090	1 831	13 886	77	855	946	3 806	586	4 056
Cost and rate clerks	20 177	58 090	17 169	47 081	1 430	6 719	96	342	785	1 891	697	2 057
Billing, posting, and calculating machine operators	7 555	45 799	5 760	36 135	859	6 103	24	245	670	1 793	242	1 523
Duplicating, mail and other office machine operators	28 348	40 440	19 581	30 166	4 947	7 326	133	304	1 998	1 234	1 689	1 410
Duplicating machine operators	13 018	14 848	8 752	11 217	2 416	2 419	51	134	962	552	837	526
Mail preparing and paper handling machine operators	2 608	3 588	1 871	2 700	358	624	46	16	177	82	156	166
Office machine operators, n.e.c.	12 722	22 004	8 958	16 249	2 173	4 283	36	154	859	600	696	718
Communications equipment operators	33 799	210 316	25 117	159 221	6 264	40 945	217	1 367	740	2 636	1 461	6 147
Telephone operators	29 670	203 587	22 392	153 968	5 146	39 856	210	1 351	618	2 497	1 304	5 915
Communications equipment operators, n.e.c.	4 129	6 729	2 725	5 253	1 118	1 089	7	16	122	139	157	232
Mail and message distributing occupations	646 568	386 709	468 811	267 096	124 218	91 679	3 154	2 484	27 625	14 636	22 760	10 814
Postal clerks, except mail carriers	192 895	157 670	129 371	90 960	45 924	51 834	737	1 166	10 895	9 726	5 968	3 984
Mail carriers, postal service	240 290	87 951	190 955	71 359	33 003	12 688	1 172	461	8 541	1 386	6 619	2 057
Mail clerks, except postal service	105 987	105 722	69 754	75 728	25 643	22 878	582	632	4 792	2 692	5 216	3 792
Messengers	107 396	35 366	78 731	29 049	19 648	4 279	663	225	3 397	832	4 957	981
Material recording, scheduling, and distributing clerks	1 332 268	888 638	1 044 650	727 959	176 417	105 180	8 375	6 469	35 912	20 643	66 914	28 387
Dispatchers	107 747	97 200	94 407	81 793	8 820	11 778	602	892	1 302	1 068	2 616	1 669
Production coordinators	133 509	119 150	116 009	101 234	9 479	10 808	580	821	3 548	3 255	3 893	3 032
Traffic, shipping, and receiving clerks	460 680	187 922	346 053	153 417	69 094	21 214	2 791	1 333	11 750	3 990	30 992	7 968
Stock and inventory clerks	451 459	260 313	344 072	208 018	66 751	34 375	3 241	2 070	15 190	7 197	22 205	8 653
Meter readers	42 565	6 971	33 482	5 868	6 792	841	397	65	348	65	1 546	132
Weighers, measurers, checkers, and samplers	43 126	37 620	33 616	28 893	6 047	5 410	285	401	995	1 026	2 183	1 890
Expediters	82 324	156 465	68 072	131 333	8 446	16 970	429	745	2 299	3 359	3 078	4 058
Material recording, scheduling, and distributing clerks, n.e.c.	10 858	22 997	8 939	17 403	988	3 784	50	142	480	683	401	985
Adjusters and investigators	313 023	826 064	264 546	672 624	30 167	109 126	1 645	4 114	8 852	19 507	7 813	20 693
Insurance adjusters, examiners, and investigators	101 118	243 521	88 915	197 901	7 927	34 802	401	956	2 413	5 619	1 462	4 243
Investigators and adjusters, except insurance	151 592	430 238	127 375	352 656	14 760	53 042	832	2 023	4 687	11 054	3 938	11 463
Eligibility clerks, social welfare	5 150	44 356	3 315	34 323	742	6 988	38	417	608	952	447	1 676
Bill and account collectors	55 163	107 949	44 941	87 744	6 738	14 294	374	718	1 144	1 882	1 966	3 311
Miscellaneous administrative support occupations	680 403	3 101 736	524 917	2 462 420	87 960	425 018	4 431	20 206	37 974	97 646	25 121	96 446
General office clerks	264 538	1 226 578	200 101	972 436	37 456	169 735	1 610	8 240	14 362	38 392	11 009	37 775
Bank tellers	51 882	457 141	38 969	386 074	5 827	41 116	187	1 652	4 194	15 832	2 705	12 467
Proofreaders	7 304	23 022	6 443	20 157	554	1 966	20	71	216	563	71	265
Data-entry keyers	83 043	556 222	58 800	410 633	13 834	101 843	625	3 494	6 186	21 999	3 598	18 253
Statistical clerks	48 733	99 845	39 454	79 961	5 588	14 492	240	632	2 259	2 536	1 192	2 224
Teachers' aides	29 662	245 881	19 813	189 264	4 061	34 298	449	3 070	3 659	4 871	1 680	14 378
Administrative support occupations, n.e.c.	195 241	493 047	161 337	403 895	20 640	61 568	1 300	3 047	7 098	13 453	4 866	11 084
SERVICE OCCUPATIONS												
Private household occupations	**29 077**	**534 841**	**18 036**	**318 944**	**6 386**	**141 562**	**324**	**4 143**	**1 455**	**13 453**	**2 876**	**56 739**
Launderers and ironers	291	1 396	224	973	5	281	–	10	34	57	28	75
Cooks, private household	1 008	8 204	572	4 692	188	2 695	6	54	196	301	46	462
Housekeepers and butlers	2 087	32 329	1 028	15 083	691	10 566	–	247	128	1 357	240	5 076
Child care workers, private household	4 428	159 824	3 563	127 303	476	17 204	88	1 459	92	3 557	209	10 301
Private household cleaners and servants	21 263	333 088	12 649	170 893	5 026	110 816	230	2 373	1 005	8 181	2 353	40 825
Protective service occupations	**1 754 500**	**330 275**	**1 398 416**	**235 787**	**263 779**	**78 464**	**16 733**	**3 208**	**26 243**	**4 069**	**49 329**	**8 747**
Supervisors, protective service occupations	121 044	14 162	103 604	10 119	13 334	3 442	690	105	1 305	137	2 111	359
Supervisors, firefighting and fire prevention occupations	28 466	832	26 559	724	1 188	97	148	–	272	–	299	11
Supervisors, police and detectives	54 159	7 063	47 266	4 893	5 373	1 870	258	49	473	75	789	176
Supervisors, guards	38 419	6 267	29 779	4 502	6 773	1 475	284	56	560	62	1 023	172
Firefighting and fire prevention occupations	233 170	8 316	202 814	6 598	20 485	1 223	3 189	318	2 179	45	4 503	132
Fire inspection and fire prevention occupations	14 407	2 318	12 471	1 767	1 337	448	223	31	145	21	231	51
Firefighting occupations	218 763	5 998	190 343	4 831	19 148	775	2 966	287	2 034	24	4 272	81
Police and detectives	702 475	119 808	584 823	83 139	87 471	31 334	5 805	1 179	7 163	1 072	17 213	3 084
Police and detectives, public service	457 078	62 106	391 884	44 874	45 864	14 261	3 637	592	4 895	682	10 798	1 697
Sheriffs, bailiffs, and other law enforcement officers	95 561	22 871	81 253	17 585	10 569	4 207	803	229	916	249	2 020	601
Correctional institution officers	149 836	34 831	111 686	20 680	31 038	12 866	1 365	358	1 352	141	4 395	786
Guards	697 811	187 989	507 175	135 931	142 489	42 465	7 049	1 606	15 596	2 815	25 502	5 172
Crossing guards	12 818	32 495	10 006	25 230	2 336	6 118	78	153	80	100	318	894
Guards and police, except public service	655 141	130 370	470 830	87 221	138 304	35 307	6 688	1 364	14 890	2 474	24 429	4 004
Protective service occupations, n.e.c.	29 852	25 124	26 339	23 480	1 849	1 040	283	89	626	241	755	274

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Table 2. **Detailed Occupation of the Civilian Labor Force by Sex and Race: 1990**—Con.

[Data based on sample and subject to sampling variability, see text. For definitions of terms and meanings of symbols, see text]

United States	All persons		White		Black		American Indian, Eskimo, or Aleut		Asian or Pacific Islander		Other race	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
SERVICE OCCUPATIONS—Con.												
Service occupations, except protective and household	**5 135 444**	**8 783 420**	**3 562 149**	**6 598 871**	**909 017**	**1 487 081**	**48 526**	**86 307**	**232 863**	**255 441**	**382 889**	**355 720**
Food preparation and service occupations	2 369 276	3 369 682	1 635 500	2 728 296	355 959	387 014	19 643	32 082	153 506	113 173	204 668	109 117
Supervisors, food preparation and service occupations	117 402	159 018	87 242	131 257	15 038	17 067	731	1 245	8 158	5 477	6 233	3 972
Bartenders	166 630	164 080	147 583	153 476	7 822	4 087	1 087	2 003	4 338	2 562	5 800	1 952
Waiters and waitresses	290 768	1 197 485	215 510	1 065 475	26 590	54 091	1 484	9 545	25 769	40 722	21 415	27 652
Cooks	1 085 895	987 365	704 865	709 445	194 282	192 620	9 739	11 854	80 976	32 510	96 033	40 936
Food counter, fountain and related occupations	65 491	170 989	50 075	141 262	8 307	18 025	474	1 520	3 254	4 893	3 381	5 289
Kitchen workers, food preparation	52 183	159 317	39 139	128 481	6 578	20 836	373	1 124	2 154	3 896	3 939	4 980
Waiters'/waitresses' assistants	217 437	161 121	150 003	126 431	29 040	20 990	1 640	1 138	10 421	6 076	26 333	6 486
Miscellaneous food preparation occupations	373 470	370 307	241 083	272 469	68 302	59 298	4 115	3 653	18 436	17 037	41 534	17 850
Health service occupations	287 943	1 974 015	183 551	1 320 287	77 960	522 169	3 300	20 579	11 418	47 082	11 714	63 898
Dental assistants	5 166	174 121	3 402	153 539	731	8 929	28	1 185	619	4 445	386	6 023
Health aides, except nursing	45 064	177 913	28 610	129 933	12 046	37 538	519	1 307	2 261	4 555	1 628	4 580
Nursing aides, orderlies, and attendants	237 713	1 621 981	151 539	1 036 815	65 183	475 702	2 753	18 087	8 538	38 082	9 700	53 295
Cleaning and building service occupations, except household	2 013 354	1 410 347	1 389 282	883 545	406 568	355 036	21 572	17 075	49 521	42 268	146 411	112 423
Supervisors, cleaning and building service workers	117 971	49 504	90 692	32 631	18 732	11 557	1 049	483	1 663	1 653	5 835	3 180
Maids and housemen	137 337	575 452	69 943	332 595	43 399	162 870	1 424	7 961	7 620	22 684	14 951	49 342
Janitors and cleaners	1 700 984	780 561	1 182 001	514 627	337 996	179 734	18 672	8 573	39 322	17 887	122 993	59 740
Elevator operators	9 684	1 727	6 038	900	2 315	712	30	30	230	9	1 071	76
Pest control occupations	47 378	3 103	40 608	2 792	4 126	163	397	28	686	35	1 561	85
Personal service occupations	464 871	2 029 376	353 816	1 666 743	68 530	222 862	4 011	16 571	18 418	52 918	20 096	70 282
Supervisors, personal service occupations	19 313	43 619	15 421	35 677	2 328	5 311	157	377	768	884	639	1 370
Barbers	66 677	17 949	53 818	14 623	9 258	1 711	512	121	959	819	2 130	675
Hairdressers and cosmetologists	76 143	657 433	61 875	558 958	7 869	54 212	447	4 008	2 814	21 188	3 138	19 067
Attendants, amusement and recreation facilities	86 248	50 905	69 856	38 787	8 237	5 371	1 042	1 129	4 102	3 861	3 011	1 757
Guides	19 281	22 005	14 298	17 146	2 605	2 953	179	132	1 635	1 387	564	387
Ushers	19 853	9 758	15 853	7 609	2 461	1 425	70	97	643	288	826	339
Public transportation attendants	21 801	84 148	14 925	70 859	4 573	9 452	94	238	1 248	2 692	961	907
Baggage porters and bellhops	34 558	4 205	21 553	2 590	9 084	1 001	153	15	2 215	329	1 553	270
Welfare service aides	7 871	40 319	5 098	26 671	1 838	10 156	232	696	259	825	444	1 971
Family child care providers	6 234	428 409	5 007	371 144	745	30 681	101	3 242	129	7 265	252	16 077
Early childhood teacher's assistants	14 059	324 869	9 898	257 882	2 976	48 351	152	2 920	377	4 744	656	10 972
Child care workers, n.e.c.	22 932	188 419	15 158	142 874	5 795	31 431	346	2 054	499	3 331	1 134	8 729
Personal service occupations, n.e.c.	69 901	157 338	51 056	121 923	10 761	20 807	526	1 542	2 770	5 305	4 788	7 761
FARMING, FORESTRY, AND FISHING OCCUPATIONS												
Farming, forestry, and fishing occupations	**2 597 829**	**507 566**	**2 124 661**	**416 639**	**175 111**	**28 272**	**26 224**	**4 731**	**35 371**	**9 889**	**236 462**	**48 035**
Farm operators and managers	933 808	153 557	891 311	145 849	16 467	2 597	3 852	838	6 379	1 688	15 799	2 585
Farmers, except horticultural	680 512	114 675	663 580	111 413	6 717	971	2 470	583	3 173	898	4 572	810
Horticultural specialty farmers	31 261	3 471	27 130	3 213	1 711	78	174	27	751	129	1 495	24
Managers, farms, except horticultural	208 114	30 770	188 630	27 098	7 355	1 360	1 162	196	2 153	532	8 814	1 584
Managers, horticultural specialty farms	13 921	4 641	11 971	4 125	684	188	46	32	302	129	918	167
Other agricultural and related occupations	1 466 828	342 587	1 067 544	261 529	140 878	24 567	16 292	3 489	26 006	7 983	216 108	45 019
Farm occupations, except managerial	666 460	175 613	470 727	127 224	50 654	13 287	7 598	1 843	8 814	4 693	128 667	28 566
Supervisors, farm workers	37 273	6 162	27 968	4 459	1 500	664	255	62	788	188	6 762	789
Farm workers	609 123	150 546	428 971	107 563	47 910	11 246	7 167	1 580	7 449	3 692	117 626	26 465
Marine life cultivation workers	879	354	721	297	51	41	43	–	31	–	33	16
Nursery workers	19 185	18 551	13 067	14 905	1 193	1 336	133	201	546	813	4 246	1 296
Related agricultural occupations	800 368	166 974	596 817	134 305	90 224	11 280	8 694	1 646	17 192	3 290	87 441	16 453
Supervisors, related agricultural occupations	60 452	5 155	52 419	4 493	2 776	318	356	83	894	44	4 007	217
Groundskeepers and gardeners, except farm	680 843	54 713	499 846	44 695	81 772	4 928	7 598	710	15 267	1 323	76 360	3 057
Animal caretakers, except farm	40 059	67 146	33 822	64 320	3 410	1 241	499	404	507	492	1 821	689
Graders and sorters, agricultural products	16 695	37 964	8 881	19 472	2 041	4 364	221	432	463	1 350	5 089	12 346
Inspectors, agricultural products	2 319	1 996	1 849	1 325	225	429	20	17	61	81	164	144
Forestry and logging occupations	140 463	7 560	116 869	5 998	15 515	900	3 786	255	418	99	3 875	308
Supervisors, forestry and logging workers	11 529	539	10 309	510	738	18	233	–	30	–	219	11
Forestry workers, except logging	16 858	3 573	13 463	2 850	1 134	306	681	127	99	32	1 481	258
Timber cutting and logging occupations	112 076	3 448	93 097	2 638	13 643	576	2 872	128	289	67	2 175	39
Fishers, hunters, and trappers	56 730	3 862	48 937	3 263	2 251	208	2 294	149	2 568	119	680	123
Captains and other officers, fishing vessels	6 149	192	5 664	171	97	17	156	4	172	–	60	–
Fishers	48 813	3 339	41 774	2 804	2 066	166	2 073	141	2 335	112	565	116
Hunters and trappers	1 768	331	1 499	288	88	25	65	4	61	7	55	7
PRECISION PRODUCTION, CRAFT, AND REPAIR OCCUPATIONS												
Precision production, craft, and repair occupations	**12 701 437**	**1 329 863**	**10 961 761**	**1 021 711**	**889 906**	**161 808**	**104 169**	**12 127**	**218 887**	**69 092**	**526 714**	**65 125**
Mechanics and repairers	4 085 908	185 258	3 558 276	146 148	284 567	27 182	28 823	1 452	73 000	4 755	141 242	5 721
Supervisors, mechanics and repairers	247 901	22 681	227 602	18 103	11 805	3 695	1 139	143	3 129	386	4 226	354
Mechanics and repairers, except supervisors	3 838 007	162 577	3 330 674	128 045	272 762	23 487	27 684	1 309	69 871	4 369	137 016	5 367
Vehicle and mobile equipment mechanics and repairers	1 829 964	35 714	1 576 258	28 298	130 544	5 025	13 855	323	33 748	711	75 559	1 357
Automobile mechanics, except apprentices	936 977	17 646	795 669	14 094	73 175	2 332	6 992	169	19 473	298	41 668	753
Automobile mechanic apprentices	1 531	60	1 260	60	167	–	14	–	29	–	61	–
Bus, truck, and stationary engine mechanics	263 806	2 336	231 495	1 660	19 005	504	2 060	27	2 711	30	8 535	115
Aircraft engine mechanics	129 256	5 416	110 442	4 193	9 867	805	975	45	4 161	177	3 811	196
Small engine repairers	60 914	1 108	55 497	855	2 789	199	590	7	592	22	1 446	25
Automobile body and related repairers	223 991	4 719	191 400	4 028	13 352	482	1 445	29	3 834	39	13 960	141
Aircraft mechanics, except engine	29 437	2 377	24 338	1 791	2 579	421	214	43	1 271	95	1 035	27
Heavy equipment mechanics	155 764	1 731	140 073	1 373	8 641	249	1 441	3	1 478	29	4 131	77
Farm equipment mechanics	28 288	321	26 084	244	969	33	124	–	199	21	912	23
Industrial machinery repairers	318 984	13 795	280 212	10 949	22 581	1 839	1 947	96	4 233	335	10 011	576
Machinery maintenance occupations	24 140	1 133	20 169	865	2 649	181	419	2	217	27	686	58

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Table 2. **Detailed Occupation of the Civilian Labor Force by Sex and Race: 1990**—Con.

[Data based on sample and subject to sampling variability, see text. For definitions of terms and meanings of symbols, see text]

United States	All persons		White		Black		American Indian, Eskimo, or Aleut		Asian or Pacific Islander		Other race	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
PRECISION PRODUCTION, CRAFT, AND REPAIR OCCUPATIONS—Con.												
Electrical and electronic equipment repairers	573 064	62 461	499 345	48 270	42 274	9 884	3 520	511	13 585	1 980	14 340	1 816
Electronic repairers, communications and industrial equipment	164 678	14 551	140 835	11 622	13 180	1 827	1 057	132	4 955	548	4 651	422
Data processing equipment repairers	79 736	11 921	68 900	9 523	5 881	1 405	364	69	2 884	552	1 707	372
Household appliance and power tool repairers	50 935	2 190	45 538	1 791	2 612	238	330	11	1 020	58	1 435	92
Telephone line installers and repairers	47 211	3 422	42 328	2 529	2 899	523	346	44	486	143	1 152	183
Telephone installers and repairers	164 418	26 509	144 871	20 033	12 730	5 236	925	154	2 573	537	3 319	549
Miscellaneous electrical and electronic equipment repairers	66 086	3 868	56 873	2 772	4 972	655	498	101	1 667	142	2 076	198
Heating, air conditioning, and refrigeration mechanics	190 412	2 571	171 999	2 068	9 438	410	1 298	18	2 510	25	5 167	50
Miscellaneous mechanics and repairers	901 443	46 903	782 691	37 595	65 276	6 148	6 645	359	15 578	1 291	31 253	1 510
Camera, watch, and musical instrument repairers	27 311	3 786	24 615	3 093	875	356	72	22	1 161	212	588	103
Locksmiths and safe repairers	25 360	1 777	22 943	1 608	1 258	85	183	27	361	27	615	30
Office machine repairers	39 540	2 348	34 232	1 874	3 026	296	200	–	1 065	96	1 017	82
Mechanical controls and valve repairers	19 393	1 015	16 018	736	2 332	239	102	20	204	16	737	4
Elevator installers and repairers	25 207	427	22 910	339	1 215	72	151	–	310	–	621	16
Millwrights	92 874	3 266	85 929	2 678	4 725	408	524	52	467	43	1 229	85
Specified mechanics and repairers, n.e.c.	199 247	14 702	174 158	11 760	13 358	1 991	1 555	93	3 693	392	6 483	466
Not specified mechanics and repairers	472 511	19 582	401 886	15 507	38 487	2 701	3 858	145	8 317	505	19 963	724
Construction trades	5 170 054	147 946	4 467 953	123 701	359 970	14 519	51 156	1 972	58 203	2 385	232 772	5 369
Supervisors, construction occupations	815 303	22 697	739 924	19 374	38 822	2 229	5 653	206	8 360	348	22 544	540
Supervisors, brickmasons, stonemasons, and tile setters	12 880	88	11 053	62	1 168	9	89	–	150	8	420	9
Supervisors, carpenters and related workers	45 096	529	41 867	464	995	28	355	16	573	–	1 306	21
Supervisors, electricians and power transmission installers	71 958	1 598	67 139	1 408	2 533	114	326	11	823	34	1 137	31
Supervisors, painters, paperhangers, and plasterers	30 759	1 610	26 819	1 424	1 986	117	339	11	438	26	1 177	32
Supervisors, plumbers, pipefitters, and steamfitters	20 103	415	18 631	380	764	19	142	16	202	–	364	–
Supervisors, construction n.e.c.	634 507	18 457	574 415	15 636	31 376	1 942	4 402	152	6 174	280	18 140	447
Construction trades, except supervisors	4 354 751	125 249	3 728 029	104 327	321 148	12 290	45 503	1 766	49 843	2 037	210 228	4 829
Brickmasons and stonemasons, except apprentices	194 480	2 459	153 093	1 693	28 581	621	1 601	24	1 521	3	9 684	118
Brickmason and stonemason apprentices	685	42	564	37	89	5	–	–	8	–	24	–
Tile setters, hard and soft	54 356	1 286	46 153	1 102	3 102	61	382	–	923	33	3 796	90
Carpet installers	109 426	2 410	95 030	2 033	6 314	186	967	34	743	29	6 372	128
Carpenters, except apprentices	1 337 544	23 163	1 187 316	19 700	67 358	1 952	14 580	366	14 399	305	53 891	840
Carpenter apprentices	4 600	253	3 975	150	224	77	57	22	157	4	187	–
Drywall installers	146 761	3 793	122 183	3 259	9 174	307	2 751	101	1 116	–	11 537	126
Electricians, except apprentices	619 358	15 659	554 075	12 322	36 069	2 121	4 187	207	9 759	464	15 268	545
Electrician apprentices	14 888	684	13 389	587	897	75	138	7	145	–	319	15
Electrical power installers and repairers	118 543	1 689	104 837	1 425	9 819	189	1 167	11	607	28	2 113	36
Painters, construction and maintenance	515 697	43 329	413 037	37 571	48 231	2 747	4 821	527	9 129	790	40 479	1 694
Paperhangers	12 811	4 399	11 869	4 254	302	49	87	32	170	22	383	42
Plasterers	42 260	849	30 531	613	5 569	142	375	16	362	–	5 423	78
Plumbers, pipefitters, and steamfitters, except apprentices	481 639	7 219	421 671	5 934	33 835	855	4 528	64	5 024	98	16 581	268
Plumber, pipefitter, and steamfitter apprentices	6 426	153	5 760	134	335	19	52	–	107	–	172	–
Concrete and terrazzo finishers	74 944	1 001	50 786	524	15 102	334	944	14	418	–	7 694	129
Glaziers	43 142	2 453	38 900	2 014	1 826	299	246	35	476	74	1 694	31
Insulation workers	71 460	2 952	56 306	2 067	7 489	637	906	75	862	16	5 897	157
Paving, surfacing, and tamping equipment operators	12 777	333	10 067	254	1 833	71	138	–	70	–	669	8
Roofers	194 098	3 085	156 118	2 385	18 629	437	3 025	90	1 509	8	14 817	165
Sheetmetal duct installers	29 541	421	26 971	341	1 474	37	200	10	157	7	739	26
Structural metal workers	73 885	1 453	65 528	1 158	4 090	198	1 309	21	681	21	2 277	55
Drillers, earth	19 983	508	17 974	408	909	69	317	6	89	–	694	25
Construction trades, n.e.c.	175 447	5 656	141 896	4 362	19 897	802	2 725	104	1 411	135	9 518	253
Extractive occupations	187 451	5 411	169 406	4 496	7 987	548	2 352	98	662	39	7 044	230
Supervisors, extractive occupations	47 578	1 741	44 545	1 532	1 246	150	412	7	285	21	1 090	31
Drillers, oil well	36 539	533	32 266	503	1 686	8	700	18	69	–	1 818	4
Explosives workers	8 872	505	7 679	347	718	74	190	28	28	–	257	56
Mining machine operators	60 613	1 705	55 494	1 399	2 684	189	588	31	212	18	1 635	68
Mining occupations, n.e.c.	33 849	927	29 422	715	1 653	127	462	14	68	–	2 244	71
Precision production occupations	3 258 024	991 248	2 766 126	747 366	237 382	119 559	21 838	8 605	87 022	61 913	145 656	53 805
Supervisors, production occupations	1 069 504	230 133	930 804	186 170	78 945	25 297	5 514	1 543	17 491	6 337	36 750	10 786
Precision metal working occupations	973 211	79 163	854 907	59 872	54 434	9 881	7 150	1 748	22 894	3 145	33 826	4 517
Tool and die makers, except apprentices	139 502	3 312	132 233	2 662	3 486	331	455	12	1 260	162	2 068	145
Tool and die maker apprentices	2 267	109	2 177	91	40	9	20	9	10	–	20	–
Precision assemblers, metal	31 912	9 047	24 880	5 583	3 669	1 937	251	109	1 090	629	2 022	789
Machinists, except apprentices	543 172	25 909	473 997	19 342	32 840	4 231	3 341	260	13 971	553	19 023	1 523
Machinist apprentices	1 436	107	1 288	81	57	18	11	2	39	–	41	6
Boilermakers	23 706	587	20 545	460	2 114	106	252	13	149	–	646	8
Precision grinders, filers, and tool sharpeners	21 378	1 691	19 745	1 435	799	201	169	–	197	31	468	24
Patternmakers and model makers, metal	5 177	265	4 914	225	169	30	12	–	23	10	59	–
Lay-out workers	14 834	2 153	12 036	1 638	2 056	356	165	31	312	83	265	45
Precious stones and metals workers (Jewelers)	40 995	20 835	31 535	15 840	1 530	1 026	1 532	1 194	2 614	1 289	3 784	1 486
Engravers, metal	10 659	6 499	9 583	5 804	442	347	44	25	235	144	355	179
Sheet metal workers, except apprentices	135 431	8 060	119 610	6 208	7 039	1 216	866	93	2 947	231	4 969	312
Sheet metal worker apprentices	865	86	725	60	58	26	11	–	14	–	57	–
Miscellaneous precision metal workers	1 877	503	1 639	443	135	47	21	–	33	13	49	–
Precision woodworking occupations	97 016	13 643	84 780	11 342	5 137	1 782	698	93	1 174	94	5 227	332
Patternmakers and model makers, wood	2 976	323	2 765	267	82	48	10	–	31	8	88	–
Cabinet makers and bench carpenters	67 251	4 620	60 235	4 087	2 814	354	490	11	747	35	2 965	133
Furniture and wood finishers	25 035	8 396	20 293	6 748	2 107	1 354	154	52	372	51	2 109	191
Miscellaneous precision woodworkers	1 754	304	1 487	240	134	26	44	30	24	–	65	8
Precision textile, apparel, and furnishings machine workers	119 539	152 981	88 215	111 851	11 420	15 147	732	965	6 128	15 943	13 044	9 075
Dressmakers	6 421	90 837	4 080	65 085	612	8 976	51	651	793	10 317	885	5 808
Tailors	29 538	27 269	19 321	18 640	3 479	2 969	74	90	2 728	3 980	3 936	1 590
Upholsterers	57 167	16 771	45 298	14 406	4 567	1 417	409	126	767	166	6 126	656
Shoe repairers	20 178	7 850	14 506	6 321	2 188	724	135	50	1 634	404	1 715	351
Miscellaneous precision apparel and fabric workers	6 235	10 254	5 010	7 399	574	1 061	63	48	206	1 076	382	670

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Table 2. **Detailed Occupation of the Civilian Labor Force by Sex and Race: 1990**—Con.

[Data based on sample and subject to sampling variability, see text. For definitions of terms and meanings of symbols, see text]

United States	All persons		White		Black		American Indian, Eskimo, or Aleut		Asian or Pacific Islander		Other race	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
PRECISION PRODUCTION, CRAFT, AND REPAIR OCCUPATIONS—Con.												
Precision workers, assorted materials	265 293	303 078	207 154	219 454	21 277	34 842	1 717	2 257	18 778	28 376	16 367	18 149
Hand molders and shapers, except jewelers	16 892	3 165	14 521	2 548	902	245	138	54	204	109	1 127	209
Patternmakers, lay-out workers, and cutters	17 388	5 502	16 033	3 815	525	438	84	9	371	855	375	385
Optical goods workers	33 171	41 736	28 623	35 947	1 902	2 816	162	220	1 289	1 544	1 195	1 209
Dental laboratory and medical appliance technicians	34 394	22 570	28 002	18 928	2 033	1 597	228	111	2 725	1 351	1 406	583
Bookbinders	13 964	15 969	11 672	12 065	1 295	2 384	89	69	321	486	587	965
Electrical and electronic equipment assemblers	104 105	205 301	71 287	139 131	11 467	26 428	756	1 732	12 288	23 803	8 307	14 207
Miscellaneous precision workers, n.e.c.	45 379	8 835	37 016	7 020	3 153	934	260	62	1 580	228	3 370	591
Precision food production occupations	331 632	160 280	252 887	118 237	33 754	25 340	2 680	1 486	11 541	6 031	30 770	9 186
Butchers and meat cutters	224 107	54 795	175 798	32 583	20 576	14 914	1 889	702	6 405	2 694	19 439	3 902
Bakers	86 076	73 096	60 847	59 317	10 980	8 108	650	513	4 575	2 330	9 024	2 828
Food batchmakers	21 449	32 389	16 242	26 337	2 198	2 318	141	271	561	1 007	2 307	2 456
Precision inspectors, testers, and related workers	105 820	34 835	90 773	26 722	7 914	4 777	596	283	3 616	1 651	2 921	1 402
Inspectors, testers, and graders	99 861	32 044	85 543	24 677	7 610	4 304	549	265	3 401	1 592	2 758	1 206
Adjusters and calibrators	5 959	2 791	5 230	2 045	304	473	47	18	215	59	163	196
Plant and system operators	296 009	17 135	256 606	13 718	24 501	2 493	2 751	230	5 400	336	6 751	358
Water and sewage treatment plant operators	58 174	3 095	50 694	2 488	5 217	477	590	50	530	54	1 143	26
Power plant operators	34 759	2 253	30 855	1 789	2 433	348	460	62	364	26	647	28
Stationary engineers	153 639	7 602	133 849	6 040	11 851	1 033	1 210	97	3 856	225	2 873	207
Miscellaneous plant and system operators	49 437	4 185	41 208	3 401	5 000	635	491	21	650	31	2 088	97
OPERATORS, FABRICATORS, AND LABORERS												
Machine operators, assemblers, and inspectors	**5 185 397**	**3 450 107**	**4 010 589**	**2 409 029**	**650 217**	**613 409**	**41 280**	**29 108**	**129 919**	**154 596**	**353 392**	**243 965**
Machine operators and tenders, except precision	3 176 768	2 231 958	2 440 824	1 542 439	407 108	406 917	23 265	18 322	78 163	102 768	227 408	161 512
Metal working and plastic working machine operators	317 227	70 805	265 805	56 614	29 244	9 543	2 029	592	4 274	1 036	15 875	3 020
Lathe and turning machine set-up operators	26 770	2 690	23 375	2 222	1 843	337	102	7	339	25	1 111	99
Lathe and turning machine operators	32 088	4 442	28 829	3 728	1 663	477	188	19	494	84	914	134
Milling and planing machine operators	5 806	983	5 141	784	331	129	31	15	168	22	135	33
Punching and stamping press machine operators	79 351	31 115	65 212	24 989	8 523	4 314	607	287	883	281	4 126	1 244
Rolling machine operators	11 767	1 976	10 088	1 531	1 218	339	53	15	70	13	338	78
Drilling and boring machine operators	17 201	4 375	15 225	3 540	1 236	558	83	50	141	31	516	196
Grinding, abrading, buffing, and polishing machine operators	105 876	19 582	85 145	15 311	10 924	2 611	769	170	1 674	440	7 364	1 050
Forging machine operators	16 076	970	13 534	803	1 715	122	81	–	164	14	582	31
Numerical control machine operators	1 363	273	1 158	212	85	24	–	–	43	37	77	–
Miscellaneous metal, plastic, stone, and glass working machine operators	20 929	4 399	18 098	3 494	1 706	632	115	29	298	89	712	155
Fabricating machine operators, n.e.c.	18 127	8 535	14 123	6 612	2 053	1 284	86	45	414	251	1 451	343
Metal and plastic processing machine operators	132 690	29 677	106 071	23 526	14 141	4 043	1 030	222	2 078	538	9 370	1 348
Molding and casting machine operators	68 281	21 187	56 081	16 868	6 980	2 907	535	133	812	353	3 873	926
Metal plating machine operators	31 109	4 288	23 291	3 345	3 130	482	253	50	861	111	3 574	300
Heat treating equipment operators	17 323	1 220	14 848	897	1 747	266	67	2	106	30	555	25
Miscellaneous metal and plastic processing machine operators	15 977	2 982	11 851	2 416	2 284	388	175	37	299	44	1 368	97
Woodworking machine operators	132 205	23 432	110 177	18 912	13 578	2 851	1 884	291	1 212	329	5 354	1 049
Wood lathe, routing, and planing machine operators	7 157	1 054	6 286	875	518	135	104	29	66	8	183	7
Sawing machine operators	82 788	12 117	68 025	9 532	9 708	1 494	1 304	140	617	248	3 134	703
Shaping and joining machine operators	4 180	1 864	3 560	1 578	283	218	88	15	34	12	215	41
Nailing and tacking machine operators	2 345	874	1 810	709	256	105	40	12	33	–	206	48
Miscellaneous woodworking machine operators	35 735	7 523	30 496	6 218	2 813	899	348	95	462	61	1 616	250
Printing machine operators	374 529	157 616	319 274	136 407	28 546	12 581	1 914	881	9 232	3 162	15 563	4 585
Printing press operators	293 657	66 124	246 964	54 289	24 369	7 384	1 549	397	7 419	1 471	13 356	2 583
Photoengravers and lithographers	35 861	13 245	32 822	11 717	1 426	907	136	81	639	219	838	321
Typesetters and compositors	21 641	50 712	19 409	46 729	977	2 166	100	215	719	877	436	725
Miscellaneous printing machine operators	23 370	27 535	20 079	23 672	1 774	2 124	129	188	455	595	933	956
Textile, apparel, and furnishings machine operators	341 153	1 076 419	223 456	696 541	62 062	221 436	2 267	9 466	17 477	69 431	35 891	79 545
Winding and twisting machine operators	19 579	51 041	14 383	34 262	4 601	15 532	113	397	242	526	240	324
Knitting, looping, taping, and weaving machine operators	21 250	38 973	14 950	27 543	4 636	9 431	223	439	317	916	1 124	644
Textile cutting machine operators	4 549	3 290	3 146	2 349	906	629	33	25	103	51	361	236
Textile sewing machine operators	93 074	690 725	52 638	444 232	15 754	125 412	614	5 856	5 603	57 602	18 465	57 623
Shoe machine operators	10 052	24 192	8 552	21 448	788	1 777	66	115	100	166	546	686
Pressing machine operators	54 543	93 868	34 959	54 512	9 754	27 898	352	729	4 337	2 661	5 141	8 068
Laundering and dry cleaning machine operators	82 729	136 368	53 755	85 643	15 131	31 624	520	1 437	6 061	6 976	7 262	10 688
Miscellaneous textile machine operators	55 377	37 962	41 073	26 552	10 492	9 133	346	468	714	533	2 752	1 276
Machine operators, assorted materials	1 860 837	865 474	1 401 918	603 827	257 484	155 179	14 055	6 825	43 476	28 021	143 904	71 622
Cementing and gluing machine operators	20 070	12 316	13 892	9 361	3 609	1 866	268	124	286	215	2 015	750
Packaging and filling machine operators	112 546	168 699	75 018	109 690	20 177	32 977	952	1 217	3 545	6 047	12 854	18 768
Extruding and forming machine operators	23 668	4 233	20 064	3 586	2 278	431	189	12	294	54	843	150
Mixing and blending machine operators	97 976	13 165	71 871	9 502	17 988	2 425	725	98	1 629	442	5 763	698
Separating, filtering, and clarifying machine operators	61 822	7 808	50 581	5 755	7 461	1 424	381	85	857	58	2 542	486
Compressing and compacting machine operators	17 356	4 997	13 639	3 542	2 492	1 062	150	65	241	38	834	290
Painting and paint spraying machine operators	116 325	19 852	90 444	15 179	12 104	3 069	841	189	1 877	405	11 059	1 010
Roasting and baking machine operators, food	3 796	952	2 946	646	534	238	44	3	13	6	259	59
Washing, cleaning, and pickling machine operators	7 229	3 209	5 596	2 346	867	523	100	35	93	67	573	238
Folding machine operators	6 699	13 730	5 365	9 336	689	3 110	34	95	146	346	465	843
Furnace, kiln, and oven operators, except food	90 357	5 919	74 450	4 495	11 753	1 045	773	99	689	107	2 692	173
Crushing and grinding machine operators	36 554	8 653	29 460	6 543	4 147	1 507	450	121	397	122	2 100	360
Slicing and cutting machine operators	133 879	54 070	100 968	37 221	16 674	9 354	1 293	513	2 603	1 813	12 341	5 169
Motion picture projectionists	8 811	1 546	8 037	1 351	424	69	13	8	126	71	211	47
Photographic process machine operators	49 210	52 729	39 242	44 158	4 567	4 661	331	430	2 781	1 934	2 289	1 546
Miscellaneous machine operators, n.e.c.	411 563	199 707	306 401	137 296	57 755	38 152	3 001	1 702	10 980	6 324	33 426	16 233
Manufacturing, nondurable goods	164 760	72 060	123 429	48 413	25 694	14 873	1 178	597	3 489	2 091	10 970	6 086
Manufacturing, durable goods	189 490	87 622	139 691	59 423	24 531	16 205	1 278	769	5 831	3 115	18 159	8 110
Nonmanufacturing industries	57 313	40 025	43 281	29 460	7 530	7 074	545	336	1 660	1 118	4 297	2 037
Machine operators, not specified	662 976	293 889	493 944	203 820	93 965	53 266	4 510	2 029	16 919	9 972	53 638	24 802
Manufacturing, nondurable goods	190 549	118 677	139 333	82 800	30 425	21 994	1 122	729	4 301	3 586	15 368	9 568
Manufacturing, durable goods	314 293	125 191	236 484	87 544	41 552	21 405	2 060	844	8 558	4 597	25 639	10 801
Nonmanufacturing industries	158 134	50 021	118 127	33 476	21 988	9 867	1 328	456	4 060	1 789	12 631	4 433

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Table 2. **Detailed Occupation of the Civilian Labor Force by Sex and Race: 1990**—Con.

[Data based on sample and subject to sampling variability, see text. For definitions of terms and meanings of symbols, see text]

United States	All persons		White		Black		American Indian, Eskimo, or Aleut		Asian or Pacific Islander		Other race	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
OPERATORS, FABRICATORS, AND LABORERS—Con.												
Fabricators, assemblers, and hand working occupations	1 611 743	780 910	1 250 097	552 806	199 453	132 456	15 282	6 982	38 596	35 464	108 315	53 202
Welders and cutters	613 596	30 382	509 701	22 305	52 709	5 362	7 160	399	8 763	488	35 263	1 828
Solderers and brazers	9 320	18 917	6 427	14 270	774	1 957	74	206	572	1 155	1 473	1 329
Assemblers	892 566	681 413	657 962	477 728	136 189	118 290	7 103	5 782	26 863	32 222	64 449	47 391
Hand cutting and trimming occupations	10 378	6 127	7 145	3 280	1 434	1 805	160	92	420	495	1 219	455
Hand molding, casting, and forming occupations	18 792	7 617	15 252	6 180	1 721	782	143	68	307	208	1 369	379
Hand painting, coating, and decorating occupations	30 865	14 193	25 187	11 929	2 702	1 162	352	169	625	299	1 999	634
Hand engraving and printing occupations	8 417	6 437	7 051	5 672	518	425	52	46	252	84	544	210
Miscellaneous hand working occupations	27 809	15 824	21 372	11 442	3 406	2 673	238	220	794	513	1 999	976
Production inspectors, testers, samplers, and weighers	396 886	437 239	319 668	313 784	43 656	74 036	2 733	3 804	13 160	16 364	17 669	29 251
Production inspectors, checkers, and examiners	294 026	330 982	243 073	245 360	29 582	55 522	1 816	2 701	9 003	11 604	10 552	15 795
Production testers	40 360	19 784	33 037	14 795	3 334	2 548	175	162	2 605	1 537	1 209	742
Production samplers and weighers	5 285	5 505	4 229	3 717	588	611	34	30	88	275	346	872
Graders and sorters, except agricultural	57 215	80 968	39 329	49 912	10 152	15 355	708	911	1 464	2 948	5 562	11 842
Transportation and material moving occupations	**4 594 570**	**504 404**	**3 688 936**	**403 213**	**619 826**	**78 477**	**39 849**	**5 880**	**57 671**	**4 499**	**188 288**	**12 335**
Motor vehicle operators	3 392 948	444 959	2 700 059	358 534	478 493	67 920	26 335	5 035	48 038	3 711	140 023	9 759
Supervisors, motor vehicle operators	67 709	12 642	57 179	10 554	7 363	1 623	368	101	945	126	1 854	238
Truck drivers	2 733 620	175 332	2 231 097	146 749	342 492	20 000	21 247	2 181	28 904	1 977	109 880	4 425
Driver-sales workers	128 937	14 416	115 304	12 926	7 962	866	561	138	1 685	145	3 425	341
Bus drivers	232 404	215 166	153 172	168 370	65 375	40 000	2 492	2 211	3 328	905	8 037	3 680
Taxicab drivers and chauffeurs	184 894	22 439	115 421	16 609	44 877	4 393	1 398	324	11 056	271	12 142	842
Parking lot attendants	41 776	4 783	25 315	3 188	9 804	1 000	219	75	2 085	287	4 353	233
Motor transportation occupations, n.e.c.	3 608	181	2 571	138	620	38	50	5	35	–	332	–
Transportation occupations, except motor vehicles	183 732	7 375	163 262	5 459	15 394	1 459	1 384	126	1 549	165	2 143	166
Rail transportation occupations	117 319	4 527	103 383	3 174	11 241	1 082	620	66	549	104	1 526	101
Railroad conductors and yardmasters	35 140	2 433	31 819	1 682	2 540	575	130	39	286	62	365	75
Locomotive operating occupations	44 744	1 222	38 790	892	4 937	248	259	27	164	42	594	13
Railroad brake, signal, and switch operators	32 689	570	28 685	460	3 229	97	174	–	80	–	521	13
Rail vehicle operators, n.e.c.	4 746	302	4 089	140	535	162	57	–	19	–	46	–
Water transportation occupations	66 413	2 848	59 879	2 285	4 153	377	764	60	1 000	61	617	65
Ship captains and mates, except fishing boats	31 956	1 041	30 266	933	796	81	396	–	370	19	128	8
Sailors and deckhands	24 992	953	21 040	763	2 702	104	264	29	543	27	443	30
Marine engineers	4 103	49	3 791	40	199	9	23	–	60	–	30	–
Bridge, lock, and lighthouse tenders	5 362	805	4 782	549	456	183	81	31	27	15	16	27
Material moving equipment operators	1 017 890	52 070	825 615	39 220	125 939	9 098	12 130	719	8 084	623	46 122	2 410
Supervisors, material moving equipment operators	22 365	1 438	19 601	1 212	1 801	168	173	18	180	40	610	–
Operating engineers	236 996	4 816	207 961	3 615	16 574	722	3 635	161	1 771	121	7 055	197
Longshore equipment operators	4 331	72	2 765	72	1 226	–	83	–	100	–	157	–
Hoist and winch operators	19 831	469	16 772	347	1 256	106	372	–	91	–	1 340	16
Crane and tower operators	79 850	1 975	65 896	1 419	10 459	458	726	7	571	40	2 198	51
Excavating and loading machine operators	94 408	1 575	85 614	1 321	5 271	187	1 098	13	365	12	2 060	42
Grader, dozer, and scraper operators	63 758	1 122	57 434	939	4 042	114	921	39	284	–	1 077	30
Industrial truck and tractor equipment operators	414 030	27 829	302 370	21 230	75 212	5 125	4 098	354	3 993	252	28 357	868
Miscellaneous material moving equipment operators	82 321	12 774	67 202	9 065	10 098	2 218	1 024	127	729	158	3 268	1 206
Handlers, equipment cleaners, helpers, and laborers	**4 203 264**	**1 038 920**	**3 165 746**	**781 600**	**635 951**	**156 137**	**44 826**	**10 002**	**70 799**	**27 462**	**285 942**	**63 719**
Supervisors, handlers, equipment cleaners, and laborers, n.e.c.	13 990	1 678	10 645	1 238	2 044	350	106	25	377	35	818	30
Helpers, mechanics, and repairers	20 613	1 258	15 499	967	2 489	143	277	48	430	28	1 918	72
Helpers, construction, and extractive occupations	88 032	4 680	68 488	3 967	10 244	460	1 019	64	918	34	7 363	155
Helpers, construction trades	81 768	3 836	62 923	3 209	9 845	417	916	45	884	27	7 200	138
Helpers, surveyor	4 221	454	3 863	387	180	43	62	10	34	7	82	7
Helpers, extractive occupations	2 043	390	1 702	371	219	–	41	9	–	–	81	10
Construction laborers	1 103 482	46 298	832 692	35 711	148 861	6 355	14 423	912	12 347	618	95 159	2 702
Production helpers	29 835	8 148	21 019	5 683	4 355	1 254	342	92	847	460	3 272	659
Freight, stock, and material handlers	1 364 524	397 396	1 043 020	320 214	221 369	51 004	11 731	3 418	25 357	8 763	63 047	13 997
Garbage collectors	57 407	2 502	35 065	1 516	18 194	790	614	46	390	23	3 144	127
Stevedores	11 133	350	6 741	224	3 360	92	181	6	322	–	529	28
Stock handlers and baggers	726 754	303 608	582 295	251 561	92 378	32 234	5 341	2 583	16 960	7 078	29 780	10 152
Machine feeders and offbearers	56 986	30 223	42 745	21 921	10 114	6 054	630	262	861	602	2 636	1 384
Freight, stock, and material handlers, n.e.c.	512 244	60 713	376 174	44 992	97 323	11 834	4 965	521	6 824	1 060	26 958	2 306
Garage and service station related occupations	241 429	28 798	199 454	24 396	24 514	2 615	2 421	354	5 111	567	9 929	866
Vehicle washers and equipment cleaners	203 731	28 785	141 481	20 305	39 818	5 416	1 734	386	3 044	849	17 654	1 829
Hand packers and packagers	130 183	238 158	84 657	167 278	23 169	37 636	1 078	1 826	4 137	7 717	17 142	23 701
Laborers, except construction	1 007 445	283 721	748 791	201 841	159 088	50 904	11 695	2 877	18 231	8 391	69 640	19 708
Manufacturing, nondurable goods	156 302	74 247	112 411	50 565	26 883	15 187	1 320	633	3 135	2 199	12 553	5 663
Manufacturing, durable goods	238 225	69 630	183 146	52 229	33 607	10 501	2 103	604	3 060	1 696	16 309	4 600
Transportation, communications, and other public utilities	119 224	14 387	85 363	9 315	23 150	3 609	1 724	311	1 610	345	7 377	807
Wholesale and retail trade	278 875	69 948	215 745	51 876	36 421	10 462	2 495	483	6 500	2 435	17 714	4 692
All other industries	214 819	55 509	152 126	37 856	39 027	11 145	4 053	846	3 926	1 716	15 687	3 946
EXPERIENCED UNEMPLOYED NOT CLASSIFIED BY OCCUPATION												
Unemployed, no recent civilian work experience	445 737	554 214	233 019	299 484	145 307	173 957	8 295	8 617	16 894	21 411	42 222	50 745

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Table 3. Educational Attainment of the Civilian Labor Force by Age, Sex, Race, and Hispanic Origin: 1990

[Data based on sample and subject to sampling variability, see text. For definitions of terms and meanings of symbols, see text]

United States	All persons		Hispanic origin (of any race)		Not of Hispanic origin									
					White		Black		American Indian, Eskimo, or Aleut		Asian or Pacific Islander		Other race	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Civilian labor force 16 years and over	**66 986 201**	**56 487 249**	**5 888 180**	**4 133 543**	**52 652 638**	**43 590 483**	**6 108 277**	**6 727 324**	**426 376**	**365 896**	**1 864 689**	**1 631 072**	**46 041**	**38 931**
Not high school graduate	13 594 875	9 044 223	2 881 037	1 582 557	8 454 569	5 541 218	1 828 444	1 528 158	124 335	85 216	290 890	295 426	15 600	11 648
High school graduate (includes equivalency)	19 142 416	17 580 312	1 302 899	1 069 908	15 424 300	13 994 802	1 951 237	2 070 712	137 479	116 946	314 786	317 916	11 715	10 028
Some college or associate degree	18 382 602	17 990 928	1 178 798	1 071 662	14 986 616	14 164 840	1 600 233	2 173 092	121 297	125 448	483 808	444 251	11 850	11 635
Bachelor's degree	10 031 399	8 122 857	332 936	283 105	8 745 491	6 747 387	493 306	652 021	28 017	26 139	427 462	410 367	4 187	3 838
Graduate or professional degree	5 834 909	3 748 929	192 510	126 311	5 041 662	3 142 236	235 057	303 341	15 248	12 147	347 743	163 112	2 689	1 782
Civilian labor force 16 to 19 years	**3 632 960**	**3 421 941**	**425 295**	**316 429**	**2 706 332**	**2 599 456**	**385 022**	**396 725**	**28 289**	**25 424**	**83 947**	**79 899**	**4 075**	**4 008**
Not high school graduate	2 275 324	1 814 905	305 613	189 632	1 649 246	1 358 427	251 815	210 382	18 986	14 607	46 822	39 514	2 842	2 343
High school graduate (includes equivalency)	785 302	819 914	79 139	73 284	592 658	616 081	87 776	104 655	6 119	6 361	18 852	18 662	758	871
Some college or associate degree	569 853	784 526	40 207	53 165	462 770	623 261	45 279	81 355	3 173	4 446	17 949	21 507	475	792
Bachelor's degree	2 256	2 371	297	337	1 504	1 536	140	303	11	–	304	195	–	–
Graduate or professional degree	225	225	39	11	154	151	12	30	–	10	20	21	–	2
Civilian labor force 20 to 24 years	**7 188 372**	**6 552 467**	**971 802**	**632 938**	**5 203 073**	**4 876 808**	**761 324**	**817 238**	**56 961**	**45 568**	**188 394**	**173 740**	**6 818**	**6 175**
Not high school graduate	1 422 211	717 839	465 127	184 852	727 778	381 879	187 618	124 811	16 654	9 099	22 985	15 865	2 049	1 333
High school graduate (includes equivalency)	2 461 561	1 989 754	264 785	189 590	1 818 106	1 456 308	308 156	288 853	22 439	16 893	45 738	36 295	2 337	1 815
Some college or associate degree	2 590 360	2 923 850	211 847	222 657	2 043 440	2 254 561	232 485	342 949	16 188	17 580	84 371	83 542	2 029	2 561
Bachelor's degree	674 122	872 207	26 722	32 828	583 493	744 905	30 888	56 835	1 514	1 844	31 149	35 348	356	447
Graduate or professional degree	40 118	48 817	3 321	3 011	30 256	39 155	2 177	3 790	166	152	4 151	2 690	47	19
Civilian labor force 25 to 29 years	**9 323 790**	**7 876 938**	**1 068 644**	**694 845**	**6 989 127**	**5 886 726**	**922 305**	**1 007 800**	**67 708**	**54 206**	**268 105**	**227 578**	**7 901**	**5 783**
Not high school graduate	1 551 236	810 144	473 494	207 497	832 517	426 393	194 017	141 668	17 367	10 022	31 661	23 408	2 180	1 156
High school graduate (includes equivalency)	2 976 114	2 246 777	266 095	184 661	2 290 552	1 690 538	345 686	314 152	26 306	18 915	45 170	37 054	2 305	1 457
Some college or associate degree	2 694 503	2 740 378	236 308	213 792	2 082 569	2 044 624	276 510	392 565	19 241	20 022	77 587	67 352	2 288	2 023
Bachelor's degree	1 685 689	1 722 700	70 503	71 597	1 446 902	1 433 306	90 615	136 895	3 850	4 491	73 066	75 533	753	878
Graduate or professional degree	416 248	356 939	22 244	17 298	336 587	291 865	15 477	22 520	944	756	40 621	24 231	375	269
Civilian labor force 30 to 34 years	**9 928 799**	**8 145 404**	**947 539**	**644 086**	**7 662 928**	**6 116 382**	**947 553**	**1 071 242**	**65 288**	**57 727**	**297 910**	**249 500**	**7 581**	**6 467**
Not high school graduate	1 476 466	869 236	412 882	214 824	813 364	447 633	196 431	163 367	15 908	10 230	35 747	31 760	2 134	1 422
High school graduate (includes equivalency)	3 052 271	2 410 357	219 548	162 418	2 435 961	1 862 482	325 693	321 846	23 750	18 891	45 546	43 028	1 773	1 692
Some college or associate degree	2 896 180	2 792 453	212 121	182 981	2 293 766	2 112 670	289 221	403 915	19 704	22 216	79 092	68 437	2 276	2 234
Bachelor's degree	1 722 743	1 491 499	68 362	59 097	1 471 922	1 211 569	103 765	140 556	4 368	4 778	73 478	74 712	848	787
Graduate or professional degree	781 139	581 859	34 626	24 766	647 915	482 028	32 443	41 558	1 558	1 612	64 047	31 563	550	332
Civilian labor force 35 to 39 years	**8 957 803**	**7 595 481**	**730 868**	**544 077**	**7 064 328**	**5 791 880**	**822 754**	**950 620**	**57 672**	**53 681**	**276 447**	**250 298**	**5 734**	**4 925**
Not high school graduate	1 161 167	784 653	319 763	193 085	622 720	390 510	172 027	151 029	11 141	8 411	33 726	40 409	1 790	1 209
High school graduate (includes equivalency)	2 383 871	2 227 575	152 593	137 906	1 913 076	1 738 872	259 168	290 501	18 407	16 572	39 385	42 429	1 242	1 295
Some college or associate degree	2 769 525	2 537 398	167 074	142 295	2 256 495	1 978 164	254 922	331 599	20 171	20 808	69 237	63 203	1 626	1 329
Bachelor's degree	1 652 440	1 306 935	56 333	45 151	1 426 246	1 064 878	93 332	118 292	5 190	5 303	70 614	72 619	725	692
Graduate or professional degree	990 800	738 920	35 105	25 640	845 791	619 456	43 305	59 199	2 763	2 587	63 485	31 638	351	400
Civilian labor force 40 to 69 years	**27 024 277**	**22 262 685**	**1 712 574**	**1 280 841**	**22 205 919**	**17 783 813**	**2 209 408**	**2 418 072**	**148 042**	**126 835**	**734 721**	**641 900**	**13 613**	**11 224**
Not high school graduate	5 378 946	3 822 520	884 472	580 342	3 544 112	2 367 943	788 477	697 547	43 043	31 688	114 377	141 030	4 465	3 970
High school graduate (includes equivalency)	7 261 524	7 682 733	316 146	317 919	6 171 005	6 448 051	614 607	736 873	39 980	38 731	116 566	138 331	3 220	2 828
Some college or associate degree	6 692 153	6 090 904	307 730	254 564	5 690 206	5 041 628	495 379	613 156	42 456	39 900	153 268	139 001	3 114	2 655
Bachelor's degree	4 196 910	2 680 933	109 568	73 292	3 723 573	2 249 373	172 382	196 615	12 940	9 574	176 968	151 053	1 479	1 026
Graduate or professional degree	3 494 744	1 985 595	94 658	54 724	3 077 023	1 676 818	138 563	173 881	9 623	6 942	173 542	72 485	1 335	745
Civilian labor force 70 years and over	**930 200**	**632 333**	**31 458**	**20 327**	**820 931**	**535 418**	**59 911**	**65 627**	**2 416**	**2 455**	**15 165**	**8 157**	**319**	**349**
Not high school graduate	329 525	224 926	19 686	12 325	264 832	168 433	38 059	39 354	1 236	1 159	5 572	3 440	140	215
High school graduate (includes equivalency)	221 773	203 202	4 593	4 130	202 942	182 470	10 151	13 832	478	583	3 529	2 117	80	70
Some college or associate degree	170 028	121 419	3 511	2 208	157 370	109 932	6 437	7 553	364	476	2 304	1 209	42	41
Bachelor's degree	97 239	46 212	1 151	803	91 851	41 820	2 184	2 525	144	149	1 883	907	26	8
Graduate or professional degree	111 635	36 574	2 517	861	103 936	32 763	3 080	2 363	194	88	1 877	484	31	15

Table 4. Educational Attainment of the Civilian Labor Force by Age, Sex, and Race: 1990

[Data based on sample and subject to sampling variability, see text. For definitions of terms and meanings of symbols, see text]

United States	All persons		White		Black		American Indian, Eskimo, or Aleut		Asian or Pacific Islander		Other race	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Civilian labor force 16 years and over	**66 986 201**	**56 487 249**	**55 699 109**	**45 826 627**	**6 247 539**	**6 847 642**	**459 892**	**391 420**	**1 918 998**	**1 684 082**	**2 660 663**	**1 737 478**
Not high school graduate	13 594 875	9 044 223	9 789 849	6 299 495	1 890 088	1 570 966	138 391	93 181	305 847	307 632	1 470 700	772 949
High school graduate (includes equivalency)	19 142 416	17 580 312	16 114 162	14 587 956	1 984 940	2 099 809	145 379	124 132	328 164	330 045	569 771	438 370
Some college or associate degree	18 382 602	17 990 928	15 651 724	14 777 659	1 631 122	2 207 378	130 358	133 858	499 649	460 743	469 749	411 290
Bachelor's degree	10 031 399	8 122 857	8 963 799	6 930 838	501 704	661 598	29 529	27 407	434 747	420 039	101 620	82 975
Graduate or professional degree	5 834 909	3 748 929	5 179 575	3 230 679	239 685	307 891	16 235	12 842	350 591	165 623	48 823	31 894
Civilian labor force 16 to 19 years	**3 632 960**	**3 421 941**	**2 913 884**	**2 757 561**	**393 905**	**404 435**	**31 175**	**27 759**	**88 033**	**84 022**	**205 963**	**148 164**
Not high school graduate	2 275 324	1 814 905	1 794 690	1 450 925	258 019	214 907	20 999	15 989	49 290	41 541	152 326	91 543
High school graduate (includes equivalency)	785 302	819 914	632 532	653 354	89 519	106 484	6 700	6 986	19 737	19 708	36 814	33 382
Some college or associate degree	569 853	784 526	484 746	651 452	46 215	82 701	3 465	4 774	18 682	22 550	16 745	23 049
Bachelor's degree	2 256	2 371	1 739	1 679	140	313	11	–	304	202	62	177
Graduate or professional degree	225	225	177	151	12	30	–	10	20	21	16	13
Civilian labor force 20 to 24 years	**7 188 372**	**6 552 467**	**5 662 375**	**5 190 690**	**781 580**	**834 100**	**62 623**	**49 447**	**196 409**	**181 397**	**485 385**	**296 833**
Not high school graduate	1 422 211	717 839	928 498	463 703	195 612	128 957	19 211	10 068	24 934	17 001	253 956	98 110
High school graduate (includes equivalency)	2 461 561	1 989 754	1 947 611	1 550 285	314 477	293 522	24 026	18 202	48 317	38 546	127 130	89 199
Some college or associate degree	2 590 360	2 923 850	2 154 495	2 370 658	237 625	349 869	17 611	19 059	87 276	86 930	93 353	97 334
Bachelor's degree	674 122	872 207	599 607	765 255	31 565	57 868	1 589	1 957	31 672	36 176	9 689	10 951
Graduate or professional degree	40 118	48 817	32 164	40 789	2 301	3 884	186	161	4 210	2 744	1 257	1 239
Civilian labor force 25 to 29 years	**9 323 790**	**7 876 938**	**7 508 525**	**6 241 584**	**945 030**	**1 026 981**	**73 322**	**58 525**	**277 055**	**235 337**	**519 858**	**314 511**
Not high school graduate	1 551 236	810 144	1 038 915	518 788	202 042	146 468	19 366	11 006	33 763	24 510	257 150	109 372
High school graduate (includes equivalency)	2 976 114	2 246 777	2 423 577	1 785 329	351 909	318 985	27 858	20 243	47 748	38 991	125 022	83 229
Some college or associate degree	2 694 503	2 740 378	2 205 901	2 157 785	282 748	399 243	20 946	21 695	80 490	70 168	104 418	91 487
Bachelor's degree	1 685 689	1 722 700	1 489 640	1 476 376	92 375	139 269	4 142	4 796	74 147	77 188	25 385	25 071
Graduate or professional degree	416 248	356 939	350 492	303 306	15 956	23 016	1 010	785	40 907	24 480	7 883	5 352
Civilian labor force 30 to 34 years	**9 928 799**	**8 145 404**	**8 136 271**	**6 451 324**	**969 946**	**1 090 275**	**70 788**	**61 648**	**305 839**	**256 906**	**445 955**	**285 251**
Not high school graduate	1 476 466	869 236	995 726	542 656	204 521	168 686	17 978	11 289	37 597	33 153	220 644	113 452
High school graduate (includes equivalency)	3 052 271	2 410 357	2 548 036	1 948 218	331 250	326 114	25 109	19 867	47 868	44 693	100 008	71 465
Some college or associate degree	2 896 180	2 792 453	2 406 848	2 212 921	295 041	410 626	21 399	23 755	81 332	70 991	91 560	74 160
Bachelor's degree	1 722 743	1 491 499	1 514 583	1 248 987	105 794	142 410	4 609	4 978	74 652	76 185	23 105	18 939
Graduate or professional degree	781 139	581 859	671 078	498 542	33 340	42 439	1 693	1 759	64 390	31 884	10 638	7 235
Civilian labor force 35 to 39 years	**8 957 803**	**7 595 481**	**7 438 355**	**6 083 680**	**842 389**	**966 880**	**62 140**	**57 089**	**283 495**	**257 610**	**331 424**	**230 222**
Not high school graduate	1 161 167	784 653	764 201	477 100	179 803	156 174	12 501	9 232	35 522	41 958	169 140	100 189
High school graduate (includes equivalency)	2 383 871	2 227 575	1 992 841	1 814 186	263 424	294 216	19 467	17 359	40 957	43 755	67 182	58 059
Some college or associate degree	2 769 525	2 537 398	2 348 753	2 060 954	260 125	336 349	21 588	22 179	71 438	65 388	67 621	52 528
Bachelor's degree	1 652 440	1 306 935	1 462 737	1 094 213	94 808	120 072	5 558	5 557	71 725	74 436	17 612	12 657
Graduate or professional degree	990 800	738 920	869 823	637 227	44 229	60 069	3 026	2 762	63 853	32 073	9 869	6 789
Civilian labor force 40 to 69 years	**27 024 277**	**22 262 685**	**23 196 426**	**18 552 463**	**2 253 888**	**2 458 519**	**157 339**	**134 392**	**752 619**	**660 401**	**664 005**	**456 910**
Not high school graduate	5 378 946	3 822 520	3 990 241	2 669 901	811 376	715 858	47 045	34 378	118 962	145 944	411 322	256 439
High school graduate (includes equivalency)	7 261 524	7 682 733	6 363 193	6 651 022	624 065	746 556	41 718	40 868	119 949	142 173	112 599	102 114
Some college or associate degree	6 692 153	6 090 904	5 890 687	5 212 419	502 898	620 939	44 985	41 902	158 060	143 447	95 523	72 197
Bachelor's degree	4 196 910	2 680 933	3 802 671	2 301 907	174 828	199 100	13 476	9 970	180 332	154 916	25 603	15 040
Graduate or professional degree	3 494 744	1 985 595	3 149 634	1 717 214	140 721	176 066	10 115	7 274	175 316	73 921	18 958	11 120
Civilian labor force 70 years and over	**930 200**	**632 333**	**843 273**	**549 325**	**60 801**	**66 452**	**2 505**	**2 560**	**15 548**	**8 409**	**8 073**	**5 587**
Not high school graduate	329 525	224 926	277 578	176 422	38 715	39 916	1 291	1 219	5 779	3 525	6 162	3 844
High school graduate (includes equivalency)	221 773	203 202	206 372	185 562	10 296	13 932	501	607	3 588	2 179	1 016	922
Some college or associate degree	170 028	121 419	160 294	111 470	6 470	7 651	364	494	2 371	1 269	529	535
Bachelor's degree	97 239	46 212	92 822	42 421	2 194	2 566	144	149	1 915	936	164	140
Graduate or professional degree	111 635	36 574	106 207	33 450	3 126	2 387	205	91	1 895	500	202	146

TIPSII [UPF] GPS11 CENSUS90 71580800 09/29/92 8:20 PM MACHINE: C DATA:CENSUS90*PS11TIPSDA00. 09/28/92 11:46:31 TAPE: NONE FRAME: 21
TSF:CENSUS90*92. 09/28/92 11:46:55 UTF:CENSUS90*93. 09/28/92 11:46:55 META:CENSUS90*PS11TABLES00. 09/28/92 11:47:46

APPENDIX A.
Area Classifications

CONTENTS

These definitions are for many geographic entities and concepts that the Census Bureau will include in its 1990 census data products. Not all entities and concepts are shown in any one 1990 census data product. For a description of geographic areas included in each data product, see appendix F.

BOUNDARY CHANGES

The boundaries of some counties, county subdivisions, American Indian and Alaska Native areas, and many incorporated places, changed between those reported for the 1980 census and January 1, 1990. Boundary changes to legal entities result from:

1. Annexations to or detachments from legally established governmental units.
2. Mergers or consolidations of two or more governmental units.
3. Establishment of new governmental units.
4. Disincorporations or disorganizations of existing governmental units.
5. Changes in treaties and Executive Orders.

The historical counts shown for counties, county subdivisions, and places are not updated for such changes, and thus reflect the population and housing units in the area as delineated at each census. Information on boundary changes reported between the 1980 and 1990 censuses for counties, county subdivisions, and incorporated places is presented in the ''User Notes'' section of the technical documentation of Summary Tape Files 1 and 3, and in the 1990 CPH-2, *Population and Housing Unit Counts* printed reports. For information on boundary changes for such areas in the decade preceding other decennial censuses, see the *Number of Inhabitants* reports for each census. Boundary changes are not reported for some areas, such as census designated places and block groups.

CENSUS REGION AND CENSUS DIVISION

Census Division

Census divisions are groupings of States that are subdivisions of the four census regions. There are nine divisions, which the Census Bureau adopted in 1910 for the presentation of data. The regions, divisions, and their constituent States are:

Northeast Region

New England Division:

Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut

Middle Atlantic Division:

New York, New Jersey, Pennsylvania

Midwest Region

East North Central Division:

Ohio, Indiana, Illinois, Michigan, Wisconsin

West North Central Division:

Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, Kansas

South Region

South Atlantic Division:

Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida

East South Central Division:

Kentucky, Tennessee, Alabama, Mississippi

West South Central Division:

Arkansas, Louisiana, Oklahoma, Texas

West Region

Mountain Division:

Montana, Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada

Pacific Division:

Washington, Oregon, California, Alaska, Hawaii

Census Region

Census regions are groupings of States that subdivide the United States for the presentation of data. There are four regions—Northeast, Midwest, South, and West. Each of the four census regions is divided into two or more census divisions. Prior to 1984, the Midwest region was named the North Central region. From 1910, when census regions were established, through the 1940's, there were three regions—North, South, and West.

COUNTY

The primary political divisions of most States are termed ''counties.'' In Louisiana, these divisions are known as ''parishes.'' In Alaska, which has no counties, the county equivalents are the organized ''boroughs'' and the ''census areas'' that are delineated for statistical purposes by the State of Alaska and the Census Bureau. In four States (Maryland, Missouri, Nevada, and Virginia), there are one or more cities that are independent of any county organization and thus constitute primary divisions of their States. These cities are known as ''independent cities'' and are treated as equivalent to counties for statistical purposes. That part of Yellowstone National Park in Montana is treated as a county equivalent. The District of Columbia has no primary divisions, and the entire area is considered equivalent to a county for statistical purposes.

Each county and county equivalent is assigned a three-digit FIPS code that is unique within State. These codes are assigned in alphabetical order of county or county equivalent within State, except for the independent cities, which follow the listing of counties.

COUNTY SUBDIVISION

County subdivisions are the primary subdivisions of counties and their equivalents for the reporting of decennial census data. They include census county divisions, census subareas, minor civil divisions, and unorganized territories.

Each county subdivision is assigned a three-digit census code in alphabetical order within county and a five-digit FIPS code in alphabetical order within State.

Census County Division (CCD)

Census county divisions (CCD's) are subdivisions of a county that were delineated by the Census Bureau, in cooperation with State officials and local census statistical areas committees, for statistical purposes. CCD's were established in 21 States where there are no legally established minor civil divisions (MCD's), where the MCD's do not have governmental or administrative purposes, where the boundaries of the MCD's change frequently, and/ or where the MCD's are not generally known to the public. CCD's have no legal functions, and are not governmental units.

The boundaries of CCD's usually are delineated to follow visible features, and in most cases coincide with census tract or block numbering area boundaries. The name of each CCD is based on a place, county, or well-known local name that identifies its location. CCD's have been established in the following 21 States: Alabama, Arizona, California, Colorado, Delaware, Florida, Georgia, Hawaii, Idaho, Kentucky, Montana, Nevada, New Mexico, Oklahoma, Oregon, South Carolina, Tennessee, Texas, Utah, Washington, and Wyoming. For the 1980 census, the county subdivisions recognized for Nevada were MCD's.

Census Subarea (Alaska)

Census subareas are statistical subdivisions of boroughs and census areas (county equivalents) in Alaska. Census subareas were delineated cooperatively by the State of Alaska and the Census Bureau. The census subareas, identified first in 1980, replaced the various types of subdivisions used in the 1970 census.

Minor Civil Division (MCD)

Minor civil divisions (MCD's) are the primary political or administrative divisions of a county. MCD's represent many different kinds of legal entities with a wide variety of

governmental and/ or administrative functions. MCD's are variously designated as American Indian reservations, assessment districts, boroughs, election districts, gores, grants, magisterial districts, parish governing authority districts, plantations, precincts, purchases, supervisors' districts, towns, and townships. In some States, all or some incorporated places are not located in any MCD and thus serve as MCD's in their own right. In other States, incorporated places are subordinate to (part of) the MCD's in which they are located, or the pattern is mixed—some incorporated places are independent of MCD's and others are subordinate to one or more MCD's.

The Census Bureau recognizes MCD's in the following 28 States: Arkansas, Connecticut, Illinois, Indiana, Iowa, Kansas, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Nebraska, New Hampshire, New Jersey, New York, North Carolina, North Dakota, Ohio, Pennsylvania, Rhode Island, South Dakota, Vermont, Virginia, West Virginia, and Wisconsin. The District of Columbia has no primary divisions, and the entire area is considered equivalent to an MCD for statistical purposes.

The MCD's in 12 selected States (Connecticut, Maine, Massachusetts, Michigan, Minnesota, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, and Wisconsin) also serve as general-purpose local governments. The Census Bureau presents data for these MCD's in all data products in which it provides data for places.

Unorganized Territory (unorg.)

In nine States (Arkansas, Iowa, Kansas, Louisiana, Maine, Minnesota, North Carolina, North Dakota, and South Dakota), some counties contain territory that is not included in an MCD recognized by the Census Bureau. Each separate area of unorganized territory in these States is recognized as one or more separate county subdivisions for census purposes. Each unorganized territory is given a descriptive name, followed by the designation ''unorg.''

GEOGRAPHIC CODE

Geographic codes are shown primarily on machine-readable data products, such as computer tape and compact disc-read only memory (CD-ROM), but also appear on other products such as microfiche; they also are shown on some census maps. Codes are identified as ''census codes'' only if there is also a Federal Information Processing Standards (FIPS) code for the same geographic entity. A code that is not identified as either ''census'' or ''FIPS'' is usually a census code for which there is no FIPS equivalent, or for which the Census Bureau does not use the FIPS code. The exceptions, which use only the FIPS code in census products, are county, congressional district, and metropolitan area (that is, metropolitan statistical area, consolidated metropolitan statistical area, and primary metropolitan statistical area).

Census Code

Census codes are assigned for a variety of geographic entities, including American Indian and Alaska Native area, census division, census region, county subdivision, place, State, urbanized area, and voting district. The structure, format, and meaning of census codes appear in the 1990 census *Geographic Identification Code Scheme;* in the data dictionary portion of the technical documentation for summary tape files, CD-ROM's, and microfiche.

Federal Information Processing Standards (FIPS) Code

Federal Information Processing Standards (FIPS) codes are assigned for a variety of geographic entities, including American Indian and Alaska Native area, congressional district, county, county subdivision, metropolitan area, place, and State. The structure, format, and meaning of FIPS codes used in the census are shown in the 1990 census *Geographic Identification Code Scheme;* in the data dictionary portion of the technical documentation for summary tape files, CD-ROM's, and microfiche.

The objective of the FIPS codes is to improve the use of data resources of the Federal Government and avoid unnecessary duplication and incompatibilities in the collection, processing, and dissemination of data. More information about FIPS and FIPS code documentation is available from the National Technical Information Service, Springfield, VA 22161.

United States Postal Service (USPS) Code

United States Postal Service (USPS) codes for States are used in all 1990 data products. The codes are two-character alphabetic abbreviations. These codes are the same as the FIPS two-character alphabetic abbreviations.

GEOGRAPHIC PRESENTATION

Hierarchical Presentation

A hierarchical geographic presentation shows the geographic entities in a superior/ subordinate structure in census products. This structure is derived from the legal, administrative, or areal relationships of the entities. The hierarchical structure is depicted in report tables by means of indentation, and is explained for machine-readable media in the discussion of file structure in the geographic coverage portion of the abstract in the technical documentation. An example of hierarchical presentation is the ''standard census geographic hierarchy'': block, within block group, within census tract or block numbering area, within place, within county subdivision, within county, within State, within division, within region, within the United States. Graphically, this is shown as:

United States
Region
Division
State
County
County subdivision
Place (or part)
Census tract/ block numbering area (or part)
Block group (or part)
Block

Inventory Presentation

An inventory presentation of geographic entities is one in which all entities of the same type are shown in alphabetical or code sequence, without reference to their hierarchical relationships. Generally, an inventory presentation shows totals for entities that may be split in a hierarchical presentation, such as place, census tract/ block numbering area, or block group. An example of a series of inventory presentation is: State, followed by all the counties in that State, followed by all the places in that State. Graphically, this is shown as:

State

County ''A''
County ''B''
County ''C''

Place ''X''
Place ''Y''
Place ''Z''

METROPOLITAN AREA (MA)

The general concept of a metropolitan area (MA) is one of a large population nucleus, together with adjacent communities that have a high degree of economic and social integration with that nucleus. Some MA's are defined around two or more nuclei.

The MA classification is a statistical standard, developed for use by Federal agencies in the production, analysis, and publication of data on MA's. The MA's are designated and defined by the Federal Office of Management and Budget, following a set of official published standards. These standards were developed by the interagency Federal Executive Committee on Metropolitan Areas, with the aim of producing definitions that are as consistent as possible for all MA's nationwide.

Each MA must contain either a place with a minimum population of 50,000 or a Census Bureau-defined urbanized area and a total MA population of at least 100,000 (75,000 in New England). An MA comprises one or more central counties. An MA also may include one or more outlying counties that have close economic and social relationships with the central county. An outlying county must have a specified level of commuting to the central counties and also must meet certain standards regarding metropolitan character, such as population density, urban population, and population growth. In New England, MA's are composed of cities and towns rather than whole counties.

The territory, population, and housing units in MA's are referred to as ''metropolitan.'' The metropolitan category is subdivided into ''inside central city'' and ''outside central city.'' The territory, population, and housing units located outside MA's are referred to as ''nonmetropolitan.'' The metropolitan and nonmetropolitan classification cuts across the other hierarchies; for example, there is generally both urban and rural territory within both metropolitan and nonmetropolitan areas.

To meet the needs of various users, the standards provide for a flexible structure of metropolitan definitions that classify an MA either as a metropolitan statistical area (MSA) or as a consolidated metropolitan statistical area (CMSA) that is divided into primary metropolitan statistical areas (PMSA's). Documentation of the MA standards and how they are applied is available from the Secretary, Federal Executive Committee on Metropolitan Areas, Population Division, U.S. Bureau of the Census, Washington, DC 20233.

Central City

In each MSA and CMSA, the largest place and, in some cases, additional places are designated as ''central cities'' under the official standards. A few PMSA's do not have central cities. The largest central city and, in some cases, up to two additional central cities are included in the title of the MA; there also are central cities that are not included in an MA title. An MA central city does not include any part of that city that extends outside the MA boundary.

Consolidated and Primary Metropolitan Statistical Area (CMSA and PMSA)

If an area that qualifies as an MA has more than one million persons, primary metropolitan statistical areas (PMSA's) may be defined within it. PMSA's consist of a large urbanized county or cluster of counties that demonstrates very strong internal economic and social links, in addition to close ties to other portions of the larger area. When PMSA's are established, the larger area of which they are component parts is designated a consolidated metropolitan statistical area (CMSA).

Metropolitan Statistical Area (MSA)

Metropolitan statistical areas (MSA's) are relatively freestanding MA's and are not closely associated with other MA's. These areas typically are surrounded by nonmetropolitan counties.

Metropolitan Area Title and Code

The title of an MSA contains the name of its largest central city and up to two additional city names, provided that the additional places meet specified levels of population, employment, and commuting. Generally, a city with a population of 250,000 or more is in the title, regardless of other criteria.

The title of a PMSA may contain up to three place names, as determined above, or up to three county names, sequenced in order of population. A CMSA title also may include up to three names, the first of which generally is the most populous central city in the area. The second name may be the first city or county name in the most populous remaining PMSA; the third name may be the first city or county name in the next most populous PMSA. A regional designation may be substituted for the second and/ or third names in a CMSA title if such a designation is supported by local opinion and is deemed to be unambiguous and suitable by the Office of Management and Budget.

The titles for all MA's also contain the name of each State in which the area is located. Each metropolitan area is assigned a four-digit FIPS code, in alphabetical order nationwide. If the fourth digit of the code is a ''2,'' it identifies a CMSA. Additionally, there is a separate set of two-digit codes for CMSA's, also assigned alphabetically.

PLACE

Places, for the reporting of decennial census data, include census designated places and incorporated places. Each place is assigned a four-digit census code that is unique within State. Each place is also assigned a five-digit FIPS code that is unique within State. Both the census and FIPS codes are assigned based on alphabetical order within State. Consolidated cities (see below) are assigned a one-character alphabetical census code that is unique nationwide and a five-digit FIPS code that is unique within State.

Census Designated Place (CDP)

Census designated places (CDP's) are delineated for the decennial census as the statistical counterparts of incorporated places. CDP's comprise densely settled concentrations of population that are identifiable by name, but are not legally incorporated places. Their boundaries, which usually coincide with visible features or the boundary of an adjacent incorporated place, have no legal status, nor do these places have officials elected to serve traditional municipal functions. CDP boundaries may change with changes in the settlement pattern; a CDP with the same name as in previous censuses does not necessarily have the same boundaries.

Beginning with the 1950 census, the Census Bureau, in cooperation with State agencies and local census statistical areas committees, has identified and delineated boundaries for CDP's. In the 1990 census, the name of each such place is followed by ''CDP.'' In the 1980 census, ''(CDP)'' was used; in 1970, 1960, and 1950 censuses, these places were identified by ''(U),'' meaning ''unincorporated place.''

To qualify as a CDP for the 1990 census, an unincorporated community must have met the following criteria:

1. In all States except Alaska and Hawaii, the Census Bureau uses three population size criteria to designate a CDP. These criteria are:

   a. 1,000 or more persons if outside the boundaries of an urbanized area (UA) delineated for the 1980 census or a subsequent special census.

   b. 2,500 or more persons if inside the boundaries of a UA delineated for the 1980 census or a subsequent special census.

   c. 250 or more persons if outside the boundaries of a UA delineated for the 1980 census or a subsequent special census, and within the official boundaries of an American Indian reservation recognized for the 1990 census.

2. In Alaska, 25 or more persons if outside a UA, and 2,500 or more persons if inside a UA delineated for the 1980 census or a subsequent special census.

3. In Hawaii, 300 or more persons, regardless of whether the community is inside or outside a UA.

For the 1990 census, CDP's qualified on the basis of the population counts prepared for the 1990 Postcensus Local Review Program. Because these counts were subject to change, a few CDP's may have final population counts lower than the minimums shown above.

Hawaii is the only State with no incorporated places recognized by the Bureau of the Census. All places shown for Hawaii in the data products are CDP's. By agreement with the State of Hawaii, the Census Bureau does not show data separately for the city of Honolulu, which is coextensive with Honolulu County.

Consolidated City

A consolidated government is a unit of local government for which the functions of an incorporated place and its county or minor civil division (MCD) have merged. The legal aspects of this action may result in both the primary incorporated place and the county or MCD continuing to exist as legal entities, even though the county or MCD performs few or no governmental functions and has few or no elected officials. Where this occurs, and where one or more other incorporated places in the county or MCD continue to function as separate governments, even though they have been included in the consolidated government, the primary incorporated place is referred to as a ''consolidated city.''

The data presentation for consolidated cities varies depending upon the geographic presentation. In hierarchical presentations, consolidated cities are not shown. These presentations include the semi-independent places and the ''consolidated city (remainder).'' Where the consolidated city is coextensive with a county or county subdivision, the data shown for those areas in hierarchical presentations are equivalent to those for the consolidated government.

For inventory geographic presentations, the consolidated city appears at the end of the listing of places. The data for the consolidated city include places that are part of the consolidated city. The ''consolidated city (remainder)'' is the portion of the consolidated government minus the semi-independent places, and is shown in alphabetical sequence with other places.

In summary presentations by size of place, the consolidated city is not included. The places semi-independent of consolidated cities are categorized by their size, as is the ''consolidated city (remainder).''

Each consolidated city is assigned a one-character alphabetic census code. Each consolidated city also is assigned a five-digit FIPS code that is unique within State. The semi-independent places and the ''consolidated city (remainder)'' are assigned a four-digit census code and a five-digit FIPS place code that are unique within State. Both the census and FIPS codes are assigned based on alphabetical order within State.

Incorporated Place

Incorporated places recognized in 1990 census data products are those reported to the Census Bureau as legally in existence on January 1, 1990 under the laws of their respective States as cities, boroughs, towns, and villages, with the following exceptions: the towns in the New England States, New York, and Wisconsin, and the boroughs in New York are recognized as minor civil divisions for census purposes; the boroughs in Alaska are county equivalents.

STATE

States are the primary governmental divisions of the United States. The District of Columbia is treated as a statistical equivalent of a State for census purposes. The four census regions, nine census divisions, and their component States are shown under ''CENSUS REGION AND CENSUS DIVISION'' in this appendix.

The Census Bureau treats the outlying areas as State equivalents for the 1990 census. The outlying areas are American Samoa, Guam, the Northern Mariana Islands, Palau, Puerto Rico, and the Virgin Islands of the United States. Geographic definitions specific to each outlying area are shown in appendix A in the data products for each area.

Each State and equivalent is assigned a two-digit numeric Federal Information Processing Standards (FIPS) code in alphabetical order by State name, followed by the outlying area names. Each State and equivalent area also is assigned a two-digit census code. This code is assigned on the basis of the geographic sequence of each State within each census division; the first digit of the code is the code for the respective division. Puerto Rico, the Virgin Islands, and the outlying areas of the Pacific are assigned ''0'' as the division code. Each State and equivalent area also is assigned the two-letter FIPS/ United States Postal Service (USPS) code.

In 12 selected States (Connecticut, Maine, Massachusetts, Michigan, Minnesota, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, and Wisconsin), the minor civil divisions also serve as general-purpose local governments. The Census Bureau presents data for these minor civil divisions in all data products in which it provides data for places.

TIGER

TIGER is an acronym for the new digital (computer-readable) geographic data base that automates the mapping and related geographic activities required to support the Census Bureau's census and survey programs. The Census Bureau developed the Topologically Integrated Geographic Encoding and Referencing (TIGER) System to automate the geographic support processes needed to meet the major geographic needs of the 1990 census: producing the cartographic products to support data collection and map publication, providing the geographic structure for tabulation and publication of the collected data, assigning residential and employer addresses to their geographic location and relating those locations to the Census Bureau's geographic units, and so forth. The content of the TIGER data base is made available to the public through a variety of ''TIGER Extract'' files that may be obtained from the Data User Services Division, U.S. Bureau of the Census, Washington, DC 20233.

UNITED STATES

The United States comprises the 50 States and the District of Columbia. In addition, the Census Bureau treats the outlying areas as statistical equivalents of States for the 1990 census. The outlying areas include American Samoa, Guam, the Northern Mariana Islands, Palau, Puerto Rico, and the Virgin Islands.

APPENDIX B.
Definitions of Subject Characteristics

CONTENTS

SUBJECT CHARACTERISTICS

AGE

The data on age were derived from answers to questionnaire item 5, which was asked of all persons. The age classification is based on the age of the person in complete years as of April 1, 1990. The age response in question 5a was used normally to represent a person's age. However, when the age response was unacceptable or unavailable, a person's age was derived from an acceptable year-of-birth response in question 5b.

Data on age are used to determine the applicability of other questions for a person and to classify other characteristics in census tabulations. Age data are needed to interpret most social and economic characteristics used to plan and examine many programs and policies. Therefore, age is tabulated by single years of age and by many different groupings, such as 5-year age groups.

Some tabulations are shown by the age of the householder. These data were derived from the age responses for each householder. (For more information on householder, see the discussion under ''Household Type and Relationship.'')

Median Age—This measure divides the age distribution into two equal parts: one-half of the cases falling below the median value and one-half above the value. Generally, median age is computed on the basis of more detailed age intervals than are shown in some census publications; thus, a median based on a less detailed distribution may differ slightly from a corresponding median for the same population based on a more detailed distribution. (For more information on medians, see the discussion under ''Derived Measures.'')

Limitation of the Data—Counts in 1970 and 1980 for persons 100 years old and over were substantially overstated. Improvements were made in the questionnaire design, in the allocation procedures, and to the respondent instruction guide to attempt to minimize this problem for the 1990 census.

Review of detailed 1990 census information indicated that respondents tended to provide their age as of the date of completion of the questionnaire, not their age as of April 1, 1990. In addition, there may have been a tendency for respondents to round their age up if they were close to having a birthday. It is likely that approximately 10 percent of persons in most age groups are actually 1 year younger. For most single years of age, the misstatements are largely offsetting. The problem is most pronounced at age 0 because persons lost to age 1 may not have been fully offset by the inclusion of babies born after April 1, 1990, and because there may have been more rounding up to age 1 to avoid reporting age as 0 years. (Age in complete months was not collected for infants under age 1.)

The reporting of age 1 year older than age on April 1, 1990, is likely to have been greater in areas where the census data were collected later in 1990. The magnitude of this problem was much less in the three previous censuses where age was typically derived from respondent data on year of birth and quarter of birth. (For more information on the design of the age question, see the section below that discusses ''Comparability.'')

Comparability—Age data have been collected in every census. For the first time since 1950, the 1990 data are not available by quarter year of age. This change was made so that coded information could be obtained for both age and year of birth. In each census since 1940, the age of a person was assigned when it was not reported. In censuses before 1940, with the exception of 1880, persons of unknown age were shown as a separate category. Since 1960, assignment of unknown age has been performed by a general procedure described as ''imputation.'' The specific procedures for imputing age have been different in each census. (For more information on imputation, see Appendix C, Accuracy of the Data.)

EDUCATIONAL ATTAINMENT

Data on educational attainment were derived from answers to questionnaire item 12, which was asked of a sample of persons. Data are tabulated as attainment for persons 15 years old and over. Persons are classified

according to the highest level of school completed or the highest degree received. The question included instructions to report the level of the previous grade attended or the highest degree received for persons currently enrolled in school. The question included response categories which allowed persons to report completing the 12th grade without receiving a high school diploma, and which instructed respondents to report as ''high school graduate(s)''—persons who received either a high school diploma or the equivalent, for example, passed the Test of General Educational Development (G.E.D.), and did not attend college. (On the Military Census Report questionnaire, the lowest response category was ''Less than 9th grade.'')

Instructions included in the 1990 respondent instruction guide, which was mailed with the census questionnaire, further specified that schooling completed in foreign or ungraded school systems should be reported as the equivalent level of schooling in the regular American system; that vocational certificates or diplomas from vocational, trade, or business schools or colleges were not to be reported unless they were college level degrees; and that honorary degrees were not to be reported. The instructions gave ''medicine, dentistry, chiropractic, optometry, osteopathic medicine, pharmacy, podiatry, veterinary medicine, law, and theology'' as examples of professional school degrees, and specifically excluded ''barber school, cosmetology, or other training for a specific trade'' from the professional school category. The order in which they were listed suggested that doctorate degrees were ''higher'' than professional school degrees, which were ''higher'' than master's degrees.

Persons who did not report educational attainment were assigned the attainment of a person of the same age, race or Spanish origin, and sex who resided in the same or a nearby area. Persons who filled more than one circle were edited to the highest level or degree reported.

High School Graduate or Higher—Includes persons whose highest degree was a high school diploma or its equivalent, persons who attended college or professional school, and persons who received a college, university, or professional degree. Persons who reported completing the 12th grade but not receiving a diploma are not included.

Not Enrolled, Not High School Graduate—Includes persons of compulsory school attendance age or above who were not enrolled in school and were not high school graduates; these persons may be taken to be ''high school dropouts.'' There is no restriction on when they ''dropped out'' of school, and they may have never attended high school.

In prior censuses, ''Median school years completed'' was used as a summary measure of educational attainment. In 1990, the median can only be calculated for groups of which less than half the members have attended college. ''Percent high school graduate or higher'' and ''Percent bachelor's degree or higher'' are summary measures which can be calculated from the present data and offer quite readily interpretable measures of differences between population subgroups. To make comparisons over time, ''Percent high school graduate or higher'' can be calculated and ''Percent bachelor's degree or higher'' can be approximated with data from previous censuses.

Comparability—From 1840 to 1930, the census measured educational attainment by means of a basic literacy question. In 1940, a single question was asked on highest grade of school completed. In the censuses of 1950 through 1980, a two-part question asking highest grade of school attended and whether that grade was finished was used to construct highest grade or year of school completed. For persons who have not attended college, the response categories in the 1990 educational attainment question should produce data which are comparable to data on highest grade completed from earlier censuses.

The response categories for persons who have attended college were modified from earlier censuses because there was some ambiguity in interpreting responses in terms of the number of years of college completed. For instance, it was not clear whether ''completed the fourth year of college,'' ''completed the senior year of college,'' and ''college graduate'' were synonymous. Research conducted shortly before the census suggests that these terms were more distinct in 1990 than in earlier decades, and this change may have threatened the ability to estimate the number of ''college graduates'' from the number of persons reported as having completed the fourth or a higher year of college. It was even more difficult to make inferences about post-baccalaureate degrees and ''Associate'' degrees from highest year of college completed. Thus, comparisons of post-secondary educational attainment in this and earlier censuses should be made with great caution.

In the 1960 and subsequent censuses, persons for whom educational attainment was not reported were assigned the same attainment level as a similar person whose residence was in the same or a nearby area. In the 1940 and 1950 censuses, persons for whom educational attainment was not reported were not allocated.

EMPLOYMENT STATUS

The data on employment status were derived from answers to questionnaire items 21, 25, and 26, which were asked of a sample of persons. The series of questions on employment status was asked of all persons 15 years old and over and was designed to identify, in this sequence: (1) persons who worked at any time during the reference week; (2) persons who did not work during the reference week but who had jobs or businesses from which they were temporarily absent (excluding layoff); (3) persons on layoff; and (4) persons who did not work during the reference week, but who were looking for work during the

last four weeks and were available for work during the reference week. (For more information, see the discussion under ''Reference Week.'')

The employment status data shown in this and other 1990 census tabulations relate to persons 16 years old and over. Some tabulations showing employment status, however, include persons 15 years old. By definition, these persons are classified as ''Not in Labor Force.''. In the 1940, 1950, and 1960 censuses, employment status data were presented for persons 14 years old and over. The change in the universe was made in 1970 to agree with the official measurement of the labor force as revised in January 1967 by the U.S. Department of Labor. The 1970 census was the last to show employment data for persons 14 and 15 years old.

Employed—All civilians 16 years old and over who were either (1) ''at work''—those who did any work at all during the reference week as paid employees, worked in their own business or profession, worked on their own farm, or worked 15 hours or more as unpaid workers on a family farm or in a family business; or (2) were ''with a job but not at work''—those who did not work during the reference week but had jobs or businesses from which they were temporarily absent due to illness, bad weather, industrial dispute, vacation, or other personal reasons. Excluded from the employed are persons whose only activity consisted of work around the house or unpaid volunteer work for religious, charitable, and similar organizations; also excluded are persons on active duty in the United States Armed Forces.

Unemployed—All civilians 16 years old and over are classified as unemployed if they (1) were neither ''at work'' nor ''with a job but not at work'' during the reference week, and (2) were looking for work during the last 4 weeks, and (3) were available to accept a job. Also included as unemployed are civilians who did not work at all during the reference week and were waiting to be called back to a job from which they had been laid off. Examples of job seeking activities are:

- Registering at a public or private employment office
- Meeting with prospective employers
- Investigating possibilities for starting a professional practice or opening a business
- Placing or answering advertisements
- Writing letters of application
- Being on a union or professional register

Civilian Labor Force—Consists of persons classified as employed or unemployed in accordance with the criteria described above.

Experienced Unemployed—These are unemployed persons who have worked at any time in the past.

Experienced Civilian Labor Force—Consists of the employed and the experienced unemployed.

Labor Force—All persons classified in the civilian labor force plus members of the U.S. Armed Forces (persons on active duty with the United States Army, Air Force, Navy, Marine Corps, or Coast Guard).

Not in Labor Force—All persons 16 years old and over who are not classified as members of the labor force. This category consists mainly of students, housewives, retired workers, seasonal workers enumerated in an *off* season who were not looking for work, institutionalized persons, and persons doing only incidental unpaid family work (less than 15 hours during the reference week).

Worker—This term appears in connection with several subjects: journey-to-work items, class of worker, weeks worked in 1989, and number of workers in family in 1989. Its meaning varies and, therefore, should be determined in each case by referring to the definition of the subject in which it appears.

Actual Hours Worked Last Week—All persons who reported working during the reference week were asked to report in questionnaire item 21b the number of hours that they worked. The statistics on hours worked pertain to the number of hours actually worked at all jobs, and do not necessarily reflect the number of hours typically or usually worked or the scheduled number of hours. The concept of ''actual hours'' differs from that of ''usual hours'' described below. The number of persons who worked only a small number of hours is probably understated since such persons sometimes consider themselves as not working. Respondents were asked to include overtime or extra hours worked, but to exclude lunch hours, sick leave, and vacation leave.

Limitation of the Data—The census may understate the number of employed persons because persons who have irregular, casual, or unstructured jobs sometimes report themselves as not working. The number of employed persons ''at work'' is probably overstated in the census (and conversely, the number of employed ''with a job, but not at work'' is understated) since some persons on vacation or sick leave erroneously reported themselves as working. This problem has no effect on the total number of employed persons. The reference week for the employment data is not the same for all persons. Since persons can change their employment status from one week to another, the lack of a uniform reference week may mean that the employment data do not reflect the reality of the employment situation of any given week. (For more information, see the discussion under ''Reference Week.'')

Comparability—The questionnaire items and employment status concepts for the 1990 census are essentially the same as those used in the 1980 and 1970 censuses. However, these concepts differ in many respects from those associated with the 1950 and 1960 censuses.

Since employment data from the census are obtained from respondents in households, they differ from statistics based on reports from individual business establishments, farm enterprises, and certain government programs. Persons employed at more than one job are counted only once in the census and are classified according to the job at which they worked the greatest number of hours during the reference week. In statistics based on reports from business and farm establishments, persons who work for more than one establishment may be counted more than once. Moreover, some tabulations may exclude private household workers, unpaid family workers, and self-employed persons, but may include workers less than 16 years of age.

An additional difference in the data arises from the fact that persons who had a job but were not at work are included with the employed in the census statistics, whereas many of these persons are likely to be excluded from employment figures based on establishment payroll reports. Furthermore, the employment status data in census tabulations include persons on the basis of place of residence regardless of where they work, whereas establishment data report persons at their place of work regardless of where they live. This latter consideration is particularly significant when comparing data for workers who commute between areas.

Census data on actual hours worked during the reference week may differ from data from other sources. The census measures hours actually worked, whereas some surveys measure hours paid for by employers. Comparability of census actual hours worked data may also be affected by the nature of the reference week (see ''Reference Week'').

For several reasons, the unemployment figures of the Census Bureau are not comparable with published figures on unemployment compensation claims. For example, figures on unemployment compensation claims exclude persons who have exhausted their benefit rights, new workers who have not earned rights to unemployment insurance, and persons losing jobs not covered by unemployment insurance systems (including some workers in agriculture, domestic services, and religious organizations, and self-employed and unpaid family workers). In addition, the qualifications for drawing unemployment compensation differ from the definition of unemployment used by the Census Bureau. Persons working only a few hours during the week and persons with a job but not at work are sometimes eligible for unemployment compensation but are classified as ''Employed'' in the census. Differences in the geographical distribution of unemployment data arise because the place where claims are filed may not necessarily be the same as the place of residence of the unemployed worker.

The figures on employment status from the decennial census are generally comparable with similar data collected in the Current Population Survey. However, some difference may exist because of variations in enumeration and processing techniques.

HISPANIC ORIGIN

The data on Spanish/Hispanic origin were derived from answers to questionnaire item 7, which was asked of all persons. Persons of Hispanic origin are those who classified themselves in one of the specific Hispanic origin categories listed on the questionnaire—''Mexican,'' ''Puerto Rican,'' or ''Cuban''—as well as those who indicated that they were of ''other Spanish/Hispanic'' origin. Persons of ''Other Spanish/Hispanic'' origin are those whose origins are from Spain, the Spanish-speaking countries of Central or South America, or the Dominican Republic, or they are persons of Hispanic origin identifying themselves generally as Spanish, Spanish-American, Hispanic, Hispano, Latino, and so on. Write-in responses to the ''other Spanish/Hispanic'' category were coded only for sample data.

Origin can be viewed as the ancestry, nationality group, lineage, or country of birth of the person or the person's parents or ancestors before their arrival in the United States. Persons of Hispanic origin may be of any race.

Some tabulations are shown by the Hispanic origin of the householder. In all cases where households, families, or occupied housing units are classified by Hispanic origin, the Hispanic origin of the householder is used. (See the discussion of householder under ''Household Type and Relationship.'')

During direct interviews conducted by enumerators, if a person could not provide a single origin response, he or she was asked to select, based on self-identification, the group which best described his or her origin or descent. If a person could not provide a single group, the origin of the person's mother was used. If a single group could not be provided for the person's mother, the first origin reported by the person was used.

If any household member failed to respond to the Spanish/Hispanic origin question, a response was assigned by the computer according to the reported entries of other household members by using specific rules of precedence of household relationship. In the processing of sample questionnaires, responses to other questions on the questionnaire, such as ancestry and place of birth, were used to assign an origin before any reference was made to the origin reported by other household members. If an origin was not entered for any household member, an origin was assigned from another household according to the race of the householder. This procedure is a variation of the general imputation process described in Appendix C, Accuracy of the Data.

Comparability—There may be differences between the total Hispanic origin population based on 100-percent tabulations and sample tabulations. Such differences are the result of sampling variability, nonsampling error, and more extensive edit procedures for the Spanish/Hispanic origin item on the sample questionnaires. (For more information on sampling variability and nonsampling error, see Appendix C, Accuracy of the Data.)

The 1990 data on Hispanic origin are generally comparable with those for the 1980 census. However, there are some differences in the format of the Hispanic origin question between the two censuses. For 1990, the word ''descent'' was deleted from the 1980 wording. In addition, the term ''Mexican-Amer.'' used in 1980 was shortened further to ''Mexican-Am.'' to reduce misreporting (of ''American'') in this category detected in the 1980 census. Finally, the 1990 question allowed those who reported as ''other Spanish/ Hispanic'' to write in their specific Hispanic origin group.

Misreporting in the ''Mexican-Amer.'' category of the 1980 census item on Spanish/ Hispanic origin may affect the comparability of 1980 and 1990 census data for persons of Hispanic origin for certain areas of the country. An evaluation of the 1980 census item on Spanish/ Hispanic origin indicated that there was misreporting in the Mexican origin category by White and Black persons in certain areas. The study results showed evidence that the misreporting occurred in the South (excluding Texas), the Northeast (excluding the New York City area), and a few States in the Midwest Region. Also, results based on available data suggest that the impact of possible misreporting of Mexican origin in the 1980 census was severe in those portions of the above-mentioned regions where the Hispanic origin population was generally sparse. However, national 1980 census data on the Mexican origin population or total Hispanic origin population at the national level was not seriously affected by the reporting problem. (For a more detailed discussion of the evaluation of the 1980 census Spanish/ Hispanic origin item, see the 1980 census Supplementary Reports.)

The 1990 and 1980 census data on the Hispanic population are not directly comparable with 1970 Spanish origin data because of a number of factors: (1) overall improvements in the 1980 and 1990 censuses, (2) better coverage of the population, (3) improved question designs, and (4) an effective public relations campaign by the Census Bureau with the assistance of national and community ethnic groups.

Specific changes in question design between the 1980 and 1970 censuses included the placement of the category ''No, not Spanish/ Hispanic'' as the first category in that question. (The corresponding category appeared last in the 1970 question.) Also, the 1970 category ''Central or South American'' was deleted because in 1970 some respondents misinterpreted the category; furthermore, the designations ''Mexican-American'' and ''Chicano'' were added to the Spanish/ Hispanic origin question in 1980. In the 1970 census, the question on Spanish origin was asked of only a 5-percent sample of the population.

INDUSTRY, OCCUPATION, AND CLASS OF WORKER

The data on industry, occupation, and class of worker were derived from answers to questionnaire items 28, 29, and 30 respectively. These questions were asked of a sample of persons. Information on industry relates to the kind of business conducted by a person's employing organization; occupation describes the kind of work the person does on the job.

For employed persons, the data refer to the person's job during the reference week. For those who worked at two or more jobs, the data refer to the job at which the person worked the greatest number of hours. For unemployed persons, the data refer to their last job. The industry and occupation statistics are derived from the detailed classification systems developed for the 1990 census as described below. The *Classified Index of Industries and Occupations* provided additional information on the industry and occupation classification systems.

Respondents provided the data for the tabulations by writing on the questionnaires descriptions of their industry and occupation. These descriptions were keyed and passed through automated coding software which assigned a portion of the written entries to categories in the classification system. The automated system assigned codes to 59 percent of the industry entries and 38 percent of the occupation entries.

Those cases not coded by the computer were referred to clerical staff in the Census Bureau's Kansas City processing office for coding. The clerical staff converted the written questionnaire descriptions to codes by comparing these descriptions to entries in the *Alphabetical Index of Industries and Occupations*. For the industry code, these coders also referred to an Employer Name List (formerly called Company Name List). This list, prepared from the Standard Statistical Establishment List developed by the Census Bureau for the economic censuses and surveys, contained the names of business establishments and their Standard Industrial Classification (SIC) codes converted to population census equivalents. This list facilitated coding and maintained industrial classification comparability.

Industry

The industry classification system developed for the 1990 census consists of 236 categories for employed persons, classified into 13 major industry groups. Since 1940, the industrial classification has been based on the Standard Industrial Classification Manual (SIC). The 1990 census classification was developed from the 1987 SIC published by the Office of Management and Budget, Executive Office of the President.

The SIC was designed primarily to classify establishments by the type of industrial activity in which they were engaged. However, census data, which were collected from households, differ in detail and nature from those obtained from establishment surveys. Therefore, the census classification systems, while defined in SIC terms, cannot reflect the full detail in all categories. There are several levels of industrial classification found in census

products. For example, the 1990 CP-2, *Social and Economic Characteristics* report includes 41 unique industrial categories, while the 1990 Summary Tape File 4 (STF 4) presents 72 categories.

Occupation

The occupational classification system developed for the 1990 census consists of 501 specific occupational categories for employed persons arranged into 6 summary and 13 major occupational groups. This classification was developed to be consistent with the Standard Occupational Classification (SOC) Manual: 1980, published by the Office of Federal Statistical Policy and Standards, U.S. Department of Commerce. Tabulations with occupation as the primary characteristic present several levels of occupational detail. The most detailed tabulations are shown in a special 1990 subject report and tape files on occupation. These products contain all 501 occupational categories plus industry or class of worker subgroupings of occupational categories.

Some occupation groups are related closely to certain industries. Operators of transportation equipment, farm operators and workers, and private household workers account for major portions of their respective industries of transportation, agriculture, and private households. However, the industry categories include persons in other occupations. For example, persons employed in agriculture include truck drivers and bookkeepers; persons employed in the transportation industry include mechanics, freight handlers, and payroll clerks; and persons employed in the private household industry include occupations such as chauffeur, gardener, and secretary.

Class of Worker

The data on class of worker were derived from answers to questionnaire item 30. The information on class of worker refers to the same job as a respondent's industry and occupation and categorizes persons according to the type of ownership of the employing organization. The class of worker categories are defined as follows:

Private Wage and Salary Workers—Includes persons who worked for wages, salary, commission, tips, pay-in-kind, or piece rates for a private for profit employer or a private not-for-profit, tax-exempt or charitable organization. Self-employed persons whose business was incorporated are included with private wage and salary workers because they are paid employees of their own companies. Some tabulations present data separately for these subcategories: ''For profit,'' ''Not for profit,'' and ''Own business incorporated.''

Employees of foreign governments, the United Nations, or other formal international organizations were classified as ''Private-not-for-profit.''

Government Workers—Includes persons who were employees of any local, State, or Federal governmental unit, regardless of the activity of the particular agency. For some tabulations, the data were presented separately for the three levels of government.

Self-Employed Workers—Includes persons who worked for profit or fees in their own unincorporated business, profession, or trade, or who operated a farm.

Unpaid Family Workers—Includes persons who worked 15 hours or more without pay in a business or on a farm operated by a relative.

Salaried/ Self-Employed—In tabulations that categorize persons as either salaried or self-employed, the salaried category includes private and government wage and salary workers; self-employed includes self-employed persons and unpaid family workers.

The industry category, ''Public administration,'' is limited to regular government functions such as legislative, judicial, administrative, and regulatory activities of governments. Other government organizations such as schools, hospitals, liquor stores, and bus lines are classified by industry according to the activity in which they are engaged. On the other hand, the class of worker government categories include all government workers.

Occasionally respondents supplied industry, occupation, or class of worker descriptions which were not sufficiently specific for precise classification or did not report on these items at all. Some of these cases were corrected through the field editing process and during the coding and tabulation operations. In the coding operation, certain types of incomplete entries were corrected using the *Alphabetical Index of Industries and Occupations*. For example, it was possible in certain situations to assign an industry code based on the occupation reported.

Following the coding operations, there was a computer edit and an allocation process. The edit first determined whether a respondent was in the universe which required an industry and occupation code. The codes for the three items (industry, occupation, and class of worker) were checked to ensure they were valid and were edited for their relation to each other. Invalid and inconsistent codes were either blanked or changed to a consistent code.

If one or more of the three codes were blank after the edit, a code was assigned from a ''similar'' person based on other items such as age, sex, education, farm or nonfarm residence, and weeks worked. If all the labor force and income data also were blank, all these economic items were assigned from one other person who provided all the necessary data.

Comparability—Comparability of industry and occupation data was affected by a number of factors, primarily the systems used to classify the questionnaire responses. For both the industry and occupation classification systems,

the basic structures were generally the same from 1940 to 1970, but changes in the individual categories limited comparability of the data from one census to another. These changes were needed to recognize the ''birth'' of new industries and occupations, the ''death'' of others, and the growth and decline in existing industries and occupations, as well as, the desire of analysts and other users for more detail in the presentation of the data. Probably the greatest cause of incomparability is the movement of a segment of a category to a different category in the next census. Changes in the nature of jobs and respondent terminology, and refinement of category composition made these movements necessary.

In the 1990 census, the industry classification had minor revisions to reflect recent changes to the SIC. The 1990 occupational classification system is essentially the same as that for the 1980 census. However, the conversion of the census classification to the SOC in 1980 meant that the 1990 classification system was less comparable to the classifications used prior to the 1980 census.

Other factors that affected data comparability included the universe to which the data referred (in 1970, the age cutoff for labor force was changed from 14 years to 16 years); how the industry and occupation questions were worded on the questionnaire (for example, important changes were made in 1970); improvements in the coding procedures (the Employer Name List technique was introduced in 1960); and how the ''not reported'' cases are handled. Prior to 1970, they were placed in the residual categories, ''Industry not reported'' and ''Occupation not reported.'' In 1970, an allocation process was introduced that assigned these cases to major groups. In 1990, as in 1980, the ''Not reported'' cases were assigned to individual categories. Therefore, the 1980 and 1990 data for individual categories included some numbers of persons who were tabulated in a ''Not reported'' category in previous censuses.

The following publications contain information on the various factors affecting comparability and are particularly useful for understanding differences in the occupation and industry information from earlier censuses: U.S. Bureau of the Census, *Changes Between the 1950 and 1960 Occupation and Industry Classifications With Detailed Adjustments of 1950 Data to the 1960 Classifications*, Technical Paper No. 18, 1968; U.S. Bureau of the Census, *1970 Occupation and Industry Classification Systems in Terms of their 1960 Occupation and Industry Elements*, Technical Paper No. 26, 1972; and U.S. Bureau of the Census, *The Relationship Between the 1970 and 1980 Industry and Occupation Classification Systems*, Technical Paper No. 59, 1988. For citations for earlier census years, see the 1980 Census of Population report, PC80-1-D, *Detailed Population Characteristics*.

The 1990 census introduced an additional class of worker category for ''private not-for-profit'' employers. This category is a subset of the 1980 category ''employee of private employer'' so there is no comparable data before 1990. Also in 1990, employees of foreign governments, the United Nations, etc., are classified as ''private not-for-profit,'' rather than Federal Government as in 1970 and 1980. While in theory, there was a change in comparability, in practice, the small number of U.S. residents working for foreign governments made this change negligible.

Comparability between the statistics on industry and occupation from the 1990 census and statistics from other sources is affected by many of the factors described in the section on ''Employment Status.'' These factors are primarily geographic differences between residence and place of work, different dates of reference, and differences in counts because of dual job holding. Industry data from population censuses cover all industries and all kinds of workers, whereas, data from establishments often excluded private household workers, government workers, and the self-employed. Also, the replies from household respondents may have differed in detail and nature from those obtained from establishments.

Occupation data from the census and data from government licensing agencies, professional associations, trade unions, etc., may not be as comparable as expected. Organizational listings often include persons not in the labor force or persons devoting all or most of their time to another occupation; or the same person may be included in two or more different listings. In addition, relatively few organizations, except for those requiring licensing, attained complete coverage of membership in a particular occupational field.

RACE

The data on race were derived from answers to questionnaire item 4, which was asked of all persons. The concept of race as used by the Census Bureau reflects self-identification; it does not denote any clear-cut scientific definition of biological stock. The data for race represent self-classification by people according to the race with which they most closely identify. Furthermore, it is recognized that the categories of the race item include both racial and national origin or socio-cultural groups.

During direct interviews conducted by enumerators, if a person could not provide a single response to the race question, he or she was asked to select, based on self-identification, the group which best described his or her racial identity. If a person could not provide a single race response, the race of the mother was used. If a single race response could not be provided for the person's mother, the first race reported by the person was used. In all cases where occupied housing units, households, or families are classified by race, the race of the householder was used.

The racial classification used by the Census Bureau generally adheres to the guidelines in Federal Statistical Directive No. 15, issued by the Office of Management and Budget, which provides standards on ethnic and racial categories for statistical reporting to be used by all Federal agencies. The racial categories used in the 1990 census data products are provided below.

White—Includes persons who indicated their race as ''White'' or reported entries such as Canadian, German, Italian, Lebanese, Near Easterner, Arab, or Polish.

Black—Includes persons who indicated their race as ''Black or Negro'' or reported entries such as African American, Afro-American, Black Puerto Rican, Jamaican, Nigerian, West Indian, or Haitian.

American Indian, Eskimo, or Aleut—Includes persons who classified themselves as such in one of the specific race categories identified below.

American Indian—Includes persons who indicated their race as ''American Indian,'' entered the name of an Indian tribe, or reported such entries as Canadian Indian, French-American Indian, or Spanish-American Indian.

American Indian Tribe—Persons who identified themselves as American Indian were asked to report their enrolled or principal tribe. Therefore, tribal data in tabulations reflect the written tribal entries reported on the questionnaires. Some of the entries (for example, Iroquois, Sioux, Colorado River, and Flathead) represent nations or reservations.

The information on tribe is based on self-identification and therefore does not reflect any designation of Federally- or State-recognized tribe. Information on American Indian tribes is presented in summary tape files and special data products. The information is derived from the American Indian Detailed Tribal Classification List for the 1990 census. The classification list represents all tribes, bands, and clans that had a specified number of American Indians reported on the census questionnaire.

Eskimo—Includes persons who indicated their race as ''Eskimo'' or reported entries such as Arctic Slope, Inupiat, and Yupik.

Aleut—Includes persons who indicated their race as ''Aleut'' or reported entries such as Alutiiq, Egegik, and Pribilovian.

Asian or Pacific Islander—Includes persons who reported in one of the Asian or Pacific Islander groups listed on the questionnaire or who provided write-in responses such as Thai, Nepali, or Tongan. A more detailed listing of the groups comprising the Asian or Pacific Islander population is presented in figure 2 below. In some data products, information is presented separately for the Asian population and the Pacific Islander population.

Asian—Includes ''Chinese,'' ''Filipino,'' ''Japanese,'' ''Asian Indian,'' ''Korean,'' ''Vietnamese,'' and ''Other Asian.'' In some tables, ''Other Asian'' may not be shown separately, but is included in the total Asian population.

Chinese—Includes persons who indicated their race as ''Chinese'' or who identified themselves as Cantonese, Tibetan, or Chinese American. In standard census reports, persons who reported as ''Taiwanese'' or ''Formosan'' are included here with Chinese. In special reports on the Asian or Pacific Islander population, information on persons who identified themselves as Taiwanese are shown separately.

Filipino—Includes persons who indicated their race as ''Filipino'' or reported entries such as Philipino, Philipine, or Filipino American.

Japanese—Includes persons who indicated their race as ''Japanese'' and persons who identified themselves as Nipponese or Japanese American.

Asian Indian—Includes persons who indicated their race as ''Asian Indian'' and persons who identified themselves as Bengalese, Bharat, Dravidian, East Indian, or Goanese.

Korean—Includes persons who indicated their race as ''Korean'' and persons who identified themselves as Korean American.

Vietnamese—Includes persons who indicated their race as ''Vietnamese'' and persons who identified themselves as Vietnamese American.

Cambodian—Includes persons who provided a write-in response such as Cambodian or Cambodia.

Hmong—Includes persons who provided a write-in response such as Hmong, Laohmong, or Mong.

Laotian—Includes persons who provided a write-in response such as Laotian, Laos, or Lao.

Thai—Includes persons who provided a write-in response such as Thai, Thailand, or Siamese.

Other Asian—Includes persons who provided a write-in response of Bangladeshi, Burmese, Indonesian, Pakistani, Sri Lankan, Amerasian, or Eurasian. See figure 2 for other groups comprising ''Other Asian.''

Pacific Islander—Includes persons who indicated their race as ''Pacific Islander'' by classifying themselves into one of the following groups or identifying themselves as one of the Pacific Islander cultural groups of Polynesian, Micronesian, or Melanesian.

Hawaiian—Includes persons who indicated their race as ''Hawaiian'' as well as persons who identified themselves as Part Hawaiian or Native Hawaiian.

Samoan—Includes persons who indicated their race as ''Samoan'' or persons who identified themselves as American Samoan or Western Samoan.

Guamanian—Includes persons who indicated their race as ''Guamanian'' or persons who identified themselves as Chamorro or Guam.

Other Pacific Islander—Includes persons who provided a write-in response of a Pacific Islander group such as Tahitian, Northern Mariana Islander, Palauan, Fijian, or a cultural group such as Polynesian, Micronesian, or Melanesian. See figure 2 for other groups comprising ''Other Pacific Islander.''

Other Race—Includes all other persons not included in the ''White,'' ''Black,'' ''American Indian, Eskimo, or Aleut,'' and the ''Asian or Pacific Islander'' race categories described above. Persons reporting in the ''Other race'' category and providing write-in entries such as multiracial, multiethnic, mixed, interracial, Wesort, or a Spanish/Hispanic origin group (such as Mexican, Cuban, or Puerto Rican) are included here.

Written entries to three categories on the race item—''Indian (Amer.),'' ''Other Asian or Pacific Islander (API),'' and ''Other race''—were reviewed, edited, and coded by subject matter specialists. (For more information on the coding operation, see the section below that discusses ''Comparability.'')

The written entries under ''Indian (Amer.)'' and ''Other Asian or Pacific Islander (API)'' were reviewed and coded during 100-percent processing of the 1990 census questionnaires. A substantial portion of the entries for the ''Other race'' category also were reviewed, edited, and coded during the 100-percent processing. The remaining entries under ''Other race'' underwent review and coding during sample processing. Most of the written entries reviewed and coded during sample processing were those indicating Hispanic origin such as Mexican, Cuban, or Puerto Rican.

If the race entry for a member of a household was missing on the questionnaire, race was assigned based upon the reported entries of race by other household members using specific rules of precedence of household relationship. For example, if race was missing for the daughter of the householder, then the race of her mother (as female householder or female spouse) would be assigned. If there was no female householder or spouse in the household, the daughter would be assigned her father's (male householder) race. If race was not reported for anyone in the household, the race of a householder in a previously processed household was assigned. This procedure is a variation of the general imputation procedures described in Appendix C, Accuracy of the Data.

Limitation of the Data—In the 1980 census, a relatively high proportion (20 percent) of American Indians did not report any tribal entry in the race item. Evaluation of the pre-census tests indicated that changes made for the 1990 race item should improve the reporting of tribes in the rural areas (especially on reservations) for the 1990 census. The results for urban areas were inconclusive. Also, the precensus tests indicated that there may be overreporting of the Cherokee tribe. An evaluation of 1980 census data showed overreporting of Cherokee in urban areas or areas where the number of American Indians was sparse.

In the 1990 census, respondents sometimes did not fill in a circle or filled the ''Other race'' circle and wrote in a response, such as Arab, Polish, or African American in the shared write-in box for ''Other race'' and ''Other API'' responses. During the automated coding process, these responses were edited and assigned to the appropriate racial designation. Also, some Hispanic origin persons did not fill in a circle, but provided entries such as Mexican or Puerto Rican. These persons were classified in the ''Other race'' category during the coding and editing process. There may be some minor differences between sample data and 100-percent data because sample processing included additional edits not included in the 100-percent processing.

Figure 2. **Asian or Pacific Islander Groups Reported in the 1990 Census**

Asian	Pacific Islander
Chinese	Hawaiian
Filipino	Samoan
Japanese	Guamanian
Asian Indian	Other Pacific Islander[1]
Korean	Carolinian
Vietnamese	Fijian
Cambodian	Kosraean
Hmong	Melanesian[3]
Laotian	Micronesian[3]
Thai	Northern Mariana Islander
Other Asian[1]	Palauan
Bangladeshi	Papua New Guinean
Bhutanese	Ponapean (Pohnpeian)
Borneo	Polynesian[3]
Burmese	Solomon Islander
Celebesian	Tahitian
Ceram	Tarawa Islander
Indochinese	Tokelauan
Indonesian	Tongan
Iwo-Jiman	Trukese (Chuukese)
Javanese	Yapese
Malayan	Pacific Islander, not specified
Maldivian	
Nepali	
Okinawan	
Pakistani	
Sikkim	
Singaporean	
Sri Lankan	
Sumatran	
Asian, not specified[2]	

[1]In some data products, specific groups listed under ''Other Asian'' or ''Other Pacific Islander'' are shown separately. Groups not shown are tabulated as ''All other Asian'' or ''All other Pacific Islander,'' respectively.

[2]Includes entries such as Asian American, Asian, Asiatic, Amerasian, and Eurasian.

[3]Polynesian, Micronesian, and Melanesian are Pacific Islander cultural groups.

Comparability—Differences between the 1990 census and earlier censuses affect the comparability of data for certain racial groups and American Indian tribes. The 1990 census was the first census to undertake, on a 100-percent basis, an automated review, edit, and coding operation for written responses to the race item. The automated coding system used in the 1990 census greatly reduced the potential for error associated with a clerical review. Specialists with a thorough knowledge of the race subject matter reviewed, edited, coded, and resolved inconsistent or incomplete responses. In the 1980 census, there was only a limited clerical review of the race responses on the 100-percent forms with a full clerical review conducted only on the sample questionnaires.

Another major difference between the 1990 and preceding censuses is the handling of the write-in responses for the Asian or Pacific Islander populations. In addition to the nine Asian or Pacific Islander categories shown on the questionnaire under the spanner ''Asian or Pacific Islander (API),'' the 1990 census race item provided a new residual category, ''Other API,'' for Asian or Pacific Islander persons who did not report in one of the listed Asian or Pacific Islander groups. During the coding operation, write-in responses for ''Other API'' were reviewed, coded, and assigned to the appropriate classification. For example, in 1990, a write-in entry of Laotian, Thai, or Javanese is classified as ''Other Asian,'' while a write-in entry of Tongan or Fijian is classified as ''Other Pacific Islander.'' In the 1990 census, these persons were able to identify as ''Other API'' in both the 100-percent and sample operations.

In the 1980 census, the nine Asian or Pacific Islander groups were also listed separately. However, persons not belonging to these nine groups wrote in their specific racial group under the ''Other'' race category. Persons with a written entry such as Laotian, Thai, or Tongan, were tabulated and published as ''Other race'' in the 100-percent processing operation in 1980, but were reclassified as ''Other Asian and Pacific Islander'' in 1980 sample tabulations. In 1980 special reports on the Asian or Pacific Islander populations, data were shown separately for ''Other Asian'' and ''Other Pacific Islander.''

The 1970 questionnaire did not have separate race categories for Asian Indian, Vietnamese, Samoan, and Guamanian. These persons indicated their race in the ''Other'' category and later, through the editing process, were assigned to a specific group. For example, in 1970, Asian Indians were reclassified as ''White,'' while Vietnamese, Guamanians, and Samoans were included in the ''Other'' category.

Another difference between 1990 and preceding censuses is the approach taken when persons of Spanish/ Hispanic origin did not report in a specific race category but reported as ''Other race'' or ''Other.'' These persons commonly provided a write-in entry such as Mexican, Venezuelan, or Latino. In the 1990 and 1980 censuses, these entries remained in the ''Other race'' or ''Other'' category, respectively. In the 1970 census, most of these persons were included in the ''White'' category.

REFERENCE WEEK

The data on labor force status and journey to work were related to the reference week; that is, the calendar week preceding the date on which the respondents completed their questionnaires or were interviewed by enumerators. This week is not the same for all respondents since the enumeration was not completed in one week. The occurrence of holidays during the enumeration period could affect the data on actual hours worked during the reference week, but probably had no effect on overall measurement of employment status (see the discussion below on ''Comparability'').

Comparability—The reference weeks for the 1990 and 1980 censuses differ in that Passover and Good Friday occurred in the first week of April 1980, but in the second week of April 1990. Many workers presumably took time off for those observances. The differing occurrence of these holidays could affect the comparability of the 1990 and 1980 data on actual hours worked for some areas if the respective weeks were the reference weeks for a significant number of persons. The holidays probably did not affect the overall measurement of employment status since this information was based on work activity during the entire reference week.

SCHOOL ENROLLMENT AND LABOR FORCE STATUS

Tabulation of data on enrollment, educational attainment, and labor force status for the population 16 to 19 years old allows for calculation of the proportion of the age group who are not enrolled in school and not high school graduates or ''dropouts'' and an unemployment rate for the ''dropout'' population. Definitions of the three topics and descriptions of the census items from which they were derived are presented in ''Educational Attainment,'' ''Employment Status,'' and ''School Enrollment and Type of School.'' The published tabulations include both the civilian and Armed Forces populations, but labor force status is provided for the civilian population only. Therefore, the component labor force statuses may not add to the total lines *enrolled in school, high school graduate,* and *not high school graduate.* The difference is Armed Forces.

Comparability—The tabulation of school enrollment by labor force status is similar to that published in 1980 census reports. The 1980 census tabulation included a single data line for Armed Forces; however, enrollment, attainment, and labor force status data were shown for the civilian population only. In 1970, a tabulation was included for 16 to 21 year old males not attending school.

SEX

The data on sex were derived from answers to questionnaire item 3, which was asked of all persons. For most cases in which sex was not reported, it was determined by the appropriate entry from the person's given name and household relationship. Otherwise, sex was imputed according to the relationship to the householder and the age and marital status of the person. For more information on imputation, see Appendix C, Accuracy of the Data.

Sex Ratio—A measure derived by dividing the total number of males by the total number of females and multiplying by 100.

Comparability—A question on the sex of individuals has been asked of the total population in every census.

APPENDIX C.
Accuracy of the Data

CONTENTS

INTRODUCTION

The data contained in this data product are based on the 1990 census sample. The data are estimates of the actual figures that would have been obtained from a complete count. Estimates derived from a sample are expected to be different from the 100-percent figures because they are subject to sampling and nonsampling errors. Sampling error in data arises from the selection of persons and housing units to be included in the sample. Nonsampling error affects both sample and 100-percent data, and is introduced as a result of errors that may occur during the collection and processing phases of the census. Provided below is a detailed discussion of both types of errors and a description of the estimation procedures.

SAMPLE DESIGN

Every person and housing unit in the United States was asked certain basic demographic and housing questions (for example, race, age, marital status, housing value, or rent). A sample of these persons and housing units was asked more detailed questions about such items as income, occupation, and housing costs in addition to the basic demographic and housing information. The primary sampling unit for the 1990 census was the housing unit, including all occupants. For persons living in group quarters, the sampling unit was the person. Persons in group quarters were sampled at a 1-in-6 rate.

The sample designation method depended on the data collection procedures. Approximately 95 percent of the population was enumerated by the mailback procedure. In these areas, the Bureau of the Census either purchased a commercial mailing list, which was updated by the United States Postal Service and Census Bureau field staff, or prepared a mailing list by canvassing and listing each address in the area prior to Census Day. These lists were computerized and the appropriate units were electronically designated as sample units. The questionnaires were either mailed or hand-delivered to the addresses with instructions to complete and mail back the form.

Housing units in governmental units with a precensus (1988) estimated population of fewer than 2,500 persons were sampled at 1-in-2. Governmental units were defined for sampling purposes as all incorporated places, all counties, all county equivalents such as parishes in Louisiana, and all minor civil divisions in Connecticut, Maine, Massachusetts, Michigan, Minnesota, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, and Wisconsin. Housing units in census tracts and block numbering areas (BNA's) with a precensus housing unit count below 2,000 housing units were sampled at 1-in-6 for those portions not in small governmental units (governmental units with a population less than 2,500). Housing units within census tracts and BNA's with 2,000 or more housing units were sampled at 1-in-8 for those portions not in small governmental units.

In list/ enumerate areas (about 5 percent of the population), each enumerator was given a blank address register with designated sample lines. Beginning about Census Day, the enumerator systematically canvassed an assigned area and listed all housing units in the address register in the order they were encountered. Completed questionnaires, including sample information for any housing unit listed on a designated sample line, were collected. For all governmental units with fewer than 2,500 persons in list/ enumerate areas, a 1-in-2 sampling rate was used. All other list/ enumerate areas were sampled at 1-in-6.

Housing units in American Indian reservations, tribal jurisdiction statistical areas, and Alaska Native villages were sampled according to the same criteria as other governmental units, except the sampling rates were based on the size of the American Indian and Alaska Native population in those areas as measured in the 1980 census. Trust lands were sampled at the same rate as their associated American Indian reservations. Census designated places in Hawaii were sampled at the same rate as governmental units because the Census Bureau does not recognize incorporated places in Hawaii.

The purpose of using variable sampling rates was to provide relatively more reliable estimates for small areas and decrease respondent burden in more densely populated areas while maintaining data reliability. When all sampling rates were taken into account across the Nation, approximately one out of every six housing units in the Nation was included in the 1990 census sample.

CONFIDENTIALITY OF THE DATA

To maintain the confidentiality required by law (Title 13, United States Code), the Bureau of the Census applies a confidentiality edit to the 1990 census data to assure that

published data do not disclose information about specific individuals, households, or housing units. As a result, a small amount of uncertainty is introduced into the estimates of census characteristics. The sample itself provides adequate protection for most areas for which sample data are published since the resulting data are estimates of the actual counts; however, small areas require more protection. The edit is controlled so that the basic structure of the data is preserved.

The confidentiality edit is implemented by selecting a small subset of individual households from the internal sample data files and blanking a subset of the data items on these household records. Responses to those data items were then imputed using the same imputation procedures that were used for nonresponse. A larger subset of households is selected for the confidentiality edit for small areas to provide greater protection for these areas. The editing process is implemented in such a way that the quality and usefulness of the data were preserved.

ERRORS IN THE DATA

Since statistics in this data product are based on a sample, they may differ somewhat from 100-percent figures that would have been obtained if all housing units, persons within those housing units, and persons living in group quarters had been enumerated using the same questionnaires, instructions, enumerators, etc. The sample estimate also would differ from other samples of housing units, persons within those housing units, and persons living in group quarters. The deviation of a sample estimate from the average of all possible samples is called the sampling error. The standard error of a sample estimate is a measure of the variation among the estimates from all the possible samples and thus is a measure of the precision with which an estimate from a particular sample approximates the average result of all possible samples. The sample estimate and its estimated standard error permit the construction of interval estimates with prescribed confidence that the interval includes the average result of all possible samples. Described below is the method of calculating standard errors and confidence intervals for the data in this product.

In addition to the variability which arises from the sampling procedures, both sample data and 100-percent data are subject to nonsampling error. Nonsampling error may be introduced during any of the various complex operations used to collect and process census data. For example, operations such as editing, reviewing, or handling questionnaires may introduce error into the data. A detailed discussion of the sources of nonsampling error is given in the section on ''Control of Nonsampling Error'' in this appendix.

Nonsampling error may affect the data in two ways. Errors that are introduced randomly will increase the variability of the data and should therefore be reflected in the standard error. Errors that tend to be consistent in one direction will make both sample and 100-percent data biased in that direction. For example, if respondents consistently tend to under-report their income, then the resulting counts of households or families by income category will tend to be understated for the higher income categories and overstated for the lower income categories. Such biases are not reflected in the standard error.

Calculation of Standard Errors

Totals and Percentages—Tables A through C in this appendix contain the information necessary to calculate the standard errors of sample estimates in this data product. To calculate the standard error, it is necessary to know the basic standard error for the characteristic (given in table A or B) that would result under a simple random sample design (of persons, households, or housing units) and estimation technique; the design factor for the particular characteristic estimated (given in table C); and the number of persons or housing units in the tabulation area and the percent of these in the sample. For machine-readable products, the percent-in-sample is included in a data matrix on the file for each tabulation area. In printed reports, the percent-in-sample is provided in data tables at the end of the statistical tables that compose the report. The design factors reflect the effects of the actual sample design and complex ratio estimation procedure used for the 1990 census. Tape purchasers will receive table C, the table of design factors, as a supplement to the technical documentation. Table C is included in this appendix for printed reports.

The steps given below should be used to calculate the standard error of an estimate of a total or a percentage contained in this product. A percentage is defined here as a ratio of a numerator to a denominator where the numerator is a subset of the denominator. For example, the proportion of Black teachers is the ratio of Black teachers to all teachers.

1. Obtain the standard error from table A or B (or use the formula given below the table) for the estimated total or percentage, respectively.
2. Find the geographic area to which the estimate applies in the appropriate percent-in-sample table or appropriate matrix, and obtain the person or housing unit ''percent-in-sample'' figure for this area. Use the person ''percent-in-sample'' figure for person and family characteristics. Use the housing unit ''percent-in-sample'' figure for housing unit characteristics.
3. Use table C to obtain the design factor for the characteristic (for example, employment status, school enrollment) and the range that contains the percent-in-sample with which you are working. Multiply the basic standard error by this factor.

The unadjusted standard errors of zero estimates or of very small estimated totals or percentages will approach zero. This is also the case for very large percentages or

estimated totals that are close to the size of the tabulation areas to which they correspond. Nevertheless, these estimated totals and percentages still are subject to sampling and nonsampling variability, and an estimated standard error of zero (or a very small standard error) is not appropriate. For estimated percentages that are less than 2 or greater than 98, use the basic standard errors in table B that appear in the ''2 or 98'' row. For an estimated total that is less than 50 or within 50 of the total size of the tabulation area, use a basic standard error of 16.

An illustration of the use of the tables is given in the section entitled ''Use of Tables to Compute Standard Errors.''

Sums and Differences—The standard errors estimated from these tables are not directly applicable to sums of and differences between two sample estimates. To estimate the standard error of a sum or difference, the tables are to be used somewhat differently in the following three situations:

1. For the sum of or difference between a sample estimate and a 100-percent value, use the standard error of the sample estimate. The complete count value is not subject to sampling error.

2. For the sum of or difference between two sample estimates, the appropriate standard error is approximately the square root of the sum of the two individual standard errors squared; that is, for standard errors:

$$SE(X) \text{ and } SE(Y) \text{ of estimates } X \text{ and } Y$$

$$SE(X \pm Y) = SE(X \pm Y) = \sqrt{SE(X)^2 \pm SE(Y)^2}$$

   This method, however, will underestimate (overestimate) the standard error if the two items in a sum are highly positively (negatively) correlated or if the two items in a difference are highly negatively (positively) correlated. This method may also be used for the difference between (or sum of) sample estimates from two censuses or from a census sample and another survey. The standard error for estimates not based on the 1990 census sample must be obtained from an appropriate source outside of this appendix.

3. For the differences between two estimates, one of which is a subclass of the other, use the tables directly where the calculated difference is the estimate of interest. For example, to determine the estimate of non-Black teachers, one may subtract the estimate of Black teachers from the estimate of total teachers. To determine the standard error of the estimate of non-Black teachers apply the above formula directly.

Ratios—Frequently, the statistic of interest is the ratio of two variables, where the numerator is not a subset of the denominator. For example, the ratio of teachers to students in public elementary schools. The standard error of the ratio between two sample estimates is estimated as follows:

1. If the ratio is a proportion, then follow the procedure outlined for ''Totals and Percentages.''

2. If the ratio is not a proportion, then approximate the standard error using the formula below.

$$SE(X/Y) = \frac{\sqrt{SE(X)^2 - SE(X/Y)^2 \times SE(Y)^2}}{Y}$$

Medians—For the standard error of the median of a characteristic, it is necessary to examine the distribution from which the median is derived, as the size of the base and the distribution itself affect the standard error. An approximate method is given here. As the first step, compute one-half of the number on which the median is based (refer to this result as N/2). Treat N/2 as if it were an ordinary estimate and obtain its standard error as instructed above. Compute the desired confidence interval about N/2. Starting with the lowest value of the characteristic, cumulate the frequencies in each category of the characteristic until the sum equals or first exceeds the lower limit of the confidence interval about N/2. By linear interpolation, obtain a value of the characteristic corresponding to this sum. This is the lower limit of the confidence interval of the median. In a similar manner, continue cumulating frequencies until the sum equals or exceeds the count in excess of the upper limit of the interval about N/2. Interpolate as before to obtain the upper limit of the confidence interval for the estimated median.

When interpolation is required in the upper open-ended interval of a distribution to obtain a confidence bound, use 1.5 times the lower limit of the open-ended confidence interval as the upper limit of the open-ended interval.

Confidence Intervals

A sample estimate and its estimated standard error may be used to construct confidence intervals about the estimate. These intervals are ranges that will contain the average value of the estimated characteristic that results over all possible samples, with a known probability. For example, if all possible samples that could result under the 1990 census sample design were independently selected and surveyed under the same conditions, and if the estimate and its estimated standard error were calculated for each of these samples, then:

1. Approximately 68 percent of the intervals from one estimated standard error below the estimate to one estimated standard error above the estimate would contain the average result from all possible samples;

2. Approximately 90 percent of the intervals from 1.645 times the estimated standard error below the estimate to 1.645 times the estimated standard error above the estimate would contain the average result from all possible samples.

3. Approximately 95 percent of the intervals from two estimated standard errors below the estimate to two estimated standard errors above the estimate would contain the average result from all possible samples.

The intervals are referred to as 68 percent, 90 percent, and 95 percent confidence intervals, respectively.

The average value of the estimated characteristic that could be derived from all possible samples is or is not contained in any particular computed interval. Thus, we cannot make the statement that the average value has a certain probability of falling between the limits of the calculated confidence interval. Rather, one can say with a specified probability of confidence that the calculated confidence interval includes the average estimate from all possible samples (approximately the 100-percent value).

Confidence intervals also may be constructed for the ratio, sum of, or difference between two sample figures. This is done by first computing the ratio, sum, or difference, then obtaining the standard error of the ratio, sum, or difference (using the formulas given earlier), and finally forming a confidence interval for this estimated ratio, sum, or difference as above. One can then say with specified confidence that this interval includes the ratio, sum, or difference that would have been obtained by averaging the results from all possible samples.

The estimated standard errors given in this appendix do not include all portions of the variability due to nonsampling error that may be present in the data. The standard errors reflect the effect of simple response variance, but not the effect of correlated errors introduced by enumerators, coders, or other field or processing personnel. Thus, the standard errors calculated represent a lower bound of the total error. As a result, confidence intervals formed using these estimated standard errors may not meet the stated levels of confidence (i.e., 68, 90, or 95 percent). Thus, some care must be exercised in the interpretation of the data in this data product based on the estimated standard errors.

A standard sampling theory text should be helpful if the user needs more information about confidence intervals and nonsampling errors.

Use of Tables to Compute Standard Errors

The following is a hypothetical example of how to compute a standard error of a total and a percentage. Suppose a particular data table shows that for City A 9,948 persons out of all 15,888 persons age 16 years and over were in the civilian labor force. The percent-in-sample table lists City A with a percent-in-sample of 16.0 percent (Persons column). The column in table C which includes 16.0 percent-in-sample shows the design factor to be 1.1 for ''Employment status.''

The basic standard error for the estimated total 9,948 may be obtained from table A or from the formula given below table A. In order to avoid interpolation, the use of the formula will be demonstrated here. Suppose that the total population of City A was 21,220. The formula for the basic standard error, SE, is

$$SE\$9{,}948\$ = \sqrt{5\$9{,}948\$ \; \$1\$9{,}948\$21{,}220\$}$$

$$= 163 \text{ persons.}$$

The standard error of the estimated 9,948 persons 16 years and over who were in the civilian labor force is found by multiplying the basic standard error 163 by the design factor, 1.1 from table C. This yields an estimated standard error of 179 for the total number of persons 16 years and over in City A who were in the civilian labor force.

The estimated percent of persons 16 years and over who were in the civilian labor force in City A is 62.6. From table B, the unadjusted standard error is found to be approximately 0.85 percentage points. The standard error for the estimated 62.6 percent of persons 16 years and over who were in the civilian labor force is 0.85 x 1.1 = 0.94 percentage points.

A note of caution concerning numerical values is necessary. Standard errors of percentages derived in this manner are approximate. Calculations can be expressed to several decimal places, but to do so would indicate more precision in the data than is justifiable. Final results should contain no more than two decimal places when the estimated standard error is one percentage point (i.e., 1.00) or more.

In the previous example, the standard error of the 9,948 persons 16 years and over in City A who were in the civilian labor force was found to be 179. Thus, a 90 percent confidence interval for this estimated total is found to be:

$$\$9{,}948 \; \$ \; 1.645\$179\$\$ \text{ to } \$9{,}948 \; \$ \; 1.645\$179\$\$$$

or

9,654 to 10,242

One can say, with about 90 percent confidence, that this interval includes the value that would have been obtained by averaging the results from all possible samples.

The following is an illustration of the calculation of standard errors and confidence intervals when a difference between two sample estimates is obtained. For example, suppose the number of persons in City B age 16 years and over who were in the civilian labor force was 9,314 and the total number of persons 16 years and over was 16,666. Further suppose the population of City B was 25,225. Thus, the estimated percentage of persons 16 years and over who were in the civilian labor force is 55.9 percent. The unadjusted standard error determined using the formula provided at the bottom of table B is 0.86

percentage points. We find that City B had a percent-in-sample of 15.7. The range which includes 15.7 percent-in-sample in table C shows the design factor to be 1.1 for ''Employment Status.'' Thus, the approximate standard error of the percentage (55.9 percent) is 0.86 x 1.1 = 0.95 percentage points.

Now suppose that one wished to obtain the standard error of the difference between City A and City B of the percentages of persons who were 16 years and over and who were in the civilian labor force. The difference in the percentages of interest for the two cities is:

$$62.6 - 55.9 = 6.7 \text{ percent.}$$

Using the results of the previous example:

$$SE\$6.7\$ = \sqrt{\$SE\$62.6\$\$^2\$\$SE\$55.9\$\$^2} = \sqrt{\$0.94\$^2\$\$0.95\$^2}$$

$$= 1.34 \text{ percentage points}$$

The 90 percent confidence interval for the difference is formed as before:

$$\$6.70 \$ 1.645\$1.34\$\$ \text{ to } \$6.70 \$ 1.645\$1.34\$\$$$

or

4.50 to 8.90

One can say with 90 percent confidence that the interval includes the difference that would have been obtained by averaging the results from all possible samples.

For reasonably large samples, ratio estimates are normally distributed, particularly for the census population. Therefore, if we can calculate the standard error of a ratio estimate then we can form a confidence interval around the ratio. Suppose that one wished to obtain the standard error of the ratio of the estimate of persons who were 16 years and over and who were in the civilian labor force in City A to the estimate of persons who were 16 years and over and who were in the civilian labor force in City B. The ratio of the two estimates of interest is:

$$9948/\,9314 = 1.07$$

$$SE\ \$1.07\$ = \$\frac{9948}{9314}\$\ \$\sqrt{\frac{179^2}{\$9948\$^2} \$ \frac{188^2}{\$9314\$^2}}$$

$$= .029$$

Using the results above, the 90 percent confidence interval for this ratio would be:

$$\$1.07\$1.645\$.029\$\$ \text{ to } \$1.07\$1.645\$.029\$\$$$

or

1.02 to 1.12

ESTIMATION PROCEDURE

The estimates which appear in this publication were obtained from an iterative ratio estimation procedure (iterative proportional fitting) resulting in the assignment of a weight to each sample person or housing unit record. For any given tabulation area, a characteristic total was estimated by summing the weights assigned to the persons or housing units possessing the characteristic in the tabulation area. Estimates of family or household characteristics were based on the weight assigned to the family member designated as householder. Each sample person or housing unit record was assigned exactly one weight to be used to produce estimates of all characteristics. For example, if the weight given to a sample person or housing unit had the value 6, all characteristics of that person or housing unit would be tabulated with the weight of 6. The estimation procedure, however, did assign weights varying from person to person or housing unit to housing unit. The estimation procedure used to assign the weights was performed in geographically defined ''weighting areas.'' Weighting areas generally were formed of contiguous geographic units which agreed closely with census tabulation areas within counties. Weighting areas were required to have a minimum sample of 400 persons. Weighting areas never crossed State or county boundaries. In small counties with a sample count below 400 persons, the minimum required sample condition was relaxed to permit the entire county to become a weighting area.

Within a weighting area, the ratio estimation procedure for persons was performed in four stages. For persons, the first stage applied 17 household-type groups. The second stage used two groups: sampling rate of 1-in-2; sampling rate less than 1-in-2. The third stage used the dichotomy householders/ nonhouseholders. The fourth stage applied 180 aggregate age-sex-race-Hispanic origin categories. The stages were as follows:

PERSONS

STAGE I: TYPE OF HOUSEHOLD

Group	Persons in Housing Units With a Family With Own Children Under 18
1	2 persons in housing unit
2	3 persons in housing unit
3	4 persons in housing unit
4	5 to 7 persons in housing unit
5	8 or more persons in housing unit
	Persons in Housing Units With a Family Without Own Children Under 18
6-10	2 through 8 or more persons in housing unit
	Persons in All Other Housing Units
11	1 person in housing unit
12-16	2 through 8 or more persons in housing unit
	Persons in Group Quarters
17	Persons in Group Quarters

STAGE II: SAMPLING RATES

1	Sampling rate of 1-in-2
2	Sampling rate less than 1-in-2

STAGE III: HOUSEHOLDER/ NONHOUSEHOLDER

1	Householder
2	Nonhouseholder

STAGE IV: AGE/ SEX/ RACE/ HISPANIC ORIGIN

Group	
	White
	Persons of Hispanic Origin
	Male
1	0 to 4 years
2	5 to 14 years
3	15 to 19 years
4	20 to 24 years
5	25 to 34 years
6	35 to 54 years
7	55 to 64 years
8	65 to 74 years
9	75 years and over
	Female
10-18	Same age categories as groups 1 through 9.
	Persons Not of Hispanic Origin
19-36	Same sex and age categories as groups 1 through 18.
	Black
37-72	Same age/ sex/ Hispanic origin categories as groups 1 through 36.
	Asian or Pacific Islander
73-108	Same age/ sex/ Hispanic origin categories as groups 1 through 36.
	American Indian, Eskimo, or Aleut
109-144	Same age/ sex/ Hispanic origin categories as groups 1 through 36.
	Other Race (includes those races not listed above)
145-180	Same age/ sex/ Hispanic origin categories as groups 1 through 36.

Within a weighting area, the first step in the estimation procedure was to assign an initial weight to each sample person record. This weight was approximately equal to the inverse of the probability of selecting a person for the census sample.

The next step in the estimation procedure, prior to iterative proportional fitting, was to combine categories in each of the four estimation stages, when needed to increase the reliability of the ratio estimation procedure. For each stage, any group that did not meet certain criteria for the unweighted sample count or for the ratio of the 100-percent to the initially weighted sample count, was combined, or collapsed, with another group in the same stage according to a specified collapsing pattern. At the fourth stage, an additional criterion concerning the number of complete count persons in each race/ Hispanic origin category was applied.

As the final step, the initial weights underwent four stages of ratio adjustment applying the grouping procedures described above. At the first stage, the ratio of the complete census count to the sum of the initial weights for each sample person was computed for each stage I group. The initial weight assigned to each person in a group was then multiplied by the stage I group ratio to produce an adjusted weight.

In stage II, the stage I adjusted weights were again adjusted by the ratio of the complete census count to the sum of the stage I weights for sample persons in each stage II group. Next, at stage III, the stage II weights were adjusted by the ratio of the complete census count to the sum of the stage II weights for sample persons in each stage III group. Finally, at stage IV, the stage III weights were adjusted by the ratio of the complete census count to the sum of the stage III weights for sample persons in each stage IV group. The four stages of ratio adjustment were performed two times (two iterations) in the order given above. The weights obtained from the second iteration for stage IV were assigned to the sample person records. However, to avoid complications in rounding for tabulated data, only whole number weights were assigned. For example, if the final weight of the persons in a particular group was 7.25 then 1/ 4 of the sample persons in this group were randomly assigned a weight of 8, while the remaining 3/ 4 received a weight of 7.

The ratio estimation procedure for housing units was essentially the same as that for persons, except that vacant units were treated differently. The occupied housing unit ratio estimation procedure was done in four stages, and the vacant housing unit ratio estimation procedure was done in a single stage. The first stage for occupied housing units applied 16 household type categories, while the second stage used the two sampling categories described above for persons. The third stage applied three units-in-structure categories; i.e. single units, multi-unit less than 10 and multi-unit 10 or more. The fourth stage could potentially use 200 tenure-race-Hispanic origin-value/ rent groups. The stages for ratio estimation for housing units were as follows:

OCCUPIED HOUSING UNITS

STAGE I: TYPE OF HOUSEHOLD

Group	
	Housing Units With a Family With Own Children Under 18
1	2 persons in housing unit
2	3 persons in housing unit
3	4 persons in housing unit
4	5 to 7 persons in housing unit
5	8 or more persons in housing unit
	Housing Units With a Family Without Own Children Under 18
6-10	2 through 8 or more persons in housing unit

STAGE I: TYPE OF HOUSEHOLD—Con.

All Other Housing Units

11 — 1 person in housing unit

12-16 — 2 through 8 or more persons in housing unit

STAGE II: SAMPLING RATE CATEGORY

1 — Sampling rate of 1-in-2

2 — Sampling rate less than 1-in-2

STAGE III: UNITS IN STRUCTURE

1 — Single unit structure

2 — Multi-unit structure consisting of fewer than 10 individual units

3 — Multi-unit structure consisting of 10 or more individual units

STAGE IV: TENURE/ RACE AND HISPANIC ORIGIN OF HOUSEHOLDER/ VALUE OR RENT

Group — Owner

White Householder

Householder of Hispanic Origin

Value

1 — Less than $20,000

2 — $20,000 to $39,999

3 — $40,000 to $59,999

4 — $60,000 to $79,999

5 — $80,000 to $99,999

6 — $100,000 to $149,999

7 — $150,000 to $249,999

8 — $250,000 to $299,999

9 — $300,000 or more

10 — Other[1]

Householder Not of Hispanic Origin

11-20 — Same value categories as groups 1 through 10

Black Householder

21-40 — Same Hispanic origin/ value categories as groups 1 through 20

Asian or Pacific Islander Householder

41-60 — Same Hispanic origin/ value categories as groups 1 through 20

American Indian, Eskimo, or Aleut Householder

61-80 — Same Hispanic origin/ value categories as groups 1 through 20

Householder of Other Race

81-100 — Same Hispanic origin/ value categories as groups 1 through 20

Renter

White Householder

Householder of Hispanic origin

Rent

101 — Less than $100

102 — $100 to $199

103 — $200 to $299

104 — $300 to $399

105 — $400 to $499

106 — $500 to $599

107 — $600 to $749

108 — $750 to $999

109 — $1,000 or more

110 — No cash rent

Householder Not of Hispanic Origin

111-120 — Same rent categories as groups 101 through 110

Black Householder

121-140 — Same Hispanic origin/ rent categories as groups 101 through 120

Asian or Pacific Islander Householder

141-160 — Same Hispanic origin/ rent categories as groups 101 through 120

American Indian, Eskimo, or Aleut Householder

161-180 — Same Hispanic origin/ rent categories as groups 101 through 120

Householder of Other Race

181-200 — Same Hispanic origin/ rent categories as groups 101 through 120

Vacant Housing Units

1 — Vacant for rent

2 — Vacant for sale

3 — Other vacant

[1]Value of units in this category results from other factors besides housing value alone, for example, inclusion of more than 10 acres of land, or presence of a business establishment on the premises.

The estimates produced by this procedure realize some of the gains in sampling efficiency that would have resulted if the population had been stratified into the ratio estimation groups before sampling, and if the sampling rate had been applied independently to each group. The net effect is a reduction in both the standard error and the possible bias of most estimated characteristics to levels below what would have resulted from simply using the initial, unadjusted weight. A by-product of this estimation procedure is that the estimates from the sample will, for the most part, be consistent with the complete count figures for the population and housing unit groups used in the estimation procedure.

Control of Nonsampling Error

As mentioned earlier, both sample and 100-percent data are subject to nonsampling error. This component of error could introduce serious bias into the data, and the total error could increase dramatically over that which would result purely from sampling. While it is impossible to completely eliminate nonsampling error from an operation as large and complex as the decennial census, the Bureau of the Census attempted to control the sources of such error during the collection and processing operations. Described below are the primary sources of nonsampling error and the programs instituted for control of this error. The success of these programs, however, was contingent upon how well the instructions actually were carried out during the census. As part of the 1990 census evaluation program, both the effects of these programs and the amount of error remaining after their application will be evaluated.

Undercoverage—It is possible for some households or persons to be missed entirely by the census. The undercoverage of persons and housing units can introduce biases into the data.

Several coverage improvement programs were implemented during the development of the census address list and census enumeration and processing to minimize undercoverage of the population and housing units. These programs were developed based on experience from the 1980 census and results from the 1990 census testing cycle. In developing and updating the census address list, the Census Bureau used a variety of specialized procedures in different parts of the country.

- In the large urban areas, the Census Bureau purchased and geocoded address lists. Concurrent with geocoding, the United States Postal Service (USPS) reviewed and updated this list. After the postal check, census enumerators conducted a dependent canvass and update operation. In the fall of 1989, local officials were given the opportunity to examine block counts of address listings (local review) and identify possible errors. Prior to mailout, the USPS conducted a final review.
- In small cities, suburban areas, and selected rural parts of the country, the Census Bureau created the address list through a listing operation. The USPS reviewed and updated this list, and the Census Bureau reconciled USPS corrections and updated through a field operation. In the fall of 1989, local officials participated in reviewing block counts of address listings. Prior to mailout, the USPS conducted a final review.
- The Census Bureau (rather than the USPS) conducted a listing operation in the fall of 1989 and delivered census questionnaires in selected rural and seasonal housing areas in March of 1990. In some inner-city public housing developments, whose addresses had been obtained via the purchased address list noted above, census questionnaires were also delivered by Census Bureau enumerators.

Coverage improvement programs continued during and after mailout. A recheck of units initially classified as vacant or nonexistent improved further the coverage of persons and housing units. All local officials were given the opportunity to participate in a post-census local review, and census enumerators conducted an additional recanvass. In addition, efforts were made to improve the coverage of unique population groups, such as the homeless and parolees/ probationers. Computer and clerical edits and telephone and personal visit followup also contributed to improved coverage.

More extensive discussion of the programs implemented to improve coverage will be published by the Census Bureau when the evaluation of the coverage improvement program is completed.

Respondent and Enumerator Error—The person answering the questionnaire or responding to the questions posed by an enumerator could serve as a source of error, although the questions were phrased as clearly as possible based on precensus tests, and detailed instructions for completing the questionnaire were provided to each household. In addition, respondents' answers were edited for completeness and consistency, and problems were followed up as necessary.

The enumerator may misinterpret or otherwise incorrectly record information given by a respondent; may fail to collect some of the information for a person or household; or may collect data for households that were not designated as part of the sample. To control these problems, the work of enumerators was monitored carefully. Field staff were prepared for their tasks by using standardized training packages that included hands-on experience in using census materials. A sample of the households interviewed by enumerators for nonresponse were reinterviewed to control for the possibility of data for fabricated persons being submitted by enumerators. Also, the estimation procedure was designed to control for biases that would result from the collection of data from households not designated for the sample.

Processing Error—The many phases involved in processing the census data represent potential sources for the introduction of nonsampling error. The processing of the census questionnaires includes the field editing, followup, and transmittal of completed questionnaires; the manual coding of write-in responses; and the electronic data processing. The various field, coding and computer operations undergo a number of quality control checks to insure their accurate application.

Nonresponse—Nonresponse to particular questions on the census questionnaire allows for the introduction of bias into the data, since the characteristics of the nonrespondents have not been observed and may differ from those reported by respondents. As a result, any imputation procedure using respondent data may not completely

reflect this difference either at the elemental level (individual person or housing unit) or on the average. Some protection against the introduction of large biases is afforded by minimizing nonresponse. In the census, nonresponse was reduced substantially during the field operations by the various edit and followup operations aimed at obtaining a response for every question. Characteristics for the nonresponses remaining after this operation were imputed by the computer by using reported data for a person or housing unit with similar characteristics.

EDITING OF UNACCEPTABLE DATA

The objective of the processing operation is to produce a set of data that describes the population as accurately and clearly as possible. To meet this objective, questionnaires were edited during field data collection operations for consistency, completeness, and acceptability. Questionnaires also were reviewed by census clerks for omissions, certain specific inconsistencies, and population coverage. For example, write-in entries such as ''Don't know'' or ''NA'' were considered unacceptable. For some district offices, the initial edit was automated; however, for the majority of the district offices, it was performed by clerks. As a result of this operation, a telephone or personal visit followup was made to obtain missing information. Potential coverage errors were included in the followup, as well as a sample of questionnaires with omissions and/ or inconsistencies.

Subsequent to field operations, remaining incomplete or inconsistent information on the questionnaires was assigned using imputation procedures during the final automated edit of the collected data. Imputations, or computer assignments of acceptable codes in place of unacceptable entries or blanks, are needed most often when an entry for a given item is lacking or when the information reported for a person or housing unit on that item is inconsistent with other information for that same person or housing unit. As in previous censuses, the general procedure for changing unacceptable entries was to assign an entry for a person or housing unit that was consistent with entries for persons or housing units with similar characteristics. The assignment of acceptable codes in place of blanks or unacceptable entries enhances the usefulness of the data.

Another way in which corrections were made during the computer editing process was through substitution; that is, the assignment of a full set of characteristics for a person or housing unit. When there was an indication that a housing unit was occupied but the questionnaire contained no information for the people within the household or the occupants were not listed on the questionnaire, a previously accepted household was selected as a substitute, and the full set of characteristics for the substitute was duplicated. The assignment of the full set of housing characteristics occurred when there was no housing information available. If the housing unit was determined to be occupied, the housing characteristics were assigned from a previously processed occupied unit. If the housing unit was vacant, the housing characteristics were assigned from a previously processed vacant unit.

Table A. **Unadjusted Standard Error for Estimated Totals**

[Based on a 1-in-6 simple random sample]

Estimated Total[1]	Size of publication area[2]													
	500	1,000	2,500	5,000	10,000	25,000	50,000	100,000	250,000	500,000	1,000,000	5,000,000	10,000,000	25,000,000
50	16	16	16	16	16	16	16	16	16	16	16	16	16	16
100	20	21	22	22	22	22	22	22	22	22	22	22	22	22
250	25	30	35	35	35	35	35	35	35	35	35	35	35	35
500	-	35	45	45	50	50	50	50	50	50	50	50	50	50
1,000	-	-	55	65	65	70	70	70	70	70	70	70	70	70
2,500	-	-	-	80	95	110	110	110	110	110	110	110	110	110
5,000	-	-	-	-	110	140	150	150	160	160	160	160	160	160
10,000	-	-	-	-	-	170	200	210	220	220	220	220	220	220
15,000	-	-	-	-	-	170	230	250	270	270	270	270	270	270
25,000	-	-	-	-	-	-	250	310	340	350	350	350	350	350
75,000	-	-	-	-	-	-	-	310	510	570	590	610	610	610
100,000	-	-	-	-	-	-	-	-	550	630	670	700	700	710
250,000	-	-	-	-	-	-	-	-	-	790	970	1 090	1 100	1 100
500,000	-	-	-	-	-	-	-	-	-	-	1 120	1 500	1 540	1 570
1,000,000	-	-	-	-	-	-	-	-	-	-	-	2 000	2 120	2 190
5,000,000	-	-	-	-	-	-	-	-	-	-	-	-	3 540	4 470
10,000,000	-	-	-	-	-	-	-	-	-	-	-	-	-	5 480

[1]For estimated totals larger than 10,000,000, the standard error is somewhat larger than the table values. The formula given below should be used to calculate the standard error.

$$SE(\hat{Y}) = \sqrt{5\hat{Y}\left(1 - \frac{\hat{Y}}{N}\right)}$$

N = Size of area

$\hat{Y}$ = Estimate of characteristic total

[2]The total count of persons in the area if the estimated total is a person characteristic, or the total count of housing units in the area if the estimated total is a housing unit characteristic.

Table B. **Unadjusted Standard Error in Percentage Points for Estimated Percentage**

[Based on a 1-in-6 simple random sample]

Estimated Percentage	Base of percentage[1]												
	500	750	1,000	1,500	2,500	5,000	7,500	10,000	25,000	50,000	100,000	250,000	500,000
2 or 98	1.4	1.1	1.0	0.8	0.6	0.4	0.4	0.3	0.2	0.1	0.1	0.1	0.1
5 or 95	2.2	1.8	1.5	1.3	1.0	0.7	0.6	0.5	0.3	0.2	0.2	0.1	0.1
10 or 90	3.0	2.4	2.1	1.7	1.3	0.9	0.8	0.7	0.4	0.3	0.2	0.1	0.1
15 or 85	3.6	2.9	2.5	2.1	1.6	1.1	0.9	0.8	0.5	0.4	0.3	0.2	0.1
20 or 80	4.0	3.3	2.8	2.3	1.8	1.3	1.0	0.9	0.6	0.4	0.3	0.2	0.1
25 or 75	4.3	3.5	3.1	2.5	1.9	1.4	1.1	1.0	0.6	0.4	0.3	0.2	0.1
30 or 70	4.6	3.7	3.2	2.6	2.0	1.4	1.2	1.0	0.6	0.5	0.3	0.2	0.1
35 or 65	4.8	3.9	3.4	2.8	2.1	1.5	1.2	1.1	0.7	0.5	0.3	0.2	0.2
50	5.0	4.1	3.5	2.9	2.2	1.6	1.3	1.1	0.7	0.5	0.4	0.2	0.2

[1]For a percentage and/or base of percentage not shown in the table, the formula given below may be used to calculate the standard error. This table should only be used for proportions, that is, where the numerator is a subset of the denominator.

$$SE(\hat{p}) = \sqrt{\frac{5}{B}\hat{p}(100 - \hat{p})}$$

B = Base of estimated percentage

$\hat{p}$ = Estimated percentage

Table C. **Standard Error Design Factors—United States**

[Percent of persons or housing units in sample]

Characteristic	Less than 15 percent	15 to 30 percent	30 to 45 percent	45 percent or more
POPULATION				
Age	1.2	1.0	0.6	0.5
Sex	1.2	1.0	0.6	0.5
Race	1.2	1.0	0.6	0.5
Hispanic origin (of any race)	1.2	1.0	0.6	0.5
Marital status	1.2	0.9	0.5	0.4
Household type and relationship	1.3	1.1	0.6	0.5
Children ever born	2.6	2.3	1.5	1.2
Work disability and mobility limitation status	1.2	1.0	0.6	0.5
Ancestry	2.1	1.7	1.0	0.8
Place of birth	2.2	2.1	1.2	1.1
Citizenship	1.8	1.5	0.9	0.7
Residence in 1985	2.1	1.9	1.1	0.9
Year of entry	1.5	1.2	0.6	0.5
Language spoken at home and ability to speak English	1.7	1.4	0.8	0.7
Educational attainment	1.3	1.1	0.6	0.5
School enrollment	1.8	1.5	0.9	0.7
Type of residence (urban/ rural)	2.2	2.2	1.4	1.1
Household type	1.3	1.1	0.6	0.5
Family type	1.2	1.0	0.6	0.5
Group quarters	1.0	0.9	0.8	0.8
Subfamily type and presence of children	1.2	1.0	0.5	0.5
Employment status	1.2	1.0	0.6	0.5
Industry	1.3	1.1	0.6	0.5
Occupation	1.2	1.0	0.6	0.5
Class of worker	1.5	1.2	0.7	0.6
Hours per week and weeks worked in 1989	1.2	1.0	0.6	0.5
Number of workers in family	1.3	1.1	0.6	0.5
Place of work	1.5	1.2	0.7	0.6
Means of transportation to work	1.5	1.2	0.7	0.6
Travel time to work	1.3	1.1	0.6	0.5
Private vehicle occupancy	1.5	1.2	0.7	0.6
Time leaving home to go to work	1.3	1.1	0.6	0.5
Type of income in 1989	1.4	1.2	0.6	0.5
Household income in 1989	1.2	1.0	0.5	0.5
Family income in 1989	1.2	1.0	0.6	0.5
Poverty status in 1989 (persons)	1.6	1.4	0.8	0.7
Poverty status in 1989 (families)	1.2	1.0	0.5	0.5
Armed Forces and veteran status	1.5	1.2	0.7	0.5

APPENDIX D.
Collection and Processing Procedures

CONTENTS

ENUMERATION AND RESIDENCE RULES

In accordance with census practice dating back to the first United States census in 1790, each person was to be enumerated as an inhabitant of his or her ''usual residence'' in the 1990 census. Usual residence is the place where the person lives and sleeps most of the time or considers to be his or her usual residence. This place is not necessarily the same as the person's legal residence or voting residence. In the vast majority of cases, however, the use of these different bases of classification would produce substantially the same statistics, although there might be appreciable differences for a few areas.

The implementation of this practice has resulted in the establishment of rules for certain categories of persons whose usual place of residence is not immediately apparent. Furthermore, this practice means that persons were not always counted as residents of the place where they happened to be staying on Census Day (April 1, 1990).

Enumeration Rules

Each person whose usual residence was in the United States was to be included in the census, without regard to the person's legal status or citizenship. In a departure from earlier censuses, foreign diplomatic personnel participated voluntarily in the census, regardless of their residence on or off the premises of an embassy. As in previous censuses, persons in the United States specifically excluded from the census were foreign travelers who had not established a residence.

Americans with a usual residence outside the United States were not enumerated in the 1990 census. United States military and Federal civilian employees, and their dependents overseas, are included in the population counts for States for purposes of Congressional apportionment, but are excluded from all other tabulations for States and their subdivisions. The counts of United States military and Federal civilian employees, and their dependents, were obtained from administrative records maintained by Federal departments and agencies. Other Americans living overseas, such as employees of international agencies and private businesses and students, were not enumerated, nor were their counts obtained from administrative sources. On the other hand, Americans temporarily overseas were to be enumerated at their usual residence in the United States.

Residence Rules

Each person included in the census was to be counted at his or her usual residence—the place where he or she lives and sleeps most of the time or the place where the person considers to be his or her usual home. If a person had no usual residence, the person was to be counted where he or she was staying on April 1, 1990.

Persons temporarily away from their usual residence, whether in the United States or overseas, on a vacation or on a business trip, were counted at their usual residence. Persons who occupied more than one residence during the year were counted at the one they considered to be their usual residence. Persons who moved on or near Census Day were counted at the place they considered to be their usual residence.

Persons in the Armed Forces—Members of the Armed Forces were counted as residents of the area in which the installation was located, either on the installation or in the surrounding community. Family members of Armed Forces personnel were counted where they were living on Census Day (for example, with the Armed Forces person or at another location).

Each Navy ship not deployed to the 6th or 7th Fleet was attributed to the municipality that the Department of the Navy designated as its homeport. If the homeport included more than one municipality, ships berthed there on Census Day were assigned by the Bureau of the Census to the municipality in which the land immediately adjacent to the dock or pier was actually located. Ships attributed to the homeport, but not physically present and not deployed to the 6th or 7th Fleet, were assigned to the municipality named on the Department of the Navy's homeport list. These rules also apply to Coast Guard vessels.

Personnel assigned to each Navy and Coast Guard ship were given the opportunity to report a residence off the ship. Those who did report an off-ship residence in the communities surrounding the homeport were counted there; those who did not were counted as residents of the ship. Personnel on Navy ships deployed to the 6th or 7th Fleet on Census Day were considered to be part of the overseas population.

Persons on Maritime Ships—Persons aboard maritime ships who reported an off-ship residence were counted at that residence. Those who did not were counted as residents of the ship, and were attributed as follows:

1. The port where the ship was docked on Census Day, if that port was in the United States or its territories.
2. The port of departure if the ship was at sea, provided the port was in the United States or its territories.
3. The port of destination in the United States or its territories, if the port of departure of a ship at sea was a foreign port.
4. The overseas population if the ship was docked at a foreign port or at sea between foreign ports. (These persons were not included in the overseas population for apportionment purposes.)

Persons Away at School—College students were counted as residents of the area in which they were living while attending college, as they have been since the 1950 census. Children in boarding schools below the college level were counted at their parental home.

Persons in Institutions—Persons under formally authorized, supervised care or custody, such as in Federal or State prisons; local jails; Federal detention centers; juvenile institutions; nursing, convalescent, and rest homes for the aged and dependent; or homes, schools, hospitals, or wards for the physically handicapped, mentally retarded, or mentally ill, were counted at these places.

Persons Away From Their Usual Residence on Census Day—Migrant agricultural workers who did not report a usual residence elsewhere were counted as residents of the place where they were on Census Day. Persons in worker camps who did not report a usual residence elsewhere were counted as residents of the camp where they were on Census Day.

In some parts of the country, natural disasters displaced significant numbers of households from their usual place of residence. If these persons reported a destroyed or damaged residence as their usual residence, they were counted at that location.

Persons away from their usual residence were counted by means of interviews with other members of their families, resident managers, or neighbors.

DATA COLLECTION PROCEDURES

The 1990 census was conducted primarily through self-enumeration. The questionnaire packet included general information about the 1990 census and an instruction guide explaining how to complete the questionnaire. Spanish-language questionnaires and instruction guides were available on request. Instruction guides also were available in 32 other languages.

Enumeration of Housing Units

Each housing unit in the country received one of two versions of the census questionnaire:

1. A short-form questionnaire that contained a limited number of basic population and housing questions; these questions were asked of all persons and housing units and are often referred to as 100-percent questions.
2. A long-form questionnaire that contained the 100-percent items and a number of additional questions; a sampling procedure was used to determine those housing units that were to receive the long-form questionnaire.

Three sampling rates were employed. For slightly more than one-half of the country, one in every six housing units (about 17 percent) received the long-form or sample questionnaire. In functioning local governmental units (counties and incorporated places, and in some parts of the country, towns and townships) estimated to have fewer than 2,500 inhabitants, every other housing unit (50 percent) received the sample questionnaire in order to enhance the reliability of the sample data for these small areas. For census tracts and block numbering areas having more than 2,000 housing units in the Census Bureau's address files, one in every eight housing units (about 13 percent) received a sample questionnaire, providing reliable statistics for these areas while permitting the Census Bureau to stay within a limit of 17.7 million sample questionnaires, or a one-in-six sample, nationwide.

The mail-out/ mail-back procedure was used mainly in cities, suburban areas, towns, and rural areas where mailing addresses consisted of a house number and street name. In these areas, the Census Bureau developed mailing lists that included about 88.4 million addresses. The questionnaires were delivered through the mail and respondents were to return them by mail. Census questionnaires were delivered 1 week before Census Day (April 1, 1990)

The update/ leave/ mail-back method was used mainly in densely populated rural areas where it was difficult to develop mailing lists because mailing addresses did *not* use house number and street name. The Census Bureau compiled lists of housing units in advance of the census. Enumerators delivered the questionnaires, asked respondents to return them by mail, and added housing units not on the mailing lists. This method was used mainly in the South and Midwest, and also included some high-rise, low-income urban areas. A variation of this method was used in urban areas having large numbers of boarded-up buildings. About 11 million housing units were enumerated using this method.

The list/ enumerate method (formerly called conventional or door-to-door enumeration) was used mainly in very remote and sparsely-settled areas. The United States

Postal Service delivered unaddressed short-form questionnaires before Census Day. Starting a week before Census Day, enumerators canvassed these areas, checked that all housing units received a questionnaire, created a list of all housing units, completed long-form questionnaires, and picked up the completed short-form questionnaires. This method was used mainly in the West and Northeast to enumerate an estimated 6.5 million housing units.

Followup

Nonresponse Followup—In areas where respondents were to mail back their questionnaires, an enumerator visited each address from which a questionnaire was not received.

Coverage and Edit-Failure Followup—In the mail-back areas, some households returned a questionnaire that did not meet specific quality standards because of incomplete or inconsistent information, or the respondent had indicated difficulty in deciding who was to be listed on the questionnaire. These households were contacted by telephone or by personal visit to obtain the missing information or to clarify who was to be enumerated in the household. In areas where an enumerator picked up the questionnaires, the enumerator checked the respondent-filled questionnaire for completeness and consistency.

Special Enumeration Procedures

Special procedures and questionnaires were used for the enumeration of persons in group quarters, such as college dormitories, nursing homes, prisons, military barracks, and ships. The questionnaires (Individual Census Reports, Military Census Reports, and Shipboard Census Reports) included the 100-percent population questions but did not include any housing questions. In all group quarters, all persons were asked the basic population questions; in most group quarters, additional questions were asked of a sample (one-in-six) of persons.

Shelter and Street Night (S-Night)

The Census Bureau collected data for various components of the homeless population at different stages in the 1990 census. ''Shelter and Street Night'' (S-Night) was a special census operation to count the population in four types of locations where homeless people are found. On the evening of March 20, 1990, and during the early morning hours of March 21, 1990, enumerators counted persons in pre-identified locations:

1. Emergency shelters for the homeless population (public and private; permanent and temporary).
2. Shelters with temporary lodging for runaway youths.
3. Shelters for abused women and their children.
4. Open locations in streets or other places not intended for habitation.

Emergency shelters include all hotels and motels costing $12 or less (excluding taxes) per night regardless of whether persons living there considered themselves to be homeless, hotels and motels (regardless of cost) used entirely to shelter homeless persons, and pre-identified rooms in hotels and motels used for homeless persons and families. Enumeration in shelters usually occurred from 6 p.m. to midnight; street enumeration, from 2 a.m. to 4 a.m.; abandoned and boarded-up buildings from 4 a.m. to 8 a.m.; and shelters for abused women, from 6 p.m. on March 20 to noon on March 21.

Other components, which some consider as part of the homeless population, were enumerated as part of regular census operations. These include persons doubled up with other families, as well as persons with no other usual home living in transient sites, such as commercial campgrounds, maternity homes for unwed mothers, and drug/ alcohol abuse detoxification centers. In institutions, such as local jails and mental hospitals, the Census Bureau does not know who has a usual home elsewhere; therefore, even though some are literally homeless, these persons cannot be identified separately as a component of the homeless population.

There is no generally agreed-upon definition of ''the homeless,'' and there are limitations in the census count that prevent obtaining a total count of the homeless population under any definition. As such, the Census Bureau does not have a definition and will not provide a total count of ''the homeless.'' Rather, the Census Bureau will provide counts and characteristics of persons found at the time of the census in *selected* types of living arrangements. These selected components can be used as building blocks to construct a count of homeless persons appropriate to particular purposes as long as the data limitations are taken into account.

In preparation for ''Shelter-and-Street-Night'' enumeration, the regional census centers (RCC's) mailed a certified letter (Form D-33 (L)) to the highest elected official of each active functioning government of the United States (more than 39,000) requesting them to identify:

1. All shelters with sleeping facilities (permanent and temporary, such as church basements, armories, public buildings, and so forth, that could be open on March 20).
2. Hotels and motels used to house homeless persons and families.
3. A list of outdoor locations where homeless persons tend to be at night.
4. Places such as bus or train stations, subway stations, airports, hospital emergency rooms, and so forth, where homeless persons seek shelter at night.

5. The specific addresses of abandoned or boarded-up buildings where homeless persons were thought to stay at night.

The letter from the RCC's to the governmental units emphasized the importance of listing night-time congregating sites. The list of shelters was expanded using information from administrative records and informed local sources. The street sites were limited to the list provided by the jurisdictions. All governmental units were eligible for ''Shelter and Street Night.'' For cities with 50,000 or more persons, the Census Bureau took additional steps to update the list of shelter and street locations if the local jurisdiction did not respond to the certified letter. Smaller cities and rural areas participated if the local jurisdiction provided the Census Bureau a list of shelters or open public places to visit or if shelters were identified through our inventory development, local knowledge update, or during the Special Place Prelist operation.

The Census Bureau encouraged persons familiar with homeless persons and the homeless themselves to apply as enumerators. This recruiting effort was particularly successful in larger cities.

For shelters, both long- and short-form Individual Census Reports (ICR's) were distributed. For street enumeration, only short-form ICR's were used. Persons in shelters and at street locations were asked the basic population questions. Additional questions about social and economic characteristics were asked of a sample of persons in shelters only.

Enumerators were instructed *not* to ask who was homeless; rather, they were told to count all persons (including children) staying overnight at the shelters, and everyone they saw on the street except the police, other persons in uniform, and persons engaged in employment or obvious money-making activities other than begging and panhandling.

At both shelter and street sites, persons found sleeping were not awakened to answer questions. Rather, the enumerator answered the sex and race questions by observation and estimated the person's age to the best of his or her ability. In shelters, administrative records and information from the shelter operator were used, when available, for persons who were already asleep.

Less than 1 percent of shelters refused to participate in the census count at first. By the end of the census period, most of those eventually cooperated and the number of refusals had been reduced to a few. For the final refusals, head counts and population characteristics were obtained by enumerators standing outside such shelters and counting people as they left in the morning.

The ''street'' count was restricted to persons who were visible when the enumerator came to the open, public locations that had been identified by local jurisdictions. Homeless persons who were well hidden, moving about, or in locations other than those identified by the local governments were likely missed. The number missed will never be known and there is no basis to make an estimate of the number missed from census data. The count of persons in open, public places was affected by many factors, including the extra efforts made to encourage people to go to shelters for ''Shelter and Street Night,'' the weather (which was unusually cold in many parts of the country), the presence of the media, and distrust of the census. Expectations of the number of homeless persons on the street cannot be based on the number seen during the day because the night-time situation is normally very different as more homeless persons are in shelters or very well hidden.

For both ''Shelter-and-Street-Night'' locations, the Census Bureau assumed that the usual home of those enumerated was in the block where they were found (shelter or street).

The ''Shelter-and-Street-Night'' operation replaced and expanded the 1980 Mission Night (M-Night) and Casual Count operations. These two operations were aimed at counting the population who reported having no usual residence. M-Night was conducted a week after Census Day, in April 1980. Enumerators visited hotels, motels, and similar places costing $4 or less each night; missions, flophouses, local jails and similar places at which the average length of stay was 30 days or less; and nonshelter locations, such as bus depots, train stations, and all night movie theaters. Questions were asked of everyone, regardless of age. Enumerators conducted M-Night up to midnight on April 8, 1980, and returned the next morning to collect any forms completed after midnight.

The Casual Count operation was conducted in May 1980 at additional nonshelter locations, such as street corners, pool halls, welfare and employment offices. This operation lasted for approximately 2 weeks. Casual Count was conducted during the day only in selected large central cities. Only persons who appeared to be at least 15 years of age were asked if they had been previously enumerated. Casual Count was actually a coverage-improvement operation. It was not specifically an operation to count homeless persons living in the streets. Persons were excluded if they said they had a usual home outside the city because it was not cost effective to check through individual questionnaires in another city to try to find the person.

PROCESSING PROCEDURES

Respondents returned many census questionnaires by mail to 1 of over 344 census district offices or to one of six processing offices. In these offices, the questionnaires were ''checked in'' and edited for completeness and consistency of the responses. After this initial processing had been performed, all questionnaires were sent to the processing offices.

In the processing offices, the household questionnaires were microfilmed and processed by the Film Optical Sensing Device for Input to Computers (FOSDIC). For most items on the questionnaire, the information supplied

by the respondent was indicated by filling circles in predesignated positions. FOSDIC electronically ''read'' these filled circles from the microfilm copy of the questionnaire and transferred the information to computer tape. The computer tape did not include individual names, addresses, or handwritten responses.

The data processing was performed in several stages. All questionnaires were microfilmed, ''read'' by FOSDIC, and transferred to computer disk. Selected written entries in the race question on both the short and long forms were keyed from the microfilm and coded using the data base developed from the 1980 census and subsequent content and operational tests. Keying of other written entries on the long forms occurred in the seven processing offices.

The information (for example, income dollar amounts or homeowner shelter costs) on these keyed files was merged with the FOSDIC data or processed further through one of three automated coding programs. The codes for industry, occupation, place-of-birth, migration, place-of-work, ancestry, language, relationship, race, and Hispanic origin were merged with the FOSDIC data for editing, weighting, and tabulating operations at Census Bureau headquarters. All responses to the questions on Individual Census Reports (ICR's), Military Census Reports (MCR's), and Shipboard Census Reports (SCR's) were keyed, not processed by microfilm or FOSDIC.

APPENDIX E.
Facsimiles of Respondent Instructions and Questionnaire Pages

Your Guide for the

1990 U.S. Census Form

This guide gives helpful information on filling out your census form. If you need more help, call the local U.S. census office. **The telephone number is on the cover of the questionnaire.** After you have filled out your form, please return it in the **envelope** we have provided.

CENSUS '90

U.S. DEPARTMENT OF COMMERCE
BUREAU OF THE CENSUS

D-4

How to Fill Out Your Census Form

Please use a black lead pencil only. Black lead pencil is better to use than ballpoint or other pens. Most questions ask you to fill in the circle, or to print the information. See **Example** below.

Make sure you print answers for everyone in this household. If someone in the household, such as a roomer or boarder, does not want to give you all the information for the form, print at least the person's name and answer questions 2 and 3. A census taker will call to get the other information directly from the person.

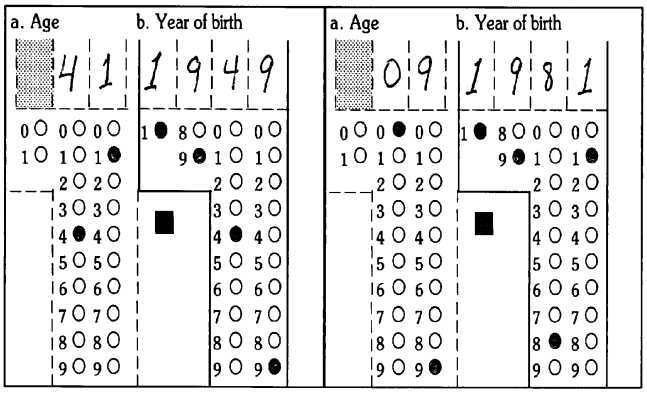
There may be a question you cannot answer exactly. For example, you might not know the age of an elderly person or the price for which your house would sell. Ask someone else in your household; if no one knows, give your best estimate.

Instructions for individual questions begin on page 3 of this guide. They will help you to understand the questions and answer them correctly.

If you have a question about filling out the census form or need assistance, call the local U.S. census office. **The telephone number is given on the cover of the questionnaire.**

If you do not mail back your census form, a census taker will be sent out to assist you. But it saves time and your taxpayer dollars if you fill out the form yourself and mail it back.

Example



Your Answers Are Confidential

The law authorizing the census (Title 13, U.S. Code) also provides that your answers are confidential. No one except census workers may see your completed form and they can be fined and/or imprisoned for any disclosure of your answers. Only after 72 years can your individual census form become available to other government agencies (whether federal, state, county, or local). Until then, no other person or business can see your individual report.

The same law that protects the confidentiality of your answers requires that you provide the information asked in this census to the best of your knowledge.

Information collected from the decennial census is used for a variety of statistical purposes. Census information is used to find out where funding is most needed for schools, health centers, highways, and other services. Census results are used by members of public and private groups--including community organizations--and by businesses and industries, as well as by agencies at all levels of government.

Instructions for Questions 1a through 7

1a. List everyone who lives at this address in question 1a. If you are not sure if you should list a person, see the rules on page 1 of the census form. If you are still not sure, answer as best you can and fill in "Yes" for question H1a or H1b, as appropriate.

If there are more than seven people in your household, please list all the persons in question 1a, complete the form for seven people, and mail it back in the enclosed envelope. A census taker will call to obtain the information for the additional persons.

b. If everyone listed in question 1a usually lives at another address(es), print the address(es) in 1b.

2. Fill one circle to show how each person is related to the person in column 1.

If **Other relative** of the person in column 1, print the exact relationship such as son-in-law, daughter-in-law, grandparent, nephew, niece, mother-in-law, father-in-law, cousin, and so on.

If the **Stepson/stepdaughter** of the person in column 1 also has been legally adopted by the person in column 1, mark **Stepson/stepdaughter** but do not mark **Natural-born or adopted son/daughter**. In other words, **Stepson/stepdaughter** takes precedence over **Adopted son/daughter.**

4. Fill ONE circle for the race each person considers himself/herself to be.

If you fill the **Indian (Amer.)** circle, print the name of the tribe or tribes in which the person is enrolled. If the person is not enrolled in a tribe, print the name of the principal tribe(s).

If you fill the **Other API** circle [under **Asian or Pacific Islander (API)], only** print the name of the group to which the person belongs. For example, the **Other API** category includes persons who identify as Burmese, Fijian, Hmong, Indonesian, Laotian, Bangladeshi, Pakistani, Tongan, Thai, Cambodian, Sri Lankan, and so on.

If you fill the **Other race** circle, be sure to print the name of the race.

If the person considers himself/herself to be **White, Black or Negro, Eskimo or Aleut, fill one circle only. Please do not print the race in the boxes.**

The **Black or Negro** category also includes persons who identify as African-American, Afro-American, Haitian, Jamaican, West Indian, Nigerian, and so on.

All persons, regardless of citizenship status, should answer this question.

5. Print age at last birthday in the space provided (print "00" for babies less than 1 year old). Fill in the matching circle below each box. Also, print year of birth in the space provided. Then fill in the matching circle below each box. For an illustration of how to complete question 5, see the **Example** on page 2 of this guide.

6. If the person's only marriage was annulled, mark **Never married**.

7. A person is of Spanish/Hispanic origin if the person's origin (ancestry) is Mexican, Mexican-Am., Chicano, Puerto Rican, Cuban, Argentinean, Colombian, Costa Rican, Dominican, Ecuadoran, Guatemalan, Honduran, Nicaraguan, Peruvian, Salvadoran, from other Spanish-speaking countries of the Caribbean or Central or South America, or from Spain.

If you fill the **Yes, other Spanish/Hispanic** circle, print one group.

A person who is not of Spanish/Hispanic origin should answer this question by filling the **No (not Spanish/Hispanic)** circle. Note that the term **"Mexican-Am."** refers only to persons of Mexican origin or ancestry.

All persons, regardless of citizenship status, should answer this question.

Instructions for Question H1a through H1b

H1a. Refer to the list of persons you entered in question 1a on page 1. If you left anyone out of your list because you were not sure if the person(s) should be listed, answer question H1a as **Yes.** Then enter the name(s) and reason(s) why you did not list the person(s) on the lines provided. Otherwise, answer question H1a as **No**.

b. If you included anyone on your list even though you were not sure that you should list the person(s), answer question H1b as **Yes**. Then enter the name(s) and reason(s) why you listed the person(s) on the lines provided. Otherwise, answer question H1b as **No**.

Instructions for Questions H2 through H7b

H2. Fill only one circle.

Count all occupied and vacant apartments in the house or building. Do not count stores or office space.

Detached means there is open space on all sides, or the house is joined only to a shed or garage. *Attached* means that the house is joined to another house or building by at least one wall that goes from ground to roof. An example of **A one-family house attached to one or more houses** is a house in a row of houses attached to one another.

A mobile home or trailer that has had one or more rooms added or built onto it should be counted as a *one-family detached house;* a porch or shed is not considered a room.

H3. Count only whole rooms in your house, apartment, or mobile home used for living purposes, such as living rooms, dining rooms, kitchens, bedrooms, finished recreation rooms, family rooms, etc. Do not count bathrooms, kitchenettes, strip or pullman kitchens, utility rooms, foyers, halls, half-rooms, porches, balconies, unfinished attics, unfinished basements, or other unfinished space used for storage.

H4. Housing is owned if the owner or co-owner lives in it. Mark **Owned by you or someone in this household with a mortgage or loan** if the house, apartment, or mobile home is mortgaged or there is a contract to purchase. Mark **Owned by you or someone in this household free and clear (without a mortgage)** if there is no mortgage or other debt. If the house, apartment, or mobile home is owned but the land is rented, mark this question to show the status of the house, apartment, or mobile home.

Mark **Rented for cash rent** if any money rent is paid, even if the rent is paid by persons who are not members of your household, or by a federal, state, or local government agency.

Mark **Occupied without payment of cash rent** if the unit is **not** owned or being bought by the occupants and if money rent is **not** paid or contracted. The unit may be owned by friends or relatives who live elsewhere and who allow occupancy without charge. A house or apartment may be provided as part of wages or salary. Examples are: caretaker's or janitor's house or apartment; parsonages; tenant farmer or sharecropper houses for which the occupants do not pay cash rent; or military housing.

H5a. Answer H5a and H5b if you live in a one-family house or a mobile home; include only land that you own or rent.

b. A business is easily recognized from the outside; for example, a grocery store or barber shop. A medical office is a doctor's or dentist's office regularly visited by patients.

H6. If this is a house, include the value of the house, the land it is on, and any other structures on the same property. If the house is owned but the land is rented, estimate the combined value of the house and the land. If this is a condominium unit, estimate the value for your house or apartment including your share of the common elements. If this is a mobile home, include the value of the mobile home and the value of the land. If you rent the land, estimate the value of the rented land and add it to the value of the mobile home.

H7a. Report the rent agreed to or contracted for, even if the rent for your house, apartment, or mobile home is unpaid or paid by someone else.

If rent is paid:	Multiply rent by:	If rent is paid:	Divide rent by:
By the day	30	4 times a year	3
By the week	4	2 times a year	6
Every other week	2	Once a year	12

b. Answer **Yes** if meals are included in the monthly rent payment, or you must contract for meals or a meal plan in order to live in this building.

Instructions for Questions H8 through H19b

H8. The *person listed in column 1* refers to the person listed in the first column on page 2. This person should be the household member (or one of the members) in whose name the house, apartment, or mobile home is owned, being bought, or rented. If there is no such person, any adult household member can be the person in column 1. Mark when this person last moved into this house, apartment, or mobile home.

H9. Include all rooms intended to be used as bedrooms in this house, apartment, or mobile home, even if they are currently being used for other purposes.

H10. Mark **Yes, have all three facilities** if you have all the facilities mentioned; all facilities must be in your house, apartment, or mobile home, but not necessarily in the same room. Consider that you have hot water even if you have it only part of the time. Mark **No** if any of the three facilities is not present.

H11. The kitchen sink, stove, and refrigerator must be located in the building but do not have to be in the same room. Portable cooking equipment is not considered as a range or cookstove.

H12. Answer **Yes** only if the telephone is located in your house, apartment, or mobile home.

H13. Count company cars (including police cars and taxicabs) and company trucks of one-ton capacity or less that are regularly kept at home and used by household members for nonbusiness purposes. Do **not** count cars or trucks permanently out of working order.

H14. Fill the circle for the fuel used most to heat your house, apartment, or mobile home. In buildings containing more than one apartment you may obtain this information from the owner, manager, or janitor.

Solar energy is provided by a system that collects, stores, and distributes heat from the sun. **Other fuel** includes any fuel not separately listed; for example, purchased steam, fuel briquettes, waste material, etc.

H15. If a well provides water for five or more houses, apartments, or mobile homes, mark **A public system**. If a well provides water for four or fewer houses, apartments, or mobile homes, fill one of the circles for **Individual well**.

Drilled wells, or small diameter wells, are usually less than 1½ feet in diameter. **Dug wells** are generally hand dug and are larger than 1½ feet wide.

H16. A **public sewer** may be operated by a government body or private organization. A **septic tank or cesspool** is an underground tank or pit used for disposal of sewage.

H17. Fill the circle corresponding to the period in which the original construction was completed, *not* the time of any later remodeling, additions, or conversions. In buildings containing more than one apartment, the owner, manager, or janitor may be of help in determining when the building was built.

If you live in a houseboat or a trailer or mobile home, fill the circle corresponding to the model year in which it was manufactured.

If you do not know the period when the building was first constructed, fill the circle for **Don't know**.

H18. A *condominium* is a type of ownership in which the apartments, houses, or mobile homes in a building or development are individually owned, but the common areas, such as lobbies, halls, etc., are jointly owned. Cooperative occupants should mark **No**.

H19a. Answer H19a and H19b if you live in a one-family house or mobile home.

b. *This property* is the acreage on which the house is located; it includes adjoining land you rent for your use. Report sales made in 1989 from this property by you or previous occupants.

Instructions for Questions H20 through H26

H20. If your house or apartment is rented, enter the costs for utilities and fuels **only if you pay for them in addition to the rent entered in H7a.**

If you live in a condominium, enter the costs for utilities and fuels **only if you pay for them in addition to your condominium fee.**

If your fuel and utility costs are already included in your rent or condominium fee, fill the **Included in rent or in condominium fee** circle. Do not enter any dollar amounts.

The amounts to be reported should be the total amount for the past 12 months. Estimate as closely as possible when exact costs are not known. If you have lived in this house or apartment less than 1 year, estimate the yearly cost.

Report amounts even if your bills are unpaid or paid by someone else. If the bills include utilities or fuel used also by another apartment or a business establishment, estimate the amounts for your own house or apartment. If gas and electricity are billed together, enter the combined amount on the electricity line and bracket [ ] the two utilities.

H21. Report taxes for all taxing jurisdictions (city or town, county, state, school district, etc.) even if they are included in your mortgage payment, not yet paid or paid by someone else, or are delinquent. Do not include taxes past due from previous years.

H22. When premiums are paid on other than a yearly basis, convert to a yearly basis. Enter the yearly amount even if no payment was made during the past 12 months.

H23a. The word *mortgage* is used as a general term to indicate all types of loans that are secured by real estate.

b. Enter a monthly amount even if it is unpaid or paid by someone else. If the amount is paid on some other periodic basis, see the instructions for H7a to change it to a monthly amount.

Include payments on first mortgages and contracts to purchase only. Payments for second or junior mortgages and home equity loans should be reported in H24b.

H24a. A second or junior mortgage or home equity loan is secured by real estate.

b. Enter a monthly amount even if it is unpaid or paid by someone else. If the amount is paid on some other periodic basis, see instructions for H7a and change it to a monthly amount. Include payments on all second or junior mortgages or home equity loans.

H25. A *condominium fee* is normally assessed by the condominium owners' association for the purpose of improving and maintaining the common areas. Enter a monthly amount even if it is unpaid or paid by someone else. If the amount is paid on some other periodic basis, see the instructions for H7a on how to change it to a monthly amount.

H26. Report amount even if your bills are unpaid or paid by someone else.

Include payments for personal property taxes, land or site rent, registration fees and license fees. Do not include real estate taxes already reported in H21.The amount to be reported should be the total amount for an entire 12-month billing period even if made in two or more installments. Estimate as closely as possible when exact costs are not known.

Instructions for Question 8

8. *For persons born in the United States:*

Print the name of the State in which this person was born. If the person was born in Washington, D.C., print District of Columbia. If the person was born in a U.S. territory or commonwealth, print Puerto Rico, U.S. Virgin Islands, Guam, American Samoa, or Northern Marianas.

For persons born outside the United States:

Print the name of the foreign country or area where the person was born. Use current boundaries, not boundaries at the time of the person's birth. Specify whether Northern Ireland or the Republic of Ireland (Eire); East or West Germany; North or South Korea; England, Scotland, or Wales (not Great Britain or United Kingdom). Specify the particular country or island in the Caribbean (not, for example,West Indies).

Instructions for Questions 9 through 13

9. A person should fill the **Yes, U.S. citizen by naturalization** circle only if he/she has completed the naturalization process and is now a United States citizen. If the person was born in Puerto Rico, Guam, the U.S. Virgin Islands, or Northern Marianas, he/she should fill the **Yes, born in Puerto Rico, Guam, the U.S. Virgin Islands, or Northern Marianas** circle. If the person was born outside the United States (or at sea) and has at least one American parent, he/she should fill the **Yes, born abroad of American parent or parents** circle.

10. If the person has entered the United States (that is, the 50 states and the District of Columbia) more than once, fill the circle for the latest year he/she came to stay.

11. Do not include enrollment in a trade or business school, company training, or tutoring unless the course would be accepted for credit at a regular elementary school, high school, or college.

A *public school* is any school or college that is controlled and supported primarily by a local, county, State, or Federal Government. Schools are private if supported and controlled primarily by religious organizations or other private groups.

12. Mark the category for the highest grade or level of schooling the person has **successfully completed** or the **highest degree** the person received. If the person is enrolled in school, mark the category containing the highest grade completed (the grade previous to the grade in which enrolled). Schooling completed in foreign or ungraded schools should be reported as the equivalent level of schooling in the regular American school system.

Persons who completed high school by passing an equivalency test, such as the General Educational Development (GED) examination, and did not attend college, should fill the circle for high school graduate.

Do not include vocational certificates or diplomas from vocational, trade, or business schools or colleges unless they were college level associate degrees or higher.

Some examples of *professional school degrees* include medicine, dentistry, chiropractic, optometry, osteopathic medicine, pharmacy, podiatry, veterinary medicine, law, and theology. Do not include barber school, cosmetology, or other training for a specific trade.

Do not include honorary degrees awarded by colleges and universities to individuals for their accomplishments. Include only "earned" degrees.

13. Print the ancestry group. Ancestry refers to the person's ethnic origin or descent, "roots," or heritage. Ancestry also may refer to the country of birth of the person or the person's parents or ancestors before their arrival in the United States. *All* persons, regardless of citizenship status, should answer this question.

Persons who have more than one origin and cannot identify with a single ancestry group may report two ancestry groups (for example, German-Irish).

Be specific. For example, print whether West Indian, Asian Indian, or American Indian. West Indian includes persons whose ancestors came from Jamaica, Trinidad, Haiti, etc. Distinguish Cape Verdean from Portuguese; French Canadian from Canadian; and Dominican Republic from Dominica Island.

A religious group should not be reported as a person's ancestry.

Instructions for Questions 14a through 19

14a. Mark **Yes** if this person lived in this same house or apartment on April 1, 1985, even if he/she moved away and came back since then. Mark **No** if this person lived in the same building but in a different apartment (or in the same mobile home or trailer but on a different lot or trailer site).

b. If this person lived in a different house or apartment on April 1, 1985, give the location of this person's usual home at that time.

Part (1)

If the person lived in the United States on April 1, 1985, print the name of the State (or District of Columbia) where he or she lived. Continue with parts (2) through (4).

If the person lived in a U.S. territory or commonwealth, print the name of the territory or commonwealth, such as Puerto Rico, U.S. Virgin Islands, Guam, American Samoa, or Northern Marianas. Then go to question 15a.

If the person lived outside the United States, print the name of the foreign country or area where he or she lived. Specify whether Northern Ireland or the Republic of Ireland (Eire); East or West Germany; North or South Korea; England, Scotland or Wales (not Great Britain or United Kingdom). Specify the particular country or island in the Caribbean (not, for example, West Indies). Then go to question 15a.

Part (2)

If the person lived in Louisiana, print the parish name. If the person lived in Alaska, print the borough name. If the person lived in New York city and the county name is not known, print the borough name. If the person lived in an independent city (not in any county) or in Washington, D.C., leave blank and enter the city name in part (3).

Part (3)

If the person lived in New England, print the name of the town rather than the village name, unless the name of the town is not known. If the person lived outside the limits or boundaries of any city or town, print the name of the post office or the nearest town and mark **No, lived outside the city/town limits** in part (4).

Part (4)

Mark **Yes** if the location is now inside the city/town limits even if it was not inside the limits on April 1, 1985; that is, if the area was annexed by the city/town since that time.

15. Mark **Yes** if the person sometimes or always speaks a language other than English at home.

Do not mark **Yes** for a language spoken only at school or if speaking is limited to a few expressions or slang.

Print the name of the language spoken at home. If this person speaks more than one non-English language and cannot determine which is spoken more often, report the first language the person learned to speak.

17a. For a person with service in the National Guard or a military reserve unit, fill one of the two **Yes, active duty** circles if and only if the person has ever been called up for active duty other than training; otherwise, mark **Yes, service in Reserves or National Guard only**. For a person whose only service was as a civilian employee or volunteer for the Red Cross, USO, Public Health Service, or War or Defense Department, mark **No**. Count **World War II** Merchant Marine Seaman service as active duty; do **not** count other Merchant Marine service as active duty.

18. Mark **Yes** to part (a) if a health condition substantially limits this person in his or her choice of occupation or if the condition limits the amount of work that can be accomplished in a given period of time. Mark **Yes** to part (b) if the health condition prevents this person from holding any significant employment.

19. Consider a person to have difficulty with these activities if any of the following situations apply: (1) it takes extra time or extra effort for the person to perform one or more of the activities, (2) there are times when the person cannot perform one or more of the activities, or (3) the person is completely unable to perform one or more of the activities.

Instructions for Questions 20 through 23b

20. Count all children born alive, including any who have died (even shortly after birth) or who no longer live with you. Do not include miscarriages or stillborn children or any adopted, foster, or stepchildren.

21a. *Count as work — Mark* ***Yes:***

- Work for someone else for wages, salary, piece rate, commission, tips, or payments "in kind" (for example, food, lodging received as payment for work performed).
- Work in own business, professional practice, or farm.
- Any work in a family business or farm, paid or not.
- Any part-time work including babysitting, paper routes, etc.
- Active duty in Armed Forces.

Do not count as work — Mark ***No:***

- Housework or yard work at home.
- Unpaid volunteer work.
- School work.
- Work done as a resident of an institution.

22a. Include the street type (for example, St., Road, Ave.) and the street direction (if a direction such as "North" is part of the address). For example, print 1239 N. Main St. or 1239 Main St., N.W. not just 1239 Main.

If the only known address is a post office box, give a description of the work *location*. For example, print the name of the building or shopping center where the person works, the nearest intersection, the nearest street where the workplace is located, etc. DO NOT GIVE A POST OFFICE BOX NUMBER.

If the person worked at a military installation or military base that has no street address, report the name of the military installation or base.

If the person worked at several locations, but reported to the same location each day to begin work, print the address of the location where he or she reported. If the person did not report to the same location each day to begin work, print the address of the location where he or she worked most last week.

If the person's employer operates in more than one location (such as a grocery store chain or public school system), print the exact address of the location or branch where the person worked. If the exact address of a school is not known, print the name of the school.

If the person worked on a college or university campus and the exact address of the workplace is not known, print the name of the building where he or she worked.

d. *If the person worked in New York city* and the county is not known, print the name of the borough where the person worked.

If the person worked in Louisiana, print the name of the parish where the person worked.

If the person worked in Alaska, print the name of the borough where the person worked.

e. *If the person worked in a foreign country or Puerto Rico, Guam, etc.,* print the name of the country in 22e and leave the other parts of question 22 blank.

23a. *If the person usually used more than one type of transportation to get to work* (for example, rode the bus and transferred to the subway), fill the circle of the one method of transportation that he/she used for most of the distance during the trip.

b. *If the person was driven to work by someone who then drove back home or to a nonwork destination,* fill the circle for **Drove alone.**

DO NOT include persons who rode to school or some other nonwork destination in the count of persons who rode in the vehicle.

Instructions for Questions 24a through 30

24a. Give the time of day the person usually *left home to go to work*. DO NOT give the time that the person usually began his or her work.

If the person usually left home to go to work sometime *between 12:00 o'clock midnight and 12:00 o'clock noon*, fill the **a.m.** circle.

If the person usually left home to go to work sometime *between 12:00 o'clock noon and 12:00 o'clock midnight*, fill the **p.m.** circle.

b. Travel time is from door to door. Include time taken waiting for public transportation or picking up passengers in a carpool.

25. If the person works only during certain seasons or on a day-by-day basis when work is available, mark **No**.

26a. Mark **Yes** if the person tried to get a job or to start a business or professional practice at any time in the last 4 weeks; for example, registered at an employment office, went to a job interview, placed or answered ads, or did anything toward starting a business or professional practice.

b. Mark **No, already has a job** if the person was on layoff or was expecting to report to a job within 30 days.

Mark **No, temporarily ill** if the person expects to be able to work within 30 days.

Mark **No, other reasons** if the person could not have taken a job because he or she was going to school, taking care of children, etc.

27. Look at the instructions for question 21a to see what to count as work. Mark **Never worked** if the person: (1) never worked at any kind of job or business, either full or part time, (2) never did any work, with or without pay, in a family business or farm, and (3) never served in the Armed Forces.

28a. If the person worked for a company, business, or government agency, print the name of the company, not the name of the person's supervisor. If the person worked for an individual or a business that had no company name, print the name of the individual worked for. If the person worked in his/her own business, print "self-employed."

b. Print two or more words to tell what the business, industry, or individual employer named in 28a did. If there is more than one activity, describe only the major activity at the place where the person worked. Enter what is made, what is sold, or what service is given.

Some examples of what to enter:

Enter a description like the following –	**Do not enter –**
Metal furniture manufacturing	Furniture company
Retail grocery store	Grocery store
Petroleum refining	Oil company
Cattle ranch	Ranch

29. Print two or more words to describe the kind of work the person did. If the person was a trainee, apprentice, or helper, include that in the description.

Some examples of what to enter:

Enter a description like the following –	**Do not enter –**
Production clerk	Clerk
Carpenter's helper	Helper
Auto engine mechanic	Mechanic
Registered nurse	Nurse

30. Mark **Employee of a PRIVATE NOT-FOR-PROFIT . . . organization** if the person worked for a cooperative, credit union, mutual insurance company, or similar organization.

Employees of foreign governments, the United Nations, and other international organizations should mark **PRIVATE NOT-FOR-PROFIT . . . organization**.

For persons who worked at a public school, college or university, mark the appropriate *government* category; for example, mark **State GOVERNMENT employee** for a state university, or mark **Local GOVERNMENT employee** for a county-run community college or a city-run public school.

Instructions for Questions 31a through 32h

31a. Look at the instructions for question 21a to see what to count as work.

b. Count every week in which the person did any work at all, even for an hour.

32. Fill the **Yes** or **No** circle for each part and enter the amount received during 1989.

If income from any source was received jointly by household members, report, if possible, the appropriate share for each person; otherwise, report the whole amount for only one person and fill the **No** circle for the other person.

a. Include wages and salaries from *all* jobs *before* deductions. Be sure to include any tips, commissions, or bonuses. Owners of *incorporated* businesses should enter their salary here. Military personnel should include base pay plus cash housing and/or subsistence allowance, flight pay, uniform allotments, reenlistment bonuses, etc.

b. Include *NONFARM* profit (or loss) from self-employment in sole proprietorships and partnerships. *Exclude* profit (or loss) of incorporated businesses you own.

c. Include *FARM* profit (or loss) from self-employment in sole proprietorships and partnerships. *Exclude* profit (or loss) of incorporated farm businesses you own. Also *exclude* amounts from land rented for cash but include amounts from land rented for shares.

d. Include interest received or credited to checking and savings accounts, money market funds, certificates of deposit (CDs), IRAs, KEOGHs, and government bonds.

Include dividends received, credited, or reinvested from ownership of stocks or mutual funds.

Include profit (or loss) from royalties and the rental of land, buildings or real estate, or from roomers or boarders. Income received by self-employed persons whose *primary* source of income is from renting property or from royalties should be included in questions 32b or 32c above. Include regular payments from an estate or trust fund.

e. Include Social Security (and/or Railroad Retirement) payments to retired persons, to dependents of deceased insured workers, and to disabled workers *before* Medicare deductions.

f. Include Supplemental Security Income received by aged, blind, or disabled persons, Aid to Families with Dependent Children, or income from other government programs such as general or emergency assistance. Do not include assistance received from private charities. *Exclude* assistance to pay for heating (cooling) costs.

g. Include retirement, disability, or survivor benefits received from companies and unions; Federal, State, and local governments, and the U.S. military. Include regular income from annuities and IRA or KEOGH retirement plans.

h. Include Veterans' (VA) disability compensation and educational assistance payments (VEAP), unemployment compensation, child support or alimony, and all other regular payments such as Armed Forces transfer payments; assistance from private charities; regular contributions from persons not living in the household, etc.

Do not include the following as income in any item:

- Refunds or rebates of any kind
- Withdrawals from savings of any kind
- Capital gains or losses from the sale of homes, shares of stock, etc.
- Inheritances or insurance settlements
- Any type of loan
- Pay in-kind such as food, free rent, etc.

What the Census Is About — Some Questions and Answers

Why are we taking a census?
The most important reason for taking a decennial census is to determine how many representatives each state will have in Congress.

What does the Census Bureau do with the information you provide?
The individual information collected in the census is grouped together into statistical totals. Information such as the number of persons in a given area, their ages, educational background, the characteristics of their housing, etc., enable government, business, and industry to plan more effectively.

How long have we been taking the census?
The first census was taken in 1790 in accordance with the requirement in the first article of the constitution. A census has been taken every 10 years since. The 1990 Decennial Census marks the 200th anniversary of the census.

How are you being counted?
Census forms are delivered to all households a few days before census day. Households are requested to fill out the form and mail it back to the census office.

Why the Census Asks Certain Questions

Here are a few reasons for asking some of the questions.

It is as important to get information about people and their houses as it is to count them.

Name?
Names help make sure that everyone in a household is counted, but that no one is counted twice.

Value or rent?
Government and planning agencies use answers to these questions in combination with other information to develop housing programs to meet the needs of people at different economic levels.

Complete plumbing?
This question gives information on the quality of housing. The data are used with other statistics to show how the "level of living" compares in various areas and how it has changed over time.

Place of birth?
This question provides information used to study long-term trends as to where people move and to study migration patterns and differences in growth patterns.

Job?
Answers to the questions about the jobs people hold provide information on the extent and types of employment in different areas of the country. From this information, training programs can be developed and the need for new industries can be determined.

Income?
Income, more than anything else, determines how families or persons live. Income information makes it possible to compare the economic levels of different areas.

CENSUS '90

OFFICIAL 1990 U.S. CENSUS FORM

Thank you for taking time to complete and return this census questionnaire. It's important to you, your community, and the Nation.

The law requires answers but guarantees privacy.

By law (Title 13, U.S. Code), you're required to answer the census questions to the best of your knowledge. However, the same law guarantees that your census form remains confidential. For 72 years--or until the year 2062--only Census Bureau employees can see your form. No one else--no other government body, no police department, no court system or welfare agency--is permitted to see this confidential information under any circumstances.

How to get started--and get help.

Start by listing on the next page the names of all the people who live in your home. Please answer all questions with a black lead pencil. You'll find detailed instructions for answering the census in the enclosed guide. If you need additional help, call the toll-free telephone number to the left, near your address.

Please answer and return your form promptly.

Complete your form and return it by April 1, 1990 in the postage-paid envelope provided. Avoid the inconvenience of having a census taker visit your home.

Again, thank you for answering the 1990 Census.
Remember: Return the completed form by April 1, 1990.

Para personas de habla hispana –
(For Spanish-speaking persons)

Si usted desea un cuestionario del censo en español, llame sin cargo alguno al siguiente número: **1-800-CUENTAN**
(o sea 1-800-283-6826)

U.S. Department of Commerce
BUREAU OF THE CENSUS

FORM **D-2**

OMB No. 0607-0628
Approval Expires 07/31/91

Page 1

The 1990 census must count every person at his or her "usual residence." This means the place where the person lives and sleeps most of the time.

1a. List on the numbered lines below the name of each person living here on Sunday, April 1, including all persons staying here who have no other home. If EVERYONE at this address is staying here temporarily and usually lives somewhere else, follow the instructions given in question 1b below.

Include

- Everyone who usually lives here such as family members, housemates and roommates, foster children, roomers, boarders, and live-in employees
- Persons who are temporarily away on a business trip, on vacation, or in a general hospital
- College students who stay here while attending college
- Persons in the Armed Forces who live here
- Newborn babies still in the hospital
- Children in boarding schools below the college level
- Persons who stay here most of the week while working even if they have a home somewhere else
- Persons with no other home who are staying here on April 1

Do NOT include

- Persons who usually live somewhere else
- Persons who are away in an institution such as a prison, mental hospital, or a nursing home
- College students who live somewhere else while attending college
- Persons in the Armed Forces who live somewhere else
- Persons who stay somewhere else most of the week while working

Print last name, first name, and middle initial for each person. Begin on line 1 with the household member (or one of the household members) in whose name this house or apartment is owned, being bought, or rented. If there is no such person, start on line 1 with any adult household member.

	LAST	FIRST	INITIAL		LAST	FIRST	INITIAL
1				7			
2				8			
3				9			
4				10			
5				11			
6				12			

1b. If EVERYONE is staying here only temporarily and usually lives somewhere else, list the name of each person on the numbered lines above, fill this circle ⟶ ○ and print their usual address below. DO NOT PRINT THE ADDRESS LISTED ON THE FRONT COVER.

House number | Street or road/Rural route and box number | Apartment number

City | State | ZIP Code

County or foreign country | Names of nearest intersecting streets or roads

NOW PLEASE OPEN THE FLAP TO PAGE 2 AND ANSWER ALL QUESTIONS FOR THE FIRST 7 PEOPLE LISTED. USE A BLACK LEAD PENCIL ONLY.

PLEASE ALSO ANSWER HOUSING QUESTIONS ON PAGE 3 →

Please fill one column → for each person listed in Question 1a on page 1.

	PERSON 1	PERSON 2
	Last name First name Middle initial	Last name First name Middle initial
2. How is this person related to PERSON 1? Fill ONE circle for each person. If **Other relative** of person in column 1, fill circle and print exact relationship, such as mother-in-law, grandparent, son-in-law, niece, cousin, and so on.	START in this column with the household member (or one of the members) in whose name the home is owned, being bought, or rented. If there is no such person, start in this column with any adult household member.	If a RELATIVE of Person 1: ○ Husband/wife ○ Brother/sister ○ Natural-born or adopted son/daughter ○ Father/mother ○ Grandchild ○ Other relative → ○ Stepson/ stepdaughter If NOT RELATED to Person 1: ○ Roomer, boarder, or foster child ○ Unmarried partner ○ Housemate, roommate ○ Other nonrelative
3. Sex Fill ONE circle for each person.	○ Male ○ Female	○ Male ○ Female
4. Race Fill ONE circle for the race that the person considers himself/herself to be. If **Indian (Amer.)**, print the name of the enrolled or principal tribe. → If **Other Asian or Pacific Islander (API)**, print one group, for example: Hmong, Fijian, Laotian, Thai, Tongan, Pakistani, Cambodian, and so on. → If **Other race**, print race. →	○ White ○ Black or Negro ○ Indian (Amer.) (Print the name of the enrolled or principal tribe.) → ○ Eskimo ○ Aleut Asian or Pacific Islander (API) ○ Chinese ○ Japanese ○ Filipino ○ Asian Indian ○ Hawaiian ○ Samoan ○ Korean ○ Guamanian ○ Vietnamese ○ Other API → ○ Other race (Print race) →	○ White ○ Black or Negro ○ Indian (Amer.) (Print the name of the enrolled or principal tribe.) → ○ Eskimo ○ Aleut Asian or Pacific Islander (API) ○ Chinese ○ Japanese ○ Filipino ○ Asian Indian ○ Hawaiian ○ Samoan ○ Korean ○ Guamanian ○ Vietnamese ○ Other API → ○ Other race (Print race) →
5. Age and year of birth **a.** Print each person's age at last birthday. Fill in the matching circle below each box. **b.** Print each person's year of birth and fill the matching circle below each box.	a. Age: 1 ● 8 b. Year of birth: 1 ● 8 0 0 0 0 1 2 3 4 5 6 7 8 9	a. Age: b. Year of birth: 1 ● 8 0 0 0 0 1 2 3 4 5 6 7 8 9
6. Marital status Fill ONE circle for each person.	○ Now married ○ Separated ○ Widowed ○ Never married ○ Divorced	○ Now married ○ Separated ○ Widowed ○ Never married ○ Divorced
7. Is this person of Spanish/Hispanic origin? Fill ONE circle for each person. If **Yes, other Spanish/Hispanic**, print one group. →	○ No (not Spanish/Hispanic) ○ Yes, Mexican, Mexican-Am., Chicano ○ Yes, Puerto Rican ○ Yes, Cuban ○ Yes, other Spanish/Hispanic (Print one group, for example: Argentinean, Colombian, Dominican, Nicaraguan, Salvadoran, Spaniard, and so on.) →	○ No (not Spanish/Hispanic) ○ Yes, Mexican, Mexican-Am., Chicano ○ Yes, Puerto Rican ○ Yes, Cuban ○ Yes, other Spanish/Hispanic (Print one group, for example: Argentinean, Colombian, Dominican, Nicaraguan, Salvadoran, Spaniard, and so on.) →
FOR CENSUS USE →	○ ○	○ ○

PERSON 7

Last name

First name | Middle initial

If a RELATIVE of Person 1:

- ○ Husband/wife
- ○ Natural-born or adopted son/daughter
- ○ Stepson/ stepdaughter
- ○ Brother/sister
- ○ Father/mother
- ○ Grandchild
- ○ Other relative

If NOT RELATED to Person 1:

- ○ Roomer, boarder, or foster child
- ○ Housemate, roommate
- ○ Unmarried partner
- ○ Other nonrelative

- ○ Male
- ○ Female

- ○ White
- ○ Black or Negro
- ○ Indian (Amer.) (Print the name of the enrolled or principal tribe.)
- ○ Eskimo
- ○ Aleut

Asian or Pacific Islander (API)

- ○ Chinese
- ○ Filipino
- ○ Hawaiian
- ○ Korean
- ○ Vietnamese
- ○ Japanese
- ○ Asian Indian
- ○ Samoan
- ○ Guamanian
- ○ Other API
- ○ Other race (Print race)

a. Age

b. Year of birth — 1 ● 8 ○ ○ ○ ○

Age	0	1	2	3	4	5	6	7	8	9
0	○	○	○	○	○	○	○	○	○	○
1	○	○	○	○	○	○	○	○	○	○

Year of birth	0	1	2	3	4	5	6	7	8	9
1	●	○	○	○	○	○	○	○	○	○
9	○	○	○	○	○	○	○	○	○	○

- ○ Now married
- ○ Widowed
- ○ Divorced
- ○ Separated
- ○ Never married

- ○ No (not Spanish/Hispanic)
- ○ Yes, Mexican, Mexican-Am., Chicano
- ○ Yes, Puerto Rican
- ○ Yes, Cuban
- ○ Yes, other Spanish/Hispanic (Print one group, for example: Argentinean, Colombian, Dominican, Nicaraguan, Salvadoran, Spaniard, and so on.)

NOW PLEASE ANSWER QUESTIONS H1a—H26 FOR THIS HOUSEHOLD

H1a. Did you leave anyone out of your list of persons for Question 1a on page 1 because you were not sure if the person should be listed — for example, someone temporarily away on a business trip or vacation, a newborn baby still in the hospital, or a person who stays here once in a while and has no other home?

- ○ Yes, please print the name(s) and reason(s).
- ○ No

b. Did you include anyone in your list of persons for Question 1a on page 1 even though you were not sure that the person should be listed — for example, a visitor who is staying here temporarily or a person who usually lives somewhere else?

- ○ Yes, please print the name(s) and reason(s).
- ○ No

H2. Which best describes this building? Include all apartments, flats, etc., even if vacant.

- ○ A mobile home or trailer
- ○ A one-family house detached from any other house
- ○ A one-family house attached to one or more houses
- ○ A building with 2 apartments
- ○ A building with 3 or 4 apartments
- ○ A building with 5 to 9 apartments
- ○ A building with 10 to 19 apartments
- ○ A building with 20 to 49 apartments
- ○ A building with 50 or more apartments
- ○ Other

H3. How many rooms do you have in this house or apartment? Do NOT count bathrooms, porches, balconies, foyers, halls, or half-rooms.

- ○ 1 room
- ○ 2 rooms
- ○ 3 rooms
- ○ 4 rooms
- ○ 5 rooms
- ○ 6 rooms
- ○ 7 rooms
- ○ 8 rooms
- ○ 9 or more rooms

H4. Is this house or apartment —

- ○ Owned by you or someone in this household with a mortgage or loan?
- ○ Owned by you or someone in this household free and clear (without a mortgage)?
- ○ Rented for cash rent?
- ○ Occupied without payment of cash rent?

If this is a ONE-FAMILY HOUSE —

H5a. Is this house on ten or more acres?

- ○ Yes
- ○ No

b. Is there a business (such as a store or barber shop) or a medical office on this property?

- ○ Yes
- ○ No

Answer only if you or someone in this household OWNS OR IS BUYING this house or apartment —

H6. What is the value of this property; that is, how much do you think this house and lot or condominium unit would sell for if it were for sale?

- ○ Less than $10,000
- ○ $10,000 to $14,999
- ○ $15,000 to $19,999
- ○ $20,000 to $24,999
- ○ $25,000 to $29,999
- ○ $30,000 to $34,999
- ○ $35,000 to $39,999
- ○ $40,000 to $44,999
- ○ $45,000 to $49,999
- ○ $50,000 to $54,999
- ○ $55,000 to $59,999
- ○ $60,000 to $64,999
- ○ $65,000 to $69,999
- ○ $70,000 to $74,999
- ○ $75,000 to $79,999
- ○ $80,000 to $89,999
- ○ $90,000 to $99,999
- ○ $100,000 to $124,999
- ○ $125,000 to $149,999
- ○ $150,000 to $174,999
- ○ $175,000 to $199,999
- ○ $200,000 to $249,999
- ○ $250,000 to $299,999
- ○ $300,000 to $399,999
- ○ $400,000 to $499,999
- ○ $500,000 or more

Answer only if you PAY RENT for this house or apartment —

H7a. What is the monthly rent?

- ○ Less than $80
- ○ $80 to $99
- ○ $100 to $124
- ○ $125 to $149
- ○ $150 to $174
- ○ $175 to $199
- ○ $200 to $224
- ○ $225 to $249
- ○ $250 to $274
- ○ $275 to $299
- ○ $300 to $324
- ○ $325 to $349
- ○ $350 to $374
- ○ $375 to $399
- ○ $400 to $424
- ○ $425 to $449
- ○ $450 to $474
- ○ $475 to $499
- ○ $500 to $524
- ○ $525 to $549
- ○ $550 to $599
- ○ $600 to $649
- ○ $650 to $699
- ○ $700 to $749
- ○ $750 to $999
- ○ $1,000 or more

b. Does the monthly rent include any meals?

- ○ Yes
- ○ No

FOR CENSUS USE

A. Total persons

	0	1	2	3	4	5	6	7	8	9
	○	○	○	○	○	○	○	○	○	○

B. Type of unit

Occupied: ○ First form ○ Cont'n

Vacant: ○ Regular ○ Usual home elsewhere

C1. Vacancy status

- ○ For rent
- ○ For sale only
- ○ Rented or sold, not occupied
- ○ For seas/ rec/occ
- ○ For migrant workers
- ○ Other vacant

C2. Is this unit boarded up?

- ○ Yes
- ○ No

D. Months vacant

- ○ Less than 1
- ○ 1 up to 2
- ○ 2 up to 6
- ○ 6 up to 12
- ○ 12 up to 24
- ○ 24 or more

E. Complete after

○ LR	○ TC	○ QA	JIC 1
○ P/F	○ RE	○ I/T	○
○ MV	○ ED	○ EN	
○ P0	○ P3	○ P6	
○ P1	○ P4	○ IA	JIC 2
○ P2	○ P5	○ SM	○

F. Cov.

○ 1b ○ 1a ○ 7 ○ H1

G. DO ID

	0	1	2	3	4	5	6	7	8	9
	○	○	○	○	○	○	○	○	○	○

PLEASE ALSO ANSWER THESE

H8. When did the person listed in column 1 on page 2 move into this house or apartment?

- ○ 1989 or 1990
- ○ 1985 to 1988
- ○ 1980 to 1984
- ○ 1970 to 1979
- ○ 1960 to 1969
- ○ 1959 or earlier

H9. How many bedrooms do you have; that is, how many bedrooms would you list if this house or apartment were on the market for sale or rent?

- ○ No bedroom
- ○ 1 bedroom
- ○ 2 bedrooms
- ○ 3 bedrooms
- ○ 4 bedrooms
- ○ 5 or more bedrooms

H10. Do you have COMPLETE plumbing facilities in this house or apartment; that is, 1) hot and cold piped water, 2) a flush toilet, and 3) a bathtub or shower?

- ○ Yes, have all three facilities
- ○ No

H11. Do you have COMPLETE kitchen facilities; that is, 1) a sink with piped water, 2) a range or cookstove, and 3) a refrigerator?

- ○ Yes
- ○ No

H12. Do you have a telephone in this house or apartment?

- ○ Yes
- ○ No

H13. How many automobiles, vans, and trucks of one-ton capacity or less are kept at home for use by members of your household?

- ○ None
- ○ 1
- ○ 2
- ○ 3
- ○ 4
- ○ 5
- ○ 6
- ○ 7 or more

H14. Which FUEL is used MOST for heating this house or apartment?

- ○ Gas: from underground pipes serving the neighborhood
- ○ Gas: bottled, tank, or LP
- ○ Electricity
- ○ Fuel oil, kerosene, etc.
- ○ Coal or coke
- ○ Wood
- ○ Solar energy
- ○ Other fuel
- ○ No fuel used

H15. Do you get water from —

- ○ A public system such as a city water department, or private company?
- ○ An individual drilled well?
- ○ An individual dug well?
- ○ Some other source such as a spring, creek, river, cistern, etc.?

H16. Is this building connected to a public sewer?

- ○ Yes, connected to public sewer
- ○ No, connected to septic tank or cesspool
- ○ No, use other means

H17. About when was this building first built?

- ○ 1989 or 1990
- ○ 1985 to 1988
- ○ 1980 to 1984
- ○ 1970 to 1979
- ○ 1960 to 1969
- ○ 1950 to 1959
- ○ 1940 to 1949
- ○ 1939 or earlier
- ○ Don't know

H18. Is this house or apartment part of a condominium?

- ○ Yes
- ○ No

If you live in an apartment building, skip to H20.

H19a. Is this house on less than 1 acre?

- ○ Yes — *Skip to H20*
- ○ No

b. In 1989, what were the actual sales of all agricultural products from this property?

- ○ None
- ○ $1 to $999
- ○ $1,000 to $2,499
- ○ $2,500 to $4,999
- ○ $5,000 to $9,999
- ○ $10,000 or more

H20. What are the yearly costs of utilities and fuels for this house or apartment?
If you have lived here less than 1 year, estimate the yearly cost.

a. Electricity

$ .00
Yearly cost — Dollars

OR

- ○ Included in rent or in condominium fee
- ○ No charge or electricity not used

b. Gas

$ .00
Yearly cost — Dollars

OR

- ○ Included in rent or in condominium fee
- ○ No charge or gas not used

c. Water

$ .00
Yearly cost — Dollars

OR

- ○ Included in rent or in condominium fee
- ○ No charge

d. Oil, coal, kerosene, wood, etc.

$ .00
Yearly cost — Dollars

OR

- ○ Included in rent or in condominium fee
- ○ No charge or these fuels not used

QUESTIONS FOR YOUR HOUSEHOLD

INSTRUCTION:

Answer questions H21 TO H26, if this is a one-family house, a condominium, or a mobile home that someone in this household OWNS OR IS BUYING; otherwise, go to page 6.

H21. What were the real estate taxes on THIS property last year?

$ .00
Yearly amount — Dollars

OR

○ None

H22. What was the annual payment for fire, hazard, and flood insurance on THIS property?

$ .00
Yearly amount — Dollars

OR

○ None

H23a. Do you have a mortgage, deed of trust, contract to purchase, or similar debt on THIS property?

○ Yes, mortgage, deed of trust, or similar debt
○ Yes, contract to purchase
} *Go to H23b*
○ No — *Skip to H24a*

b. How much is your regular monthly mortgage payment on THIS property? Include payment only on first mortgage or contract to purchase.

$ .00
Monthly amount — Dollars

OR

○ No regular payment required — *Skip to H24a*

c. Does your regular monthly mortgage payment include payments for real estate taxes on THIS property?

○ Yes, taxes included in payment
○ No, taxes paid separately or taxes not required

d. Does your regular monthly mortgage payment include payments for fire, hazard, or flood insurance on THIS property?

○ Yes, insurance included in payment
○ No, insurance paid separately or no insurance

H24a. Do you have a second or junior mortgage or a home equity loan on THIS property?

○ Yes
○ No — *Skip to H25*

b. How much is your regular monthly payment on all second or junior mortgages and all home equity loans?

$ .00
Monthly amount — Dollars

OR

○ No regular payment required

Answer ONLY if this is a CONDOMINIUM —

H25. What is the monthly condominium fee?

$ .00
Monthly amount — Dollars

Answer ONLY if this is a MOBILE HOME —

H26. What was the total cost for personal property taxes, site rent, registration fees, and license fees on this mobile home and its site last year? Exclude real estate taxes.

$ .00
Yearly amount — Dollars

Please turn to page 6.

PLEASE ANSWER THESE QUESTIONS

PERSON 1

Last name | First name | Middle initial

8. In what U.S. State or foreign country was this person born?

(Name of State or foreign country; or Puerto Rico, Guam, etc.)

9. Is this person a CITIZEN of the United States?

- ○ Yes, born in the United States — *Skip to 11*
- ○ Yes, born in Puerto Rico, Guam, the U.S. Virgin Islands, or Northern Marianas
- ○ Yes, born abroad of American parent or parents
- ○ Yes, U.S. citizen by naturalization
- ○ No, not a citizen of the United States

10. When did this person come to the United States to stay?

- ○ 1987 to 1990
- ○ 1985 or 1986
- ○ 1982 to 1984
- ○ 1980 or 1981
- ○ 1975 to 1979
- ○ 1970 to 1974
- ○ 1965 to 1969
- ○ 1960 to 1964
- ○ 1950 to 1959
- ○ Before 1950

11. At any time since February 1, 1990, has this person attended regular school or college? Include only nursery school, kindergarten, elementary school, and schooling which leads to a high school diploma or a college degree.

- ○ No, has not attended since February 1
- ○ Yes, public school, public college
- ○ Yes, private school, private college

12. How much school has this person COMPLETED? Fill ONE circle for the highest level COMPLETED or degree RECEIVED. If currently enrolled, mark the level of previous grade attended or highest degree received.

- ○ No school completed
- ○ Nursery school
- ○ Kindergarten
- ○ 1st, 2nd, 3rd, or 4th grade
- ○ 5th, 6th, 7th, or 8th grade
- ○ 9th grade
- ○ 10th grade
- ○ 11th grade
- ○ 12th grade, **NO DIPLOMA**
- ○ **HIGH SCHOOL GRADUATE** - high school DIPLOMA or the equivalent (For example: GED)
- ○ Some college but no degree
- ○ Associate degree in college - Occupational program
- ○ Associate degree in college - Academic program
- ○ Bachelor's degree (For example: BA, AB, BS)
- ○ Master's degree (For example: MA, MS, MEng, MEd, MSW, MBA)
- ○ Professional school degree (For example: MD, DDS, DVM, LLB, JD)
- ○ Doctorate degree (For example: PhD, EdD)

13. What is this person's ancestry or ethnic origin? **(See instruction guide for further information.)**

(For example: German, Italian, Afro-Amer., Croatian, Cape Verdean, Dominican, Ecuadoran, Haitian, Cajun, French Canadian, Jamaican, Korean, Lebanese, Mexican, Nigerian, Irish, Polish, Slovak, Taiwanese, Thai, Ukrainian, etc.)

14a. Did this person live in this house or apartment 5 years ago (on April 1, 1985)?

- ○ Born after April 1, 1985 — *Go to questions for the next person*
- ○ Yes — *Skip to 15a*
- ○ No

b. Where did this person live 5 years ago (on April 1, 1985)?

(1) Name of U.S. State or foreign country

(If outside U.S., print answer above and skip to 15a.)

(2) Name of county in the U.S.

(3) Name of city or town in the U.S.

(4) Did this person live inside the city or town limits?

- ○ Yes
- ○ No, lived outside the city/town limits

15a. Does this person speak a language other than English at home?

- ○ Yes
- ○ No — *Skip to 16*

b. What is this language?

(For example: Chinese, Italian, Spanish, Vietnamese)

c. How well does this person speak English?

- ○ Very well
- ○ Well
- ○ Not well
- ○ Not at all

16. When was this person born?

- ○ Born before April 1, 1975 — *Go to 17a*
- ○ Born April 1, 1975 or later — *Go to questions for the next person*

17a. Has this person ever been on active-duty military service in the Armed Forces of the United States or ever been in the United States military Reserves or the National Guard? If service was in Reserves or National Guard only, see instruction guide.

- ○ Yes, now on active duty
- ○ Yes, on active duty in past, but not now
- ○ Yes, service in Reserves or National Guard only — *Skip to 18*
- ○ No — *Skip to 18*

b. Was active-duty military service during — Fill a circle for each period in which this person served.

- ○ September 1980 or later
- ○ May 1975 to August 1980
- ○ Vietnam era (August 1964—April 1975)
- ○ February 1955—July 1964
- ○ Korean conflict (June 1950—January 1955)
- ○ World War II (September 1940—July 1947)
- ○ World War I (April 1917—November 1918)
- ○ Any other time

c. In total, how many years of active-duty military service has this person had?

Years

18. Does this person have a physical, mental, or other health condition that has lasted for 6 or more months and which —

a. Limits the kind or amount of work this person can do at a job?

- ○ Yes
- ○ No

b. Prevents this person from working at a job?

- ○ Yes
- ○ No

19. Because of a health condition that has lasted for 6 or more months, does this person have any difficulty —

a. Going outside the home alone, for example, to shop or visit a doctor's office?

- ○ Yes
- ○ No

b. Taking care of his or her own personal needs, such as bathing, dressing, or getting around inside the home?

- ○ Yes
- ○ No

If this person is a female —

20. How many babies has she ever had, not counting stillbirths? Do not count her stepchildren or children she has adopted.

None 1 2 3 4 5 6 7 8 9 10 11 12 or more

○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○

21a. Did this person work at any time LAST WEEK?

- ○ Yes — Fill this circle if this person worked full time or part time. (Count part-time work such as delivering papers, or helping without pay in a family business or farm. Also count active duty in the Armed Forces.)
- ○ No — Fill this circle if this person did not work, or did only own housework, school work, or volunteer work. — *Skip to 25*

b. How many hours did this person work LAST WEEK (at all jobs)? Subtract any time off; add overtime or extra hours worked.

Hours

22. At what location did this person work LAST WEEK?

If this person worked at more than one location, print where he or she worked most last week.

a. Address (Number and street)

(If the exact address is not known, give a description of the location such as the building name or the nearest street or intersection.)

b. Name of city, town, or post office

c. Is the work location inside the limits of that city or town?

- ○ Yes
- ○ No, outside the city/town limits

d. County

e. State

f. ZIP Code

FOR PERSON 1 ON PAGE 2

23a. How did this person usually get to work LAST WEEK? If this person usually used more than one method of transportation during the trip, fill the circle of the one used for most of the distance.

- ○ Car, truck, or van
- ○ Bus or trolley bus
- ○ Streetcar or trolley car
- ○ Subway or elevated
- ○ Railroad
- ○ Ferryboat
- ○ Taxicab
- ○ Motorcycle
- ○ Bicycle
- ○ Walked
- ○ Worked at home — *Skip to 28*
- ○ Other method

If "car, truck, or van" is marked in 23a, go to 23b. Otherwise, skip to 24a.

b. How many people, including this person, usually rode to work in the car, truck, or van LAST WEEK?

- ○ Drove alone
- ○ 2 people
- ○ 3 people
- ○ 4 people
- ○ 5 people
- ○ 6 people
- ○ 7 to 9 people
- ○ 10 or more people

24a. What time did this person usually leave home to go to work LAST WEEK?

- ○ a.m.
- ○ p.m.

b. How many minutes did it usually take this person to get from home to work LAST WEEK?

Minutes — *Skip to 28*

25. Was this person TEMPORARILY absent or on layoff from a job or business LAST WEEK?

- ○ Yes, on layoff
- ○ Yes, on vacation, temporary illness, labor dispute, etc.
- ○ No

26a. Has this person been looking for work during the last 4 weeks?

- ○ Yes
- ○ No — *Skip to 27*

b. Could this person have taken a job LAST WEEK if one had been offered?

- ○ No, already has a job
- ○ No, temporarily ill
- ○ No, other reasons (in school, etc.)
- ○ Yes, could have taken a job

27. When did this person last work, even for a few days?

- ○ 1990
- ○ 1989
- ○ 1988
- ○ 1985 to 1987

Go to 28

- ○ 1980 to 1984
- ○ 1979 or earlier
- ○ Never worked

Skip to 32

28-30. CURRENT OR MOST RECENT JOB ACTIVITY. Describe clearly this person's chief job activity or business last week. If this person had more than one job, describe the one at which this person worked the most hours. If this person had no job or business last week, give information for his/her last job or business since 1985.

28. Industry or Employer

a. For whom did this person work? If now on active duty in the Armed Forces, fill this circle → ○ and print the branch of the Armed Forces.

(Name of company, business, or other employer)

b. What kind of business or industry was this? Describe the activity at location where employed.

(For example: hospital, newspaper publishing, mail order house, auto engine manufacturing, retail bakery)

c. Is this mainly — Fill ONE circle

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

29. Occupation

a. What kind of work was this person doing?

(For example: registered nurse, personnel manager, supervisor of order department, gasoline engine assembler, cake icer)

b. What were this person's most important activities or duties?

(For example: patient care, directing hiring policies, supervising order clerks, assembling engines, icing cakes)

30. Was this person — Fill ONE circle

- ○ Employee of a PRIVATE FOR PROFIT company or business or of an individual, for wages, salary, or commissions
- ○ Employee of a PRIVATE NOT-FOR-PROFIT, tax-exempt, or charitable organization
- ○ Local GOVERNMENT employee (city, county, etc.)
- ○ State GOVERNMENT employee
- ○ Federal GOVERNMENT employee
- ○ SELF-EMPLOYED in own NOT INCORPORATED business, professional practice, or farm
- ○ SELF-EMPLOYED in own INCORPORATED business, professional practice, or farm
- ○ Working WITHOUT PAY in family business or farm

31a. Last year (1989), did this person work, even for a few days, at a paid job or in a business or farm?

- ○ Yes
- ○ No — *Skip to 32*

b. How many weeks did this person work in 1989? Count paid vacation, paid sick leave, and military service.

Weeks

c. During the weeks WORKED in 1989, how many hours did this person usually work each week?

Hours

32. INCOME IN 1989 —

Fill the "Yes" circle below for each income source received during 1989. Otherwise, fill the "No" circle. If "Yes," enter the total amount received during 1989.

For income received jointly, see instruction guide. If exact amount is not known, please give best estimate.

If net income was a loss, write "Loss" above the dollar amount.

a. Wages, salary, commissions, bonuses, or tips from all jobs — Report amount before deductions for taxes, bonds, dues, or other items.

○ Yes → $ .00 Annual amount — Dollars
○ No

b. Self-employment income from own nonfarm business, including proprietorship and partnership — Report NET income after business expenses.

○ Yes → $ .00 Annual amount — Dollars
○ No

c. Farm self-employment income — Report NET income after operating expenses. Include earnings as a tenant farmer or sharecropper.

○ Yes → $ .00 Annual amount — Dollars
○ No

d. Interest, dividends, net rental income or royalty income, or income from estates and trusts — Report even small amounts credited to an account.

○ Yes → $ .00 Annual amount — Dollars
○ No

e. Social Security or Railroad Retirement

○ Yes → $ .00 Annual amount — Dollars
○ No

f. Supplemental Security Income (SSI), Aid to Families with Dependent Children (AFDC), or other public assistance or public welfare payments.

○ Yes → $ .00 Annual amount — Dollars
○ No

g. Retirement, survivor, or disability pensions — Do NOT include Social Security.

○ Yes → $ .00 Annual amount — Dollars
○ No

h. Any other sources of income received regularly such as Veterans' (VA) payments, unemployment compensation, child support, or alimony — Do NOT include lump-sum payments such as money from an inheritance or the sale of a home.

○ Yes → $ .00 Annual amount — Dollars
○ No

33. What was this person's total income in 1989? Add entries in questions 32a through 32h; subtract any losses. If total amount was a loss, write "Loss" above amount.

○ None OR $ .00 Annual amount — Dollars

Please turn the page and answer questions for Person 2 listed on page 1. If this is the last person listed in question 1a on page 1, go to the back of the form.

APPENDIX F.
Data Products and User Assistance

CONTENTS

The 1990 census data products, being released during 1991-93, are available in a variety of new and traditional media. The Census Bureau has increased the product options available to data users in an effort to meet a variety of requirements and maximize the usefulness of the data. For example, laser discs, called CD-ROM (compact disc—read-only memory), are a new data delivery medium.

The Census Bureau also has expanded services and sources of assistance available to data users. For example, the State Data Center Program has been expanded to include over 1,400 organizations to provide data and services to the public.

This appendix provides a detailed introduction to the 1990 census data products and related materials, such as maps and reference publications. It concludes by describing sources of assistance and other Census Bureau data available to the public.

DATA PRODUCTS

Printed reports and computer tape files traditionally are the most widely used products. The Census Bureau also offers data on microfiche, on CD-ROM laser discs, and through its online service, CENDATA™. These various products are described below. For information about prices and how to order, write or call Customer Services. (See the ''Sources of Assistance'' section for the address and phone number.)

The data products present statistics about the subjects covered in the 1990 census questionnaires. These subjects are listed in figure 1, page F–7. As the figure shows, there are 100-percent subjects (those covered in questions asked of everyone or about every housing unit) and sample subjects (those covered in questions asked at about one out of every six housing units). Generally, a data product presents either 100-percent data prepared by tabulating the responses to the 100-percent questions from all questionnaires, or sample data prepared by tabulating only the responses to the 100-percent and sample questions from the ''long-form'' questionnaires. Two report series, 1990 CPH-3 and 1990 CPH-4 (see figure 2, page F–8), present both 100-percent and sample data.

Printed Reports

Printed reports are the most convenient and readily available source of data for most census users. The Census Bureau releases the reports in several series (see figure 2) that are grouped under three broad titles: *1990 Census of Population and Housing* (1990 CPH), *1990 Census of Population* (1990 CP), and *1990 Census of Housing* (1990 CH). There also are reports, not reflected in figure 2, for the outlying areas of the Pacific. The reports are sold by the Superintendent of Documents, U.S. Government Printing Office. (See the ''Sources of Assistance'' section for the address and phone number.)

In several series, there are separate reports for each State. The geographic coverage of the State reports is listed in figure 2. The United States summaries for these report series contain, for the most part, data for the United States, regions, divisions, States, metropolitan areas (MA's), urbanized areas (UA's), counties, American Indian and Alaska Native areas, places with 10,000 or more persons, and other large substate areas (for example, county subdivisions, such as towns and townships, with 10,000 or more persons in selected States).

Report series that present data for small areas, such as census tracts, contain limited subject-matter detail (for example, counts of people by age ranges—under 5 years, 5 to 9 years, etc.—rather than by single years). Report series that include greater amounts of subject-matter detail include less geographic detail.

Computer Tape Files

The Census Bureau provides more data on tape and other machine-readable products than in printed reports. These products are sold by the Census Bureau's Customer Services. There are several general types of data files released on computer tape (available on both reels and cartridges). They are introduced below, and more information is presented in figures 3 and 4, pages F–11 through F–13.

Public Law 94-171 Data—This data file presents the counts designed and formatted for use in legislative redistricting. These counts also are available on CD-ROM and paper listings. Excerpts are available on CENDATA™. The counts, for areas as small as blocks, census tracts, and voting districts, include totals for population, race groups, persons of Hispanic origin, population 18 years and over, and housing units. (See figure 4.)

Summary Tape Files (STF's)— These computer tape files provide statistics with greater subject-matter detail than printed reports. They also present statistics for some types of areas, such as block groups and blocks, that are not included in the reports. (See figure 3.)

Here are some important features of STF's:

- Each STF presents a particular set of data tables for specific types of geographic areas.
- Each STF has three or more file types (indicated by a letter suffix attached to the STF number) that differ in the geographic levels reported, but contain the same data detail.
- STF's 1 and 2 contain 100-percent data, and STF's 3 and 4 offer sample data.
- STF's 1 and 3 report on smaller areas and offer less data detail than STF's 2 and 4.
- STF's 1 through 4 offer greater data detail than the 1980 STF's 1 through 4.

Subject Summary Tape Files (SSTF's)—These files are the source of the subject reports and provide greater subject-matter detail than the STF's. They present data for the United States, regions, and divisions, and, in some cases, also for States, counties, and large cities. (See figure 4.)

Public Use Microdata Sample (PUMS) Files—These computer tape files (see figure 4) contain data from samples of long-form housing-unit records (''microdata'') for large geographic areas. Each sample housing-unit record includes essentially all the 1990 census data collected about each person in a sample household and the characteristics of the housing unit. Information that could be used to identify an individual or a housing unit is not included in the file.

Microdata files enable users to prepare customized tabulations and cross-tabulations of most items on the census questionnaire. There are two PUMS files:

- A file presenting a 5-percent sample of housing units in which each household record includes codes to let the user know in what area, such as a group of counties, a single county, or a place, the household is located. Each area identified must have a population of at least 100,000 and boundaries that do not cross State lines.
- A file presenting a 1-percent sample of housing units. Its household records include codes associating them with MA's and other large areas, the boundaries of which may cross State lines. (For the 1980 census, there were two files with 1-percent samples. The 1-percent sample showing data for selected urbanized areas and other large areas will not be produced for the 1990 census.)

Other Special Computer Tape Files—Other files include the Census/ Equal Employment Opportunity (EEO) Special File and the County-to-County Migration File. (See figure 4.) The Census Bureau may prepare additional special files.

Microfiche

Block statistics are available on microfiche as they were for the 1980 census. The microfiche present, in table format, a subset of the tabulations for census blocks found in STF 1B (see figure 3). In the 1990 census, for the first time, the entire land area of the Nation and its possessions was block-numbered. This increased the number of blocks for which the Census Bureau provides data from 2.5 million in 1980 to 7 million for 1990. The cost and storage of block data of this magnitude would be prohibitive if the data were published in printed reports.

STF's 1A and 3A are available on microfiche, as well. As noted in figure 3, they provide data for a variety of geographic areas. Also, all printed reports are offered on microfiche from Customer Services soon after they are published.

Compact Disc—Read-Only Memory (CD-ROM)

For the 1990 census, the Public Law (P.L.) 94-171 file; an extract of STF 1B that presents selected statistics for blocks; and STF's 1A, 1C, 3A, 3B, and 3C are also available on CD-ROM. (One 4 3/ 4-inch CD-ROM, a type of optical or laser disc, can hold the contents of approximately 1,600 flexible diskettes, or three or four high-density computer tapes.)

Online Information Systems

The Census Bureau began CENDATA™, its online information service, in 1984. CENDATA™ is accessible through two information vendors, CompuServe and DIALOG. A number of Census Bureau reports, in whole or in part, are offered online. For the 1990 census, CENDATA™ provides up-to-date information about the availability of data products and carries selections of State, county, MA, and place data from the P.L. 94-171 tape file and STF's 1 and 3.

Custom Data Products

These products are for users who require unique tabulations that are not included in standard products; for example, information for locally defined geographic areas. Users also can order special microdata files.

The cost of preparing custom products must be paid by the users who request them. Any data that the Census Bureau provides in these products are subject to the same standards applied to other data to ensure that confidential individual information is not revealed.

User-Defined Areas Program (UDAP) Tabulations— UDAP can provide a set of predefined data tables for locally defined areas that do not correspond to standard 1990 census geographic areas. Users identify the geographic areas of interest to them by delineating boundaries around groupings of census blocks on 1990 census County

Block Maps or by electronically submitting the geographic components of their area of interest. (A contact for more information is given in the ''Sources of Assistance'' section.)

Special Tabulations—The Census Bureau can prepare special data tabulations for any specific geographic or subject-matter area. Users should rely on standard reports, tapes, microfiche, or user-defined area tabulations whenever possible, since special tabulations tend to be substantially more expensive and take time to arrange and produce. (Contacts for more information are given in the ''Sources of Assistance'' section.)

GEOGRAPHIC PRODUCTS

Maps

Census Bureau maps are necessary for virtually all uses of small-area 1990 census data. They are needed to locate the specific geographic areas for which the census provides data and to study the spatial relationship of the data for analytic purposes. The Census Bureau prepares a variety of 1990 census maps. Among the most useful are these four series:

County Block Maps—These maps show census blocks and their numbers; boundaries for statistical and governmental entities, such as census tracts and places; and physical features. The P.L. 94-171 version of these maps also shows voting district boundaries in those States that furnished them. The maps are prepared on electrostatic plotters by county (or equivalent entity) with one or more map sheets each, depending on the size and shape of the area and the density of the block pattern. An average county requires 20 map sheets. The maps may be purchased from Customer Services.

County Subdivision Outline Maps—Maps in this State-based series present the boundaries of the counties, county subdivisions, places, American Indian and Alaska Native areas (including off-reservation trust lands), tribal designated statistical areas, and tribal jurisdiction statistical areas. Electrostatic-plotter copies are available for purchase from Customer Services. Also, they appear on multiple page-size sheets in the State reports of these series: 1990 CPH-1, 1990 CPH-2, 1990 CPH-5, 1990 CP-1, 1990 CP-2, 1990 CH-1, and 1990 CH-2.

Census Tract/ Block Numbering Area (BNA) Outline Maps—Maps in this county-based series depict census tract or BNA boundaries and numbers, and the features underlying the boundaries. They also show governmental units in relation to the census tracts/ BNA's. Customer Services sells electrostatic-plotter copies, and the Superintendent of Documents sells printed copies.

Voting District Outline Maps—Maps in this county-based series depict voting district boundaries (for those counties for which States furnished boundary information) and the features underlying the boundaries. They also show governmental unit boundaries in relation to the voting districts. They are prepared on electrostatic plotters and sold by Customer Services.

Geographic Publications

The *Geographic Identification Code Scheme* report in the 1990 CPH-R series shows the 1990 census geographic area codes and Federal information processing standards (FIPS) codes, as appropriate, for States, metropolitan areas, counties, county subdivisions, places, American Indian and Alaska Native areas, and other entities, along with some descriptive information about the codes. The code scheme also is offered on computer tape.

Machine-Readable Geographic Files

All 1990 census summary tape files include 1990 census geographic area codes, FIPS codes, certain area names, land and inland water area in square kilometers, geographic coordinates for an internal point for each entity, and other geographic information.

The Census Bureau developed an automated geographic data base, known as the TIGER (Topologically Integrated Geographic Encoding and Referencing) System, to produce the geographic products for the 1990 census. TIGER provides coordinate-based digital map information for the entire United States, Puerto Rico, the U.S. Virgin Islands, and the Pacific territories over which the United States has jurisdiction.

The TIGER System has significantly improved the utility of 1990 census maps and geographic reference products. Extract files generated from the TIGER System permit users, with appropriate software, to perform such tasks as linking the statistical data in the P.L. 94-171 file or the STF's and displaying selected characteristics on maps or a video display screen at different scales and with whatever boundaries they select for any geographic area of the country. For example, a map for a particular county could show the distribution of the voting age population by city block.

The first extract of selected geographic and cartographic information intended for computer applications, such as plotting maps and building geographic information systems, is called the TIGER/ Line™ files. TIGER/ Line™ files contain attributes for the segments of each boundary and feature (for example, roads, railroads, and rivers), including 1990 census geographic codes for adjacent areas, latitude/ longitude coordinates of segment end points and the curvature of segments, the name and type of the feature, and the relevant census feature class code identifying the feature segment by category. TIGER/ Line™ files also furnish address ranges and associated ZIP

Codes for each side of street segments in major urban areas; provide the names of landmarks, such as lakes and golf courses; and include other information.

TIGER/Line™ files and other TIGER System extracts, such as TIGER/Boundary™ and TIGER/DataBase™, are released on computer tape and, in some cases, CD-ROM. For information on TIGER extract files, contact Customer Services.

REFERENCE MATERIALS

The Census Bureau issues several reference publications for data users. Some are sold by the Superintendent of Documents; others are distributed free by Customer Services. Addresses and phone numbers for the Superintendent of Documents and Customer Services are given in the following section.

- *1990 Census of Population and Housing, Guide.* This guide, in the 1990 CPH-R report series, provides detailed information about all aspects of the census and a comprehensive glossary of census terms. Sold by the Superintendent of Documents, U.S. Government Printing Office.
- *1990 Census of Population and Housing Tabulation and Publication Program.* A free report describing 1990 census products, comparing 1990 products with those of 1980, and more. Request from Customer Services.
- *Census '90 Basics.* A free booklet covering how the 1990 census data were collected and processed, the full range of data products, the maps and geographic files, and more, but with less detail than the Guide (above). Request from Customer Services.
- *Census ABC's—Applications in Business and Community.* A free booklet that highlights key information about the 1990 census and illustrates a variety of ways the data can be used. Request from Customer Services.
- *Strength in Numbers.* A free, tabloid-size booklet designed to assist people in using 1990 census data in redistricting. Among other features, it includes illustrations of maps and Public Law 94-171 counts. Request from Customer Services.
- *TIGER: The Coast-to-Coast Digital Map Data Base.* A free booklet describing the structure and uses of the Census Bureau's TIGER System. Request from Customer Services.
- *Census and You.* The Census Bureau's monthly newsletter for data users. It reports on the latest 1990 census developments, selected new publications and computer tape files, other censuses and surveys, developments in services to users, and upcoming conferences and training courses. Subscriptions are sold by the Superintendent of Documents, U.S. Government Printing Office.
- *Monthly Product Announcement.* A free monthly listing of all new Census Bureau publications; microfiche; maps; data files on tape, diskettes, or CD-ROM; and technical documentation. To subscribe, contact Customer Services.
- *Census Catalog and Guide.* A comprehensive annual description of data products, statistical programs, and services of the Census Bureau. It provides abstracts of the publications, data files, microfiche, maps, and items online. In addition, the Catalog/Guide offers such features as information about censuses and surveys and telephone contact lists of data specialists at the Census Bureau, the State Data Centers, and other data processing service centers. It is sold by the Superintendent of Documents, U.S. Government Printing Office.

Users also can get listings of new Census Bureau products, updated daily, by subscribing to the *Daily List.* This information and selected statistics are available online through CENDATA™, the Census Bureau's online information service. For more information, contact Customer Services.

SOURCES OF ASSISTANCE

U.S. Bureau of the Census

The Census Bureau's Customer Services sells most of the machine-readable data products, microfiche, and maps described earlier. (The 1990 census printed reports are sold by the Superintendent of Documents, as noted below.) Also, users may consult with specialists at the Census Bureau's Washington headquarters and its 12 regional offices. From time to time, the specialists also conduct workshops, seminars, and training courses.

Washington, DC, Contacts—To order products, for a telephone contacts list of Census Bureau specialists, and for general information: Customer Services, U.S. Bureau of the Census, Washington, DC 20233, telephone 301-763-4100 (fax number, 301-763-4794).

For User-Defined Areas Program (UDAP) information: UDAP Staff, Decennial Planning Division, U.S. Bureau of the Census, Washington, DC 20233, telephone 301-763-4282.

For special tabulation information: Population—Rosemarie Cowan, Population Division, U.S. Bureau of the Census, Washington, DC 20233, telephone 301-763-5476; Housing—William Downs, Housing and Household Economic Statistics, U.S. Bureau of the Census, Washington, DC 20233, telephone 301-763-8553.

Regional Office Contacts—

Atlanta, GA	404-347-2274
Boston, MA	617-565-7078
Charlotte, NC	704-371-6144
Chicago, IL	312-353-0980
Dallas, TX	214-767-7105
Denver, CO	303-969-7750
Detroit, MI	313-354-4654
Kansas City, KS	913-236-3711
Los Angeles, CA	818-904-6339
New York, NY	212-264-4730
Philadelphia, PA	215-597-8313
Seattle, WA	206-728-5314

Superintendent of Documents, U.S. Government Printing Office

The Superintendent of Documents handles the sale of most of the Federal Government's publications, including 1990 census reports. To order reports and for information: Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402, telephone 202-783-3238.

Other Sources of Products and Services

State Data Centers—The Census Bureau furnishes data products, training in data access and use, technical assistance, and consultation to all States, the District of Columbia, Guam, Puerto Rico, and the U.S. Virgin Islands. State Data Centers, in turn, offer publications for reference, printouts from computer tape, specially prepared reports, maps, and other products and assistance to data users. For a list of the State Data Centers, see the *Census Catalog and Guide* or contact Customer Services. The list also notes organizations in States participating in the Census Bureau's Business/Industry Data Center (BIDC) Program. The BIDC's help business people, economic development planners, and other data users obtain and use data.

National Services Program—The National Services Program (NSP) provides data-related services for nationally based nonprofit organizations that represent minorities or other segments of the population who have been historically undercounted in decennial censuses. The participants include social service, business, professional, civil rights, educational, and religious groups. Through a pilot project, the National Services Information Center (NSIC) Initiative, three of these nonprofit groups now offer their clientele reports, computer tape printouts, and other information from the Census Bureau. To learn more about the NSP and the NSIC, write to the National Services Program, Data User Services Division, Bureau of the Census, Washington, DC 20233, or call 301-763-1384.

National Clearinghouse—The National Clearinghouse for Census Data Services is a listing of private companies and other organizations that offer assistance in obtaining and using data released by the Census Bureau. For a list of participants in the National Clearinghouse, see the *Census Catalog and Guide* or contact Customer Services.

Depository Libraries—There are 1,400 libraries that receive (from the Government Printing Office) Federal publications that they think their patrons will need. Often some of these publications are Census Bureau reports. The Census Bureau provides free reports to an additional 120 census depository libraries. Also, many libraries purchase census reports and maps for their areas. The *Census Catalog and Guide* includes a list of all depository libraries.

OTHER CENSUS BUREAU RESOURCES

The Census Bureau has more to offer than just the results of the census of population and housing. Through other censuses, surveys, and estimates programs, it compiles and issues (in reports, computer tape, and other media) data on subjects as diverse as appliance sales, neighborhood conditions, and exports to other countries. Here are examples of the information published about—

- *People:* Age, race, sex, income, poverty, child care, child support, fertility, noncash benefits, education, commuting habits, pension coverage, unemployment, ancestry.
- *Business and industry:* Number of employees, total payroll, sales and receipts, products manufactured or sold.
- *Housing and construction:* Value of new construction, numbers of owners and renters, property value or rent paid, housing starts, fuels used, mortgage costs.
- *Farms:* Number, acreage, livestock, crop sales.
- *Governments:* Revenues and expenditures, taxes, employment, pension funds.
- *Foreign trade:* Exports and imports, origin and destination, units shipped.
- *Other nations:* Population, birth rates, death rates, literacy, fertility.

The other censuses, such as agriculture, retail trade, manufactures, and governments, are collected for years ending in ''2'' and ''7.'' Surveys and estimates programs generate results as often as every month.

Many of the monthly ''economic indicators'' that measure how the Nation is doing come directly or indirectly from the Census Bureau. Examples: employment and unemployment; housing starts; wholesale and retail trade; manufacturers' shipments, inventories, and orders; export and import trade; and sales of single-family homes.

The other statistical activities of the Census Bureau are described below. Data users will find more information about them and descriptions of their data products in the

annual *Census Catalog and Guide.* Also, special guides and brochures are prepared for most of them. Contact the Census Bureau's Customer Services for more information.

Current Demographic and Housing Programs

Two types of current programs complement the 10-year census: population estimates and surveys. The total population of the United States is estimated monthly; the population of States, counties, and metropolitan areas is estimated annually; and the population of places and other governmental units is estimated every 2 years. Projections of future population are made at the national and State levels.

The Census Bureau's many household surveys update population and housing characteristics at the national level and sometimes for States and metropolitan areas, as well. These surveys also obtain many characteristics not included in the 10-year census. The Current Population Survey is taken monthly; the American Housing Survey national sample is taken biennially; the American Housing Survey metropolitan sample is taken in 44 areas, 11 per year in a 4-year cycle; most other surveys are annual or less frequent.

Economic Censuses and Surveys

The economic censuses provide statistics about business establishments once every 5 years, covering years ending in ''2'' and ''7.'' The 1987 Economic Censuses include the censuses of retail trade, wholesale trade, service industries, transportation, manufactures, mineral industries, and construction industries. Also included are related programs, such as statistics on minority- and women-owned businesses, enterprise statistics, and censuses of economic activity in Puerto Rico and some of the outlying areas under U.S. jurisdiction.

Several key statistics are tabulated for all industries covered in the censuses. They are number of establishments, number of employees, payroll, and measure of output (sales or receipts, and value of shipments or of work done). Other items vary from sector to sector.

The Census Bureau also has programs that provide current statistics on such measures as total sales of particular kinds of businesses or production of particular products. These programs include monthly, quarterly, and annual surveys, the results of which appear in publication series such as *Current Business Reports* and *Current Industrial Reports.* The County Business Patterns program offers annual statistics based on data compiled primarily from administrative records.

Agriculture Census and Surveys

The agriculture census is conducted concurrently with the economic censuses. It is the only source of uniform agriculture data at the county level. It provides data on such subjects as the number and size of farms; land use and ownership; livestock, poultry, and crops; and value of products sold.

Results of three surveys—the 1988 Farm and Ranch Irrigation Survey, 1988 Census of Horticulture Specialties, and 1988 Agricultural Economics and Land Ownership Survey—are published in conjunction with the 1987 Census of Agriculture. Also, the Census Bureau regularly issues reports from a survey on cotton ginnings.

Governments Census and Surveys

The census of governments, also for years ending in ''2'' and ''7,'' covers all types of governments: Federal, State, county, municipal (place), township (county subdivision), school district, and special district. It provides data on such subjects as number of public employees, payrolls, revenue, and expenditures.

Annual and quarterly surveys cover the same principal subjects but generate data only for States and the largest local governments.

Foreign Trade Statistics

Monthly U.S. merchandise trade data compiled by the Census Bureau summarize export and import transactions and are based on the official documents filed by shippers and receivers. These figures reflect the flow of merchandise but not intangibles like services and financial commitments. The trade figures trace commodity movements out of and into the U.S. Customs jurisdiction, which includes Puerto Rico and the U.S. Virgin Islands as well as the 50 States and the District of Columbia. Data are published separately on trade between the United States and Puerto Rico, the U.S. Virgin Islands, and other U.S. possessions.

Other Statistical Activities

The Census Bureau also offers international data. It maintains an international data base which is available to the public on computer tape and is used to produce the biennial *World Population Profile* report. It prepares studies dealing with the demographic and economic characteristics of other countries and world regions.

Statistical compendia are another important data product. These publications (sometimes also offered in machine-readable form) draw data from many sources and reorganize them for convenient use. The most widely used compendia are the annual *Statistical Abstract of the United States,* the *County and City Data Book* (published every 5 years), and the *State and Metropolitan Area Data Book* (published approximately every 4 years).

Figure 1. **1990 Census Content**

100-PERCENT COMPONENT

Population	Housing
Household relationship	Number of units in structure
Sex	Number of rooms in unit
Race	Tenure—owned or rented
Age	Value of home or monthly rent
Marital status	Congregate housing (meals included in rent)
Hispanic origin	Vacancy characteristics

SAMPLE COMPONENT

Population	Housing
Social characteristics:	Year moved into residence
Education—enrollment and attainment	Number of bedrooms
Place of birth, citizenship, and year of entry into U.S.	Plumbing and kitchen facilities
Ancestry	Telephone in unit
Language spoken at home	Vehicles available
Migration (residence in 1985)	Heating fuel
Disability	Source of water and method of sewage disposal
Fertility	Year structure built
Veteran status	Condominium status
	Farm residence
Economic characteristics:	Shelter costs, including utilities
Labor force	
Occupation, industry, and class of worker	
Place of work and journey to work	
Work experience in 1989	
Income in 1989	
Year last worked	

NOTE: Questions dealing with the subjects covered in the 100-percent component were asked of all persons and housing units. Those covered by the sample component were asked of a sample of the population and housing units.

Figure 2. **1990 Census Printed Reports**

Series	Title	Report(s) issued for	Description	Geographic areas
		1990 CENSUS OF POPULATION AND HOUSING (1990 CPH)		
		100-Percent Data		
1990 CPH-1	**Summary Population and Housing Characteristics**	U.S., States, DC, Puerto Rico, and U.S. Virgin Islands	Population and housing unit counts, and summary statistics on age, sex, race, Hispanic origin, household relationship, units in structure, value and rent, number of rooms, tenure, and vacancy characteristics	Local governmental units (i.e., counties, places, and towns and townships), other county subdivisions, and American Indian and Alaska Native areas
1990 CPH-2	**Population and Housing Unit Counts**	U.S., States, DC, Puerto Rico, and U.S. Virgin Islands	Total population and housing unit counts for 1990 and previous censuses	States, counties, county subdivisions, places, State component parts of metropolitan areas (MA's) and urbanized areas (UA's), and summary geographic areas (for example, urban and rural)
		100-Percent and Sample Data		
1990 CPH-3	**Population and Housing Characteristics for Census Tracts and Block Numbering Areas**	MA's, and the nonmetropolitan balance of each State, Puerto Rico, and U.S. Virgin Islands	Statistics on 100-percent and sample population and housing subjects	In MA's: census tracts/ block numbering areas (BNA's), places of 10,000 or more inhabitants, and counties. In the remainder of each State: census tracts/ BNA's, places of 10,000 or more, and counties
1990 CPH-4	**Population and Housing Characteristics for Congressional Districts of the 103rd Congress**	States and DC	Statistics on 100-percent and sample population and housing subjects	Congressional districts (CD's) and, within CD's, counties, places of 10,000 or more inhabitants, county subdivisions of 10,000 or more inhabitants in selected States, and American Indian and Alaska Native areas
		Sample Data		
1990 CPH-5	**Summary Social, Economic, and Housing Characteristics**	U.S., States, DC, Puerto Rico, and U.S. Virgin Islands	Statistics generally on sample population and housing subjects	Local governmental units (i.e., counties, places, and towns and townships), other county subdivisions, and American Indian and Alaska Native areas
		1990 CENSUS OF POPULATION (1990 CP)		
		100-Percent Data		
1990 CP-1	**General Population Characteristics**	U.S., States, DC, Puerto Rico, and U.S. Virgin Islands	Detailed statistics on age, sex, race, Hispanic origin, marital status, and household relationship characteristics	States, counties, places of 1,000 or more inhabitants, county subdivisions of 1,000 or more inhabitants in selected States, State parts of American Indian areas, Alaska Native areas, and summary geographic areas such as urban and rural

Figure 2. **1990 Census Printed Reports**—Con.

Series	Title	Report(s) issued for	Description	Geographic areas
		1990 CENSUS OF POPULATION (1990 CP)—Con.		
		100-Percent Data—Con.		
1990 CP-1-1A	**General Population Characteristics for American Indian and Alaska Native Areas**	U.S.	Detailed statistics on age, sex, race, Hispanic origin, marital status, and household relationship characteristics	American Indian and Alaska Native areas; i.e., American Indian reservations, off-reservation trust lands, tribal jurisdiction statistical areas (Oklahoma), tribal designated statistical areas, Alaska Native village statistical areas, and Alaska Native Regional Corporations
1990 CP-1-1B	**General Population Characteristics for Metropolitan Areas**	U.S.	Detailed statistics on age, sex, race, Hispanic origin, marital status, and household relationship characteristics	Individual MA's. For MA's split by State boundaries, summaries are provided both for the parts and for the whole MA
1990 CP-1-1C	**General Population Characteristics for Urbanized Areas**	U.S.	Detailed statistics on age, sex, race, Hispanic origin, marital status, and household relationship characteristics	Individual UA's. For UA's split by State boundaries, summaries are provided both for the parts and for the whole UA
		Sample Data		
1990 CP-2	**Social and Economic Characteristics**	U.S., States, DC, Puerto Rico, and U.S. Virgin Islands	Statistics generally on sample population subjects	States (including summaries such as urban and rural), counties, places of 2,500 or more inhabitants, county subdivisions of 2,500 or more inhabitants in selected States, Alaska Native areas, and the State portion of American Indian areas
1990 CP-2-1A	**Social and Economic Characteristics for American Indian and Alaska Native Areas**	U.S.	Statistics generally on sample population subjects	American Indian and Alaska Native areas, as for CP-1-1A
1990 CP-2-1B	**Social and Economic Characteristics for Metropolitan Areas**	U.S.	Statistics generally on sample population subjects	Individual MA's, as for CP-1-1B
1990 CP-2-1C	**Social and Economic Characteristics for Urbanized Areas**	U.S.	Statistics generally on sample population subjects	Individual UA's, as for CP-1-1C
1990 CP-3	**Population Subject Reports**	Selected subjects	Approximately 30 reports on population census subjects such as migration, education, income, the older population, and racial and ethnic groups	Generally limited to the U.S., regions, and divisions; for some reports, other highly populated areas such as States, MA's, counties, and large places

Figure 2. **1990 Census Printed Reports**—Con.

Series	Title	Report(s) issued for	Description	Geographic areas
		1990 CENSUS OF HOUSING (1990 CH)		
		100-Percent Data		
1990 CH-1	**General Housing Characteristics**	U.S., States, DC, Puerto Rico, and U.S. Virgin Islands	Detailed statistics on units in structure, value and rent, number of rooms, tenure, and vacancy characteristics	States, counties, places of 1,000 or more inhabitants, county subdivisions of 1,000 or more inhabitants in selected States, State parts of American Indian areas, Alaska Native areas, and summary geographic areas such as urban and rural
1990 CH-1-1A	**General Housing Characteristics for American Indian and Alaska Native Areas**	U.S.	Detailed statistics on units in structure, value and rent, number of rooms, tenure, and vacancy characteristics	American Indian and Alaska Native areas; i.e., American Indian reservations, trust lands, tribal jurisdiction statistical areas (Oklahoma), tribal designated statistical areas, Alaska Native village statistical areas, and Alaska Native Regional Corporations
1990 CH-1-1B	**General Housing Characteristics for Metropolitan Areas**	U.S.	Detailed statistics on units in structure, value and rent, number of rooms, tenure, and vacancy characteristics	Individual MA's. For MA's split by State boundaries, summaries are provided both for the parts and for the whole MA
1990 CH-1-1C	**General Housing Characteristics for Urbanized Areas**	U.S.	Detailed statistics on units in structure, value and rent, number of rooms, tenure, and vacancy characteristics	Individual UA's. For UA's split by State boundaries, summaries are provided both for the parts and for the whole UA
		Sample Data		
1990 CH-2	**Detailed Housing Characteristics**	U.S., States, DC, Puerto Rico, and U.S. Virgin Islands	Statistics generally on sample housing subjects	States (including summaries such as urban and rural), counties, places of 2,500 or more inhabitants, county subdivisions of 2,500 or more inhabitants in selected States, Alaska Native areas, and State parts of American Indian areas
1990 CH-2-1A	**Detailed Housing Characteristics for American Indian and Alaska Native Areas**	U.S.	Statistics generally on sample housing subjects	American Indian and Alaska Native areas, as in 1990 CH-1-1A
1990 CH-2-1B	**Detailed Housing Characteristics for Metropolitan Areas**	U.S.	Statistics generally on sample housing subjects	Individual MA's, as in 1990 CH-1-1B
1990 CH-2-1C	**Detailed Housing Characteristics for Urbanized Areas**	U.S.	Statistics generally on sample housing subjects	Individual UA's, as in 1990 CH-1-1C
1990 CH-3	**Housing Subject Reports**	Selected subjects	Approximately 10 reports on housing census subjects such as structural characteristics and space utilization	Generally limited to U.S., regions, and divisions; for some reports, other highly populated areas such as States, MA's, counties, and large places

Figure 3. **1990 Census Summary Tape Files**

Summary Tape File (STF 1A, 1B, etc.) and data type (100 percent or sample)[1]		Geographic areas	Description
	A[2 3]	States, counties, county subdivisions, places, census tracts/ block numbering areas (BNA's), block groups (BG's). Also Alaska Native areas and State parts of American Indian areas	
	B[2 3]	States, counties, county subdivisions, places, census tracts/ BNA's, BG's, blocks. Also Alaska Native areas and State parts of American Indian areas	
STF 1 (100 percent)	C[3]	U.S., regions, divisions, States (including summaries such as urban and rural), counties, places of 10,000 or more inhabitants, county subdivisions of 10,000 or more inhabitants in selected States, metropolitan areas (MA's), urbanized areas (UA's), American Indian and Alaska Native areas	Over 900 cells/ items of 100-percent population and housing counts and characteristics for each geographic area
	D	Congressional districts (CD's) of the 103rd Congress by State; and within each CD: counties, places of 10,000 or more inhabitants, county subdivisions of 10,000 or more inhabitants in selected States, Alaska Native areas, and American Indian areas	
	A	In MA's: counties, places of 10,000 or more inhabitants, and census tracts/ BNA's. In the remainder of each State: counties, places of 10,000 or more inhabitants, and census tracts/ BNA's	
STF 2 (100 percent)	B	States (including summaries such as urban and rural), counties, places of 1,000 or more inhabitants, county subdivisions, State parts of American Indian areas, and Alaska Native areas	Over 2,100 cells/ items of 100-percent population and housing counts and characteristics for each geographic area. Each of the STF 2 files will include a set of tabulations for the total population and separate presentations of tabulations by race and Hispanic origin
	C	U.S., regions, divisions, States (including summaries such as urban and rural), counties, places of 10,000 or more inhabitants, county subdivisions of 10,000 or more inhabitants in selected States, all county subdivisions in New England MA's, American Indian and Alaska Native areas, MA's, UA's	
	A[2 3]	States, counties, county subdivisions, places, census tracts/ BNA's, BG's. Also Alaska Native areas and State parts of American Indian areas	
	B[3]	Five-digit ZIP Codes within each State	
STF 3 (Sample)	C[3]	U.S., regions, divisions, States, counties, places of 10,000 or more inhabitants, county subdivisions of 10,000 or more inhabitants in selected States, American Indian and Alaska Native areas, MA's, UA's	Over 3,300 cells/ items of sample population and housing characteristics for each geographic area
	D	CD's of the 103rd Congress by State; and within each CD: counties, places of 10,000 or more inhabitants, county subdivisions of 10,000 or more inhabitants in selected States	

Figure 3. **1990 Census Summary Tape Files**—Con.

Summary Tape File (STF 1A, 1B, etc.) and data type (100 percent or sample)[1]		Geographic areas	Description
	A	In MA's: counties, places of 10,000 or more inhabitants, and census tracts/ BNA's. In the remainder of each State: counties, places of 10,000 or more inhabitants, and census tracts/ BNA's	
STF 4 (Sample)	B	State (including summaries such as urban and rural), counties, places of 2,500 or more inhabitants, county subdivisions of 2,500 or more inhabitants in selected States, all county subdivisions in New England MA's, State parts of American Indian areas, and Alaska Native areas	Over 8,500 cells/ items of sample population and housing characteristics for each geographic area. Each of the STF 4 files will include a set of tabulations for the total population and separate presentations of tabulations by race and Hispanic origin.
	C	U.S., regions, divisions, States (including urban and rural and metropolitan and nonmetropolitan components), counties, places of 10,000 or more inhabitants, county subdivisions of 10,000 or more inhabitants in selected States, all county subdivisions in New England MA's, American Indian and Alaska Native areas, MA's, UA's	

[1]Similar STF's will be prepared for Puerto Rico and the U.S. Virgin Islands.
[2]Also available on microfiche. STF 1B microfiche provides only part of the data for blocks and other areas in the tape file.
[3]Also available on laser disc (CD-ROM). STF 1B CD-ROM presents the same file extract as STF 1B microfiche.

Figure 4. **Other 1990 Census Data Products**

Title	Description	Geographic areas
Subject Summary Tape Files	About 20 computer tape files used to produce the subject reports (1990 CP-3 and 1990 CH-3 series). On the average, a file is the source of two subject reports	U.S., regions, divisions, States, metropolitan areas (MA's), and large counties and places
Public Law 94-171 Data File (redistricting data)	Counts by total, race, and Hispanic origin for the total population and population 18 years old and over, and counts of housing units. Available on tape, CD-ROM, and paper listings	States, counties, county subdivisions, places, census tracts/ block numbering areas (BNA's), block groups (BG's), and blocks; voting districts where States have identified them for the Census Bureau; and American Indian and Alaska Native areas
Census/ Equal Employment Opportunity (EEO) Special File	Sample tabulations showing detailed occupations and educational attainment data by age; cross tabulated by sex, Hispanic origin, and race	Counties, MA's, places of 50,000 or more inhabitants
County-to-County Migration File	Summary statistics for all intra-state county-to-county migration streams and significant interstate county-to-county migration streams. Each record will include codes for the geographic area of destination, and selected characteristics of the persons who made up the migration stream	States, counties
Public Use Microdata Sample (PUMS) Files	Machine-readable files containing a sample of individual long-form census records showing most population and housing characteristics but with identifying information removed	
5 Percent—PUMS Areas		County groups, counties, county subdivisions, and places with 100,000 or more inhabitants
1 Percent—Metropolitan Areas (1990)		MA's and other large areas with 100,000 or more inhabitants
User-Defined Areas Tabulations	A set of standard tabulations provided on printouts, tapes, or other products with maps and narrative (if requested)	User-defined areas created by aggregating census blocks
Special Tabulations	User-defined tabulations for specified geographic areas provided on printouts, tapes, or other products	User-defined areas or standard areas