PROCEDURAL HISTORY OF THE 1940 CENSUS OF POPULATION AND HOUSINC

# Prepared at <br> The Center for Demography and Ecology University of Wisconsin <br> Madison, Wisconsin 53706 

by
Robert Jenkins 1983

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May 2, 1983

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Dr. Morris Hansen
Senior Vice President
Westat
1650 Research Blva.
Rockville, Maryland 20850
Dear Dr. Hansen:
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Enclosed is a copy of the Procedural History of the 1940 Census. The history will be distributed to persons purchasing the 1940 Public Use Sample. We are also planning to have the history published as a separate volume by a private publisher.

Again we would like to thank you for your careful review of the draft of the history. Your comments were extremely important in filling the gaps of the official documents which were available to us.

Sincerely,


Richard Cohn
for the 1940/1950 Project Staff
Page
Foreword. ..... iv
Chapter One - Introduction. ..... 1
Evolution of the Bureau of the Census .....  1
The Census Bureau in the 1930's ..... 3
Chapter Two - Planning for the 1940 Census .....  9
The Unemployment Census of 1937. .....  9
Data Processing Planning ..... 10
Geographical Planning. ..... 11
Preparation of Schedules and Instructions. ..... 14
The Inclusion of Employment and Income Questions ..... 15
Sampling Design. ..... 19
The 1939 Special Census of St. Joseph and
Marshall Counties, Indiana ..... 22
The Inclusion of a Census of Housing ..... 23
Chapter Three - Field Enumeration ..... 24
The Structure of the Field Organization ..... 24
Area Offices ..... 25
District Offices ..... 26
General Preparations ..... 27
Examination of Enumeration Districts ..... 27
Receipt of Schedules and Supplies ..... 28
Selection and Training of Enumerators
and Squad Leaders ..... 28
Public Relations ..... 30
The Enumeration Process ..... 31
General Instructions ..... 31
Filling Out the Population Schedules ..... 34
The Housing Schedules. ..... 38
Enumeration Supervision. ..... 39
Progress Reporting ..... 41
Preliminary Population Counts:
Announcements and Vouchers ..... 42
Return of Schedules and Final Reporting. ..... 43
Special Situations ..... 44
Chapter Four - Processing and Tabulation ..... 46
Initial Activities. ..... 46
Receipt and Examination of Population Schedules. ..... 46
Matching of Population and Housing Schedules ..... 48
Population and Housing Hand Count. ..... 52
Transcription of the Preliminary Sample Data ..... 54
Separation of Population and Housing Schedules and Other Materials. ..... 58
Control Room Operations. ..... 59
Coding Operations ..... 61
General Population Coding ..... 62
Allocation of Unknown Ages ..... 67
Verification of General Population Coding. ..... 73
Occupation, Industry, and Class of Worker
Coding and Verification. ..... 75
Coding and Verification of the Housing Census. ..... 78
Tabulation. ..... 79
Card Punching and the Sample Verification of Punch Cards ..... 80
Machine Processing ..... 82
The Effect of World War II on the 1940 Census ..... 85
Chapter Five - Publications from the 1940 Census ..... 87
Preliminary Releases ..... 91
Final Reports. ..... 92
Territories and Possessions ..... 94
Chapter Six - Evaluation of the 1940 Census ..... 96
Analysis of Employment Status Questions. ..... 96
Analysis of Class of Worker Question ..... 98
Analysis of Occupation and Industry Questions. ..... 98
Analysis of Incorse Questions ..... 99
Analysis of Other Labor Force Questions ..... 101
Analysis of General Population Questions ..... 102
Underenumeration ..... 103
References. ..... 105
Appendices
Appendix 1 - 1940 Census Population and Housing Schedules ..... 111
Appendix 11 - Original Instructions and Addenda for General Population Coding (Operation 7) ..... 119
Appendix 111 - Age Allocation Tables
Used in 1940 Census ..... 155
Appendix IV - Instructions for Coding Occupation, Industry, and Class of Worker (Operation 9) ..... 161
Appendix $V$ - Description of Punch Cards (A-S)
Used in 1940 Census of Population and Housing ..... 169
Appendix VI - Ceneral Progress Report of the 1940
Population and Housing Census by Major Process. . . . . . . 191
Index . . . . . . . . . . . . . . . . . . . . . . . . . 197

Robert Jenkins is the principal author of the 1940 Census Procedural History. Richard Cohn, Lori Hayward, Ann Kremers, and Barbara Weston of the Center for Demography and Ecology assisted in the preparation of the history. Frederick Bohme, Chief of the History Staff at the U.S. Bureau of the Census, provided important technical assistance in the collection of 1940 census documents and in the review of the manuscript. The history was greatly improved by the memories and scholarship of Margo Conk, A. Ross Eckler, Morris Hansen, Henry Shryock, and Conrad Taeuber who served as reviewers.

The 1940 Census Procedural History was written as part of a project to create Public Use Sample files from the 1940 and 1950 Population Censuses. This material is based upon work supported by the National Science Foundation under Grant SES-7704135. Halliman Winsborough, Karl Taeuber and Robert Hauser were the Principal lnvestigators of the project. Decisions pertaining to the mode of selecting, recording, and presenting data and accompanying documentation were made by the Principal Investigators in consultation with a board of scientific advisors and the U.S. Bureau of the Census, under a general plan approved by the National Science Foundation. Specific technical judgments as well as any opinions, findings, or conclusions expressed on the basis of those judgments are the sole responsibility of the Principal Investigators and not of the Bureau of the Census or the National Science Foundation.

## Chapter One

## INTRODUCTION

Article 1, Section 2, of the United States Constitution directs that there be decennial censuses of the population for the purpose of determining the apportionment of representatives and direct taxes. The first census taken under this provision occurred in 1790, and subsequent censuses of the population have been taken every ten years.

The inquiries in the first census included little beyond the Constitutional provisions. The information provided by this enumeration included the names of the heads of families and the numbers of persons in five basic categories: free white males, 16 and over; free white males under 16; free white females; all other free persons; and slaves. With the evolution of the census both the nature and detail of the inquiries have expanded.

In 1800 , the age classification was expanded and the location of family residence was obtained. The 1810 census saw the addition of inquiries on manufacturing. Information about foreigners and certain broad occupational groups was added in 1820. The 1840 census saw the addition of questions on school attendance and illiteracy, and a separate agriculture schedule. Throughout the remainder of the century the inquiries on the population schedule continued to expand and new schedules were introduced, until by 1880 and 1890 the volume had reached unmanageable proportions. The censuses from 1900 through 1930 were fairly modest, but with the advent of sampling in 1940 it was possible again to broaden the scope of inquiries and include a sizeable inventory of characteristics of the people and their homes.

The 1940 Census of Population, the Sixteenth Decennial Census, was taken under the legislative authority of the Census Act of June 18, 1929. This Act removed the determination of specific inquiries from Congressional control, giving control instead to the Director of the Census subject to the approval of the Secretary of Commerce. The 1929 Act also required persons enumerated to provide complete and accurate information under penalty of law. Additionally, Census employees were discouraged from making unauthorized disclosures of information through the provision of substantial penalties. The 1940 census was also covered by an Act approved on August 11, 1939, that provided for a census of housing to collect information on dwelling units.[1]

Evolution of the Bureau of the Census
The organization responsible for taking the census changed considerably between 1790 and 1940. Federal marshals acted as enumerators for the 1790 census. The marshals had the authority to carry out the enumeration in their own way and
[1] This information is based on U.S. Department of Commerce, Bureau of the Census "Manual of Census Bureau Activities." This document has no author or date, but was obtained from the library of the Census History Staff; see also, A. Ross Eckler, The Bureau of the Census (New York: Praeger, 1972), pp. 4-13, 42-48, 230-239.
they sent the returns directly to the President. Until 1900 the census was conducted by a temporary organization created to carry out the provisions of the corresponding census act. From 1800 through 1840 this temporary organization was under the direction of the Secretary of State. This responsibility was $t r a n s f e r r e d$ from the Secretary of State to the Secretary of the newly created Department of Interior for the 1850 Census. For the 1880 Census, a temporary census office was created in the Department of Interior and, for the first time, a Superintendent of the Census (later renamed Director of the Census) was specifically appointed by the President. This office was disbanded after each census and forced to reassemble prior to the beginning of enumeration for the following census. It was not until the Permanent Census Act was adopted in March, 1902, that a permanent census organization was created.

The permanent Bureau of the Census that had been created in 1902 was transferred from the Department of the Interior to the newly created Department of Commerce and Labor in 1903. The Secretary of this new department was given legislative authority to consolidate and reorganize govemmental statistical work in the Department. The Director of the Census, Simon N. D. North, was a proponent of consolidation, presumably under the Bureau of the Census. However, pressures from the heads of bureaus involved in the collection of statistical information combined with jurisdictional disputes between the Department and the Bureau to prevent the consolidation of statistical work.

Although Director North failed in his attempt to get federal statistical programs consolidated into the Bureau, he did succeed in one endeavor which left a substantial mark on the Bureau. North considered the Bureau's annual rental contracts with the Tabulating Machine Company to be too expensive. Herman Hollerith, the inventor of the tabulating machine first used in the 1890 census, controlled this company. North first attempted to renegotiate the yearly contract with Tabulating Machine. When those negotiations proved fruitless, North received, from Congress, an appropriation for 1905-06 of $\$ 40,000$ for experimental work in developing tabulating machinery. With this appropriation, the Census Machine Shop was established under the supervision of the Chief of the Bureau of Standards and employed former Hollerith employees. In 1907, the Census Machine Shop moved into quarters in the Census Building. The Bureau did later rent machines from Tabulating Machine, which became International Business Machines (IBM) in 1924. However, the Bureau continued to use its in-house equipment produced by the Census Machine Shop (renamed the Mechanical Laboratory) until the advent of computers.[2]

There were continued pressures to consolidate federal statistics within the Census Bureau. However, consolidation was further hampered by the division of the Department of Commerce and Labor into separate departments in 1913. Despite pressures for the creation of a central statisitical agency from the American
[2] U.S. Department of Commerce, Bureau of the Census, The Development of Punch Card Tabulation in the Bureau of the Census, 1890-1940, prepared by Leon E. Truesdell (Washington, D.C.: Covernment Printing Office, 1965), pp. 119-120, 139-142; see also, U.S. Department of Commerce, Office of Federal Statistical Policy and Standards, Revolution in Government Statistics, 1926-1976, prepared by loseph W. Duncan and William C. Shelton (Washington, D.C.: Government Printing Office, 1978), p. 118.

Statistical Association and the Federal Bureau of Efficiency's 1922 report, the collection of federal statistical information remained decentralized.[3]

From 1921-1929, Herbert Hoover was Secretary of Commerce and, as such, was the Cabinet member responsible for the Bureau of the Census. A member of the American Statistical Association and the International Statistical Institute, Hoover viewed the Census Bureau as the central statistical agency of the federal government. However, he did not press for the consolidation of federal statistical programs at the Bureau. Instead, Hoover was more interested in developing cooperative relations between the Department and the business community. He encouraged the systematization of business and economic statistics and their orientation toward use by business. Among other activities, Hoover directed the Census Bureau to compile the various series of business data and publish them as the monthly Survey of Current Business. [4]

The Census Bureau in the $1930^{\prime}$ s
Hoover was elected President in 1928 and took office in March 1929. In the fall of that year, a business downturn began that evolved into the Great Depression. The resulting dislocations to the national economy and the federal government had an effect on the Census Bureau. Despite Hoover's view of the role of the Census Bureau as the statistical agency of the federal government, the Bureau was not exempt from the Economy Act of 1932. This act called for substantial reductions in staff in order to balance the federal budget. The Census Bureau was forced to reduce its staff drastically after completion of the 1930 census. 'In 1933, the Bureau had only three Ph.D.'s and only one professional man under forty-five years of age. ${ }^{\text {© [5] }}$

Franklin Roosevelt defeated Hoover in the 1932 election. Within months after taking office in March 1933 he had signed major legislation aimed at economic recovery and reform. This legislation established new programs in many fields, including industry, agriculture, welfare, securities and exchange, banking, and home mortgages. Corresponding to this expansion of government there developed a need for statistical information to aid in the administration of the recovery program.

Roosevelt's Secretary of Labor, Francis Perkins, requested that Stuart A. Rice, President of the American Statistical Association (ASA), appoint an Advisory Committee to the Secretary of Labor. With this Committee as a starting point, later talks between Rice and Meredith Givens, of the Social Science Research Council (SSRC), expanded to the Cabinet level, including the Secretaries of Agriculture and Interior and the Assistant Secretary of Commerce. These talks
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[3] Eckler, Bureau of the Census, pp. 15-17; Revolution in Covernment Statistics, p. 11.
[4] Revolution in Covernment Statistics, pp. 10-11; see also, Ann Herbert Scott, Census, U.S.A.: Fact Finding for the American People, 1790-1970 (New York: Seabury Press, 1968), pp. 40-41.
[5] Eckler, Bureau of the Census, p. 19; see also, Revolution in Government Statistics, p. 25.
coordination. The CSB was to remain an advisory board rather than being significantly involved in direct research. [9]

In addition to its concern with the CSB, COCSIS was actively involved in consultation on statistical questions. In January 1934, the Director of the Census requested that COCSIS survey the work of the Bureau in .the fields of manufactures, agriculture and population. COCSIS and staff members from the CSB cooperated in the study and the results of the inquiry were placed at the disposal of the CSB.[10]

One of the first tasks of COCSIS was the examination of the Bureau's tabulating facilities. Many of the new projects initiated by the Civil Works Administration and other agencies required mechanical tabulating, and the Committee sought to avoid duplication of facilities. As a result of the COCSIS study, arrangements were made for the Bureau's Division of Special Tabulations to provide the services needed by other agencies.

Since the next decennial census was still some time in the future, the study of the population census, was aimed at broad issues of administration and policy rather than at the details of the decennial census operations. COCSIS began by sending letters to about thirty prominent users of the population data. COCSIS asked for candid and confidential criticisms of the population census and suggestions for improvements. On the basis of the replies, a memorandum making broad suggestions was prepared for appraisal by the Bureau and the CSB.

Recommendations with respect to the population schedule were both broad and specific. It was suggested that questions need not be asked (or tabulations made) simply because they had been asked (or made) in recent enumerations. Similarly, it was recommended that not every question had to be asked of the entire nation, and that tabulations of universally asked questions did not have to be made for the entire country. Specific questions, such as those on veterans, radio ounership, illiteracy, school attendance, citizenship, blindness, and deafness were recommended for discontinuation. Questions on mobility, place of employment, children ever born, length of separation of married couples, religious affiliations, and educational attainment were recommended for inclusion. [11]

Several suggestions were made with regard to the tabulation program. These included extension of tabulations by census tracts in the larger cities and extensions of tabulations of occupations, families, and vacant dwellings. Recommendations for field operations included improving the training and examination of supervisors and enumerators, making more extensive use of squad leaders, conducting sample check-ups in the field, giving more definite instructions to supervisors on checking the completeness of enumeration, and encouraging the development of bcal groups interested in accurate enumeration. The memorandurn on the population census also suggested that the Population Division of the Bureau consider one of its major intercensal tasks to be the
[9] COCSIS, Covernment Statistics, pp. 3-13.
[10] COCSIS, Covernment Statistics, pp. 80-81.
[11] COCSIS, Government Statistics, p. 82.
resulted in a decision, in June 1933, to establish the Committee on Covernment Statistics and Information Services (COCSIS), under the joint sponsorship of the ASA and the SSRC.[6]

COCSIS was created to assist in the improvement and expansion of federal statistics. This mission was to be accomplished by providing statistical advisory services to the Secretaries of Agriculture, Commerce, Interior, and Labor. As a consulting committee, COGSIS handled only those cases brought before it by a particular agency. The Committee or its staff studied the problem at the agency involved and advised the person responsible at the agency of the recommended changes. Subsequently, the Committee specialist wrote a memorandum that was submitted to the agency and COCSIS. [7]

One of the leading objectives of COSCIS was the "firm establishment of a central planning and coordinating statistical agency within the Federal Covernment. "[8] COCSIS saw that the recovery program could be made the occasion of reorganization and coordination of federal statistical services. In a report of July 1933, COCSIS recommended the establishment of a central statistical board. Later in the same month, President Roosevelt created the Central Statistical Board (CSB) by Executive Order. COCSIS provided the initial staffing for the CSB. The legal authority for the CSB provided by the Executive Order limited its activities to the recovery program. However, Congress acted in 1935 to establish the CSB for a 5 -year period and in 1939 it was incorporated into the Bureau of the Budget.

Although the creation of CSB brought about central coordination of federal statistics for the first time, the recommendations of the final report of COCSIS urged that the diversity and decentralization of statistical programs and agencies within the federal govemment be maintained. The report emphasized that the existing organization of statistical programs had 'advantages of a close relation to practical needs." Therefore, COCSIS sought to maintain a "delicate balance between central planning and decentralized responsibility." Within this perspective, COCSIS saw the central objective of the CSB as planning and
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[6] See Revolution in Covernment Statistics, pp. 26-31.
[7] Financed by a grant from the Rockefeller Foundation to the SSRC, COCSIS operated from June 1933 until December 1934, in space provided in the Department of Commerce building. COCSIS worked closely with the Advisory Committee to the Secretary of Labor. The combined staff of these committees numbered 57 people, more than 25 of whom later took positions within the agencies under review. The Census Bureau was one of the agencies which benefited from this infusion of new personnel. Rice, who was Acting Chair of COCSIS in the summer of 1933, served as Assistant Director of the Bureau from 1933 to 1935, and Calvert L. Dedrick, a former Research Fellow at SSRC and a COCSIS staff member, became the Bureau's Assistant Chief Statistician in 1937. See, Committee on Covernment Statistics and Information Services, Covernment Statistics (New York: Social Science Research Council, 1937), pp. 129-131.
[8] Meredith B. Givens, An Experiment in Advisory Service: The Committee on Government Statistics and Information Services,: Journal of the American Statistical Association 29(December 1934):396.
implementation of sampling studies that would check outside sources to gauge the completeness of enumeration. It was also suggested that the census of population be taken every five years.

Another important memorandum was produced on the intercensal work of the Population Division. This memorandurn recommended reducing the amount of time spent by the Division staff during the intercensal period on producing institutional reports and on miscellaneous routines. Suggestions were made as to what were considered to be essential functions to which the extra staff time could be devoted. These suggestions included the completion of a guide to unpublished census tabulations; the development of a sample-based, annual reporting system on population movements; analysis of Census techniques and tests of validity of the decennial enumerations; and special tabulations for research in the population field.

In addition, the COCSIS report noted that detailed personnel requirements in the future depended upon the suggested tasks that were instituted. it did, however, make a point of noting that while there existed invaluable experience among the staff that was then employed, the fact that many on the staff were near retirement age provided "an inviting opportunity for building for the future by drawing in a number of capable young men with graduate training in social science and statistics, who can be systematically prepared for posts of leadership in the Division. ${ }^{\circ}$ [12]

With Stuart A. Rice as Assistant Director of the Bureau, the personnel recommendations of the COCSIS memorandum were implemented. He selected a nucleus of academically trained statisticians. Rice was responsible for Dedrick's appointment as Assistant Chief Statitistician. In turn, Dedrick was responsible for starting Morris H. Hansen in sampling. While the formation of the nucleus of statisticians was not rapid, by 1938 the professional staff of the Bureau included 42 social scientists.[13]

At the time preparations for the 1940 census were beginning, the Bureau of the Census was a large organization consisting of many functional divisions: Agriculture; Business Census; Cotton and Oils; Current Business Statistics; Field; Geography; Machine Tabulation; Manufactures; Personnel; Population; Publications, Ceneral Information, Records, and Religious Statistics; Statistical Research; Statistics of States and Cities; Territorial, Insular, and Foreign Statistics; and Vital Statistics.

At the head of the Bureau organization were the offices of Director, Assistant Director, and Assistant to the Director. The Director of the Census was responsible to the Secretary of Commerce for the administration of the Bureau. William Lane Austin was the Director from 1933 to 1941. James C. Capt served as Director from 1941 to 1949. The Assistant Director served as administrative and technical advisor for those divisions involving economic statistics, as the Bureau's liaison for other governmental and private organizations, and as the
[12] COCSIS, Covemment Statistics, p. 93.
[13] Eckler, Bureau of the Census, p. 19; Revolution in Government Statistics, p. 44.
person in charge in the absence of the Director. The Assistant to the Director was responsible for administrative and technical advice for those divisions that embraced the field of social statistics. In addition, there was an Office of the Chief Clerk, responsible for the Bureau's fiscal operations (accounting, payroll, purchasing): for equipment, space, and maintenance; for the mechanical laboratory; and for printing preparations.

Of those Bureau divisions involved in planning and carrying out the 1940 census, the activities of the Personnel Division are probably the most obvious. In addition to handling appointments, promotions, and separations, Personnel was responsible for administering civil service and departmental regulations and public laws pertaining to the Bureau and its employees. Statistical Research, a Division established in August 1933, was formed by the restructuring of the Division of Revision and Results. The Statistical Research Division served as the Bureau's representative to the CSB, prepared or assisted in the development of official reports, memoranda, and letters for the Director's office, and prepared Census Bureau legislation-activities previously handled by the Chief Statistician and his staff. The Statistical Research Division was also involved in the preparation of reports, articles and monographs that analyzed census statistics and data, census methods, and technical problems. This division was responsible for research and coordination in devising new schedules, instructions, and methods of editing, tabulating, and checking data.

The Division of Machine Tabulation was responsible for performing the tabulations of all census inquiries. It maintained an inventory of unpunched cards and had custody of all punched cards. Although functionally separate from the mechanical laboratory, which was under the administration of the Office of Chief Clerk, this division worked closely with the laboratory in the development of mechanical tabulating equipment. The Machine Tabulation Division also participated in design of schedules and punch cards and the development of tabulation programs. In addition to tabulating operations within the Bureau, this division performed tabulations for other bureaus of the Department of Commerce and for outside agencies and organizations.

The Division of Ceography also played an important role in planning and carrying out the 1940 census. Its activities included establishing enumeration districts, preparing all civil and statistical area records for coordination and presentation of census statistics, compiling all graphic materials for Bureau publications and exhibits, and conducting research in geography, cartography, and graphics. These activities are described in greater detail in Chapter Two.

The Field Division of the Bureau directed, coordinated, and supervised all censuses and special surveys conducted by the various divisions within the Bureau. The Field Division was created in December 1922, to help realize greater economies and more efficient procedures in the field phase of Bureau operations. Prior to that time each functional division had its own field operations. The Field Division participated in planning inquiries, cost estimates, and the field program. it was also responsible for the administration of canvasses--including responsibilities for the receiving and shipping of schedules and forms, travel authorizations, field personnel and payrolls, and equipment. These activities are described in greater detail in Chapter Three.

Robert Jenkins is the principal author of the Procedural History of the 1940 Census. Richard Cohn, Lori Hayward, Ann Kremers, and Barbara Weston of the Center for Demography and Ecology assisted in the preparation of the history. Frederick Bohme, Chief of the History Staff at the U.S. Bureau of the Census, provided important technical assistance in the collection of 1940 census documents and in the review of the manuscript. The history was greatly improved by the memories and scholarship of Margo Conk, A. Ross Eckler, Morris Hansen, Henry Shryock, and Conrad Taeuber who served as reviewers.

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## INTRODUCTION

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[4] Revolution in Covernment Statistics, pp. 10-11; see also, Ann Herbert Scott, Census, U.S.A.: Fact Finding for the American People, 1790-1970 (New York: Seabury Press, 1968), pp. 40-41.
[5] Eckler, Bureau of the Census, p. 19; see also, Revolution in Government Statistics, p. 25.
resulted in a decision, in June 1933, to establish the Committee on Covernment Statistics and Information Services (COCSIS), under the joint sponsorship of the ASA and the SSRC.[6]

COCSIS was created to assist in the improvement and expansion of federal statistics. This mission was to be accomplished by providing statistical advisory services to the Secretaries of Agriculture, Commerce, Interior, and Labor. As a consulting committee, COCSIS handled only those cases brought before it by a particular agency. The Committee or its staff studied the problem at the agency involved and advised the person responsible at the agency of the recommended changes. Subsequently, the Committee specialist wrote a memorandum that was submitted to the agency and COCSIS.[7]

One of the leading objectives of COSCIS was the 'firm establishment of a central planning and coordinating statistical agency within the Federal Covermment. ${ }^{\circ}$ [8] COCSIS saw that the recovery program could be made the occasion of reorganization and coordination of federal statistical services. In a report of July 1933, COCSIS recommended the establishment of a central statistical board. Later in the same month, President Roosevelt created the Central Statistical Board (CSB) by Executive Order. COCSIS provided the initial staffing for the CSB. The legal authority for the CSB provided by the Executive Order limited its activities to the recovery program. However, Congress acted in 1935 to establish the CSB for a 5 -year period and in 1939 it was incorporated into the Bureau of the Budget.

Although the creation of CSB brought about central coordination of federal statistics for the first time, the recommendations of the final report of COCSIS urged that the diversity and decentralization of statistical programs and agencies within the federal govemment be maintained. The report emphasized that the existing organization of statistical programs had 'advantages of a close relation to practical needs." Therefore, COCSIS sought to maintain a "delicate balance between central planning and decentralized responsibility.' Within this perspective, COCSIS saw the central objective of the CSB as planning and
[6] See Revolution in Government Statistics, pp. 26-31.
[7] Financed by a grant from the Rockefeller Foundation to the SSRC, COCSIS operated from June 1933 until December 1934, in space provided in the Department of Commerce building. COCSIS worked closely with the Advisory Committee to the Secretary of Labor. The combined staff of these committees numbered 57 people, more than 25 of whom later took positions within the agencies under review. The Census Bureau was one of the agencies which benefited from this infusion of new personnel. Rice, who was Acting Chair of COCSIS in the summer of 1933, served as Assistant Director of the Bureau from 1933 to 1935, and Calvert L. Dedrick, a former Research Fellow at SSRC and a COCSIS staff member, became the Bureau's Assistant Chief Statistician in 1937. See, Committee on Covernment Statistics and Information Services, Government Statistics (New York: Social Science Research Council, 1937), pp. 129-131.
[8] Meredith B. Civens, 'An Experiment in Advisory Service: The Committee on Government Statistics and Information Services, ' Journal of the American Statistical Association 29(December 1934):396.
coordination. The CSB was to remain an advisory board rather than being significantly involved in direct research. [9]

In addition to its concern with the CSB, COCSIS was actively involved in consultation on statistical questions. In January 1934, the Director of the Census requested that COCSIS survey the work of the Bureau in the fields of manufactures, agriculture and population. COCSIS and staff members from the CSB cooperated in the study and the results of the inquiry were placed at the disposal of the CSB.[10]

One of the first tasks of COCSIS was the examination of the Bureau's tabulating facilities. Many of the new projects initiated by the Civil Works Administration and other agencies required mechanical tabulating, and the Committee sought to avoid duplication of facilities. As a result of the COCSIS study, arrangements were made for the Bureau's Division of Special Tabulations to provide the services needed by other agencies.

Since the next decennial census was still some time in the future, the study of the population census was aimed at broad issues of administration and policy rather than at the details of the decennial census operations. COCSIS began by sending letters to about thirty prominent users of the population data. COCSIS asked for candid and confidential criticisms of the population census and suggestions for improvements. On the basis of the replies, a memorandum making broad suggestions was prepared for appraisal by the Bureau and the CSB.

Recommendations with respect to the population schedule were both broad and specific. It was suggested that questions need not be asked (or tabulations made) simply because they had been asked (or made) in recent enumerations. Similarly, it was recommended that not every question had to be asked of the entire nation, and that tabulations of universally asked questions did not have to be made for the entire country. Specific questions, such as those on veterans, radio ownership, illiteracy, school attendance, citizenship, blindness, and deafness were recormended for discontinuation. Questions on mobility, place of employment, children ever born, length of separation of married couples, religious affiliations, and educational attainment were recommended for inclusion.[11]

Several suggestions were made with regard to the tabulation program. These included extension of tabulations by census tracts in the larger cities and extensions of tabulations of occupations, families, and vacant dwellings. Recommendations for field operations included improving the training and examination of supervisors and enumerators, making more extensive use of squad leaders, conducting sample check-ups in the field, giving more definite instructions to supervisors on checking the completeness of enumeration, and encouraging the development of bcal groups interested in accurate enumeration. The memorandum on the population census also suggested that the Population Division of the Bureau consider one of its major intercensal tasks to be the
[9] COGSIS, Covernment Statistics, pp. 3-13.
[10] COCSIS, Covernment Statistics, pp. 80-81.
[11] COCSIS, Government Statistics, p. 82.
implementation of sampling studies that would check outside sources to gauge the completeness of enumeration. It was also suggested that the census of population be taken every five years.

Another important memorandum was produced on the intercensal work of the Population Division. This memorandum recommended reducing the amount of time spent by the Division staff during the intercensal period on producing institutional reports and on miscellaneous routines. Suggestions were made as to what were considered to be essential functions to which the extra staff time could be devoted. These suggestions included the completion of a guide to unpublished census tabulations; the development of a sample-based, annual reporting system on population movernents; analysis of Census techniques and tests of validity of the decennial enumerations; and special tabulations for research in the population field.

In addition, the COCSIS report noted that detailed personnel requirements in the future depended upon the suggested tasks that were instituted. It did, however, make a point of noting that while there existed invaluable experience among the staff that was then employed, the fact that many on the staff were near retirement age provided 'an inviting opportunity for building for the future by drawing in a number of capable young men with graduate training in social science and statistics, who can be systematically prepared for posts of leadership in the Division.' [12]

With Stuart A. Rice as Assistant Director of the Bureau, the personnel recommendations of the COCSIS memorandum were implemented. He selected a nucleus of academically trained statisticians. Rice was responsible for Dedrick's appointment as Assistant Chief Statitistician. In turn, Dedrick was responsible for starting Morris $H$. Hansen in sampling. While the formation of the nucleus of statisticians was not rapid, by 1938 the professional staff of the Bureau included 42 social scientists.[13]

At the time preparations for the 1940 census were beginning, the Bureau of the Census was a large organization consisting of many functional divisions: Agriculture; Business Census; Cotton and Oils; Current Business Statistics; Field; Geography; Machine Tabulation; Manufactures; Personnel; Population; Publications, Ceneral Information, Records, and Religious Statistics; Statistical Research; Statistics of States and Cities; Territorial, Insular, and Foreign Statistics; and Vital Statistics.

At the head of the Bureau organization were the offices of Director, Assistant Director, and Assistant to the Director. The Director of the Census was responsible to the Secretary of Commerce for the administration of the Bureau. William Lane Austin was the Director from 1933 to 1941. James C. Capt served as Director from 1941 to 1949. The Assistant Director served as administrative and technical advisor for those divisions involving economic statistics, as the Bureau's liaison for other governmental and private organizations, and as the
[12] COCSIS, Government Statistics, p. 93.
[13] Eckler, Bureau of the Census, p. 19; Revolution in Government Statistics, p. 44.
person in charge in the absence of the Director. The Assistant to the Director was responsible for administrative and technical advice for those divisions that embraced the field of social statistics. In addition, there was an Office of the Chief Clerk, responsible for the Bureau's fiscal operations (accounting, payroll, purchasing); for equipment, space, and maintenance; for the mechanical laboratory; and for printing preparations.

Of those Bureau divisions involved in planning and carrying out the 1940 census, the activities of the Personnel Division are probably the most obvious. In addition to handling appointments, promotions, and separations, Personnel was responsible for administering civil service and departmental regulations and public laws pertaining to the Bureau and its employees. Statistical Research, a Division established in August 1933, was formed by the restructuring of the Division of Revision and Results. The Statistical Research Division served as the Bureau's representative to the CSB, prepared or assisted in the development of official reports, memoranda, and letters for the Director's office, and prepared Census Bureau legislation--activities previously handled by the Chief Statistician and his staff. The Statistical Research Division was also involved in the preparation of reports, articles and monographs that analyzed census statistics and data, census methods, and technicial problems. This division was responsible for research and coordination in devising new schedules, instructions, and methods of editing, tabulating, and checking data.

The Division of Machine Tabulation was responsible for performing the tabulations of all census inquiries. It maintained an inventory of unpunched cards and had custody of all punched cards. Although functionally separate from the mechanical laboratory, which was under the administration of the Office of Chief Clerk, this division worked closely with the laboratory in the development of mechanical tabulating equipment. The Machine Tabulation Division also participated in design of schedules and punch cards and the development of tabulation programs. In addition to tabulating operations within the Bureau, this division performed tabulations for other bureaus of the Department of Commerce and for outside agencies and organizations.

The Division of Ceography also played an important role in planning and carrying out the 1940 census. Its activities included establishing enumeration districts, preparing all civil and statistical area records for coordination and presentation of census statistics, compiling all graphic materials for Bureau publications and exhibits, and conducting research in geography, cartography, and graphics. These activities are described in greater detail in Chapter Two.

The Field Division of the Bureau directed, coordinated, and supervised all censuses and special surveys conducted by the various divisions within the Bureau. The Field Division was created in December 1922, to help realize greater economies and more efficient procedures in the field phase of Bureau operations. Prior to that time each functional division had its own field operations. The Field Division participated in planning inquiries, cost estimates, and the field program. It was also responsible for the administration of canvasses--including responsibilities for the receiving and shipping of schedules and forms, travel authorizations, field personnel and payrolls, and equipment. These activities are described in greater detail in Chapter Three.

The Population Division was responsible for compiling the decennial population census and tabulating its returns; for collecting annual and decennial statistics on crime, delinquency, and prisoners; for making intercensal and post-censal population estimates; and for making special studies and reports. This large division was organized functionally into a number of sections. Some of these sections, such as correspondence, population estimates, crime statistics, and census of institutions were fairly permanent. Other sections, which were set up for the decennial census, were only partly active or were entirely inactive during intercensal periods. For the 1940 Census of Population, these latter subdivisions were quite extensive and included subdivisions for various types of census inquiries and for the various operations in the processing of returns. Greater detail on the role of the Population Division in the 1940 census is presented in Chapter Two and Chapter Four.

## Chapter Two

PLANNING FOR THE 1940 CENSUS

Preparations for the Sixteenth Decennial Census began in 1936, with an analysis of legislative revisions necessary for the proper conduct of the census.[1] The Bureau did not undertake extensive plans or large-scale preparatory work until it had received special appropriations and legislative authorization. It made its request for preliminary funds for the 1940 census during the next Congressional session.

To aid the Census Bureau in its work, the American Statistical Association (ASA) had appointed the members of a public Advisory Committee to the Bureau. This committee was charged with the coordination of the work of the special advisory committees that were established on specific topics. Members of the ASA committee during the preparations for the Sixteenth Decennial Census were Robert E. Chaddock, Columbia University, chairman; Murray R. Benedict, College of Agriculture, University of Califormia-Berkeley; Paul T. Cherington, New York City; Frederick J. Dewhurst, 20th Century Fund, New York City; William F. Ogburn, University of Chicago; and Willard C. Thorp, Dun and Bradstreet, Inc., New York City.[2]

The Unemployment Census of 1937
In 1937, Congress approved a national unemployment census. This census provided valuable experience which the Bureau was able to use in planning the decennial population census of 1940. Despite statisticians' advice to the contrary, Congress had sought the unemployment census as a voluntary registration of unemployed and partly employed persons in the United States.[3] To direct the census of unemployment, President Roosevelt established a temporary agency, the Office of the Administrator of the Census of Partial Employment, Unemployment, and Occupations, under the direction of John D. Biggers. Biggers asked the Director of the Census, William Lane Austin, to provide staffing for the operation. Austin provided Calvert L. Dedrick, then the Chief of the Division of Statistical Research, and several other Bureau personnel to assist in management and machine tabulation for the project.
[1] U.S. Department of Commerce, 24th Annual Report of the Secretary of Commerce: June 30, 1936 (Washington, D.C.: Covernment Printing Office, 1936), p. 17.
[2] U.S. Department of Commerce, 27th Annual Report of the Secretary of Commerce: June 30, 1939 (Washington, D.C.: Covernment Printing Office, 1939), p. 26.
[3] U.S. Department of Commerce, Office of Federal Statistical Policy and Standards, Revolution in United States Covernment Statistics, 1926-1976, prepared by Joseph W. Duncan and William C. Shelton (Washington D.C.: Government Printing Office, 1978), pp. 44-45; U.S. Department of Commerce, 26th Annual Report of the Secretary of Commerce: June 30, 1938 (Washington, D.C.: Covernment Printing Office, 1938), pp. 35-36.

Dedrick had opposed the unemployment census before Congress, arguing that the manner of collecting the statistics would bias the results. Although he was unable to convince Congress, Dedrick did convince Biggers of the potential for substantial bias. At the urging of Dedrick, a check census was designed to represent the more than 80 percent of the U.S. population that was served by postal delivery routes. This sample was the first nationwide use of probability and area sampling to canvass a population for which lists were not available. This check census enabled more accurate estimates than the voluntary census and thus allowed estimates of the error in the voluntary figures.

The unemployment check census used a household enumeration form and sought to gather information on labor force activity in the week of November 14-20, 1937. Instructions were printed on the back of the form and Post Office Department employees conducted the field interviews. This check census was based upon a $2 \%$ sample of postal routes in the U.S., excluding a few business delivery routes in large cities.

The Bureau was involved in editing and tabulating the data and the preparation of final tables for publication. For this work, the Bureau received an appropriation of $\$ 850,000$. In addition to providing the Bureau with an opportunity to test its procedures for examining, coding, and preparing punch cards, the work on the census of unemployment provided the first use of sampling techniques for the national probability sample. This latter experience was valuable in planning for the 1940 Census of Population.

## Data Processing Planning

Throughout the 1930s the Bureau was engaged in the modemization of existing and building of additional mechanical equipment used for tabulation of the census. Much of the equipment was designed and built in the Bureau's Mechanical Laboratory, which had been first permanently established as the Census Machine Shop in 1917.[4]

Four types of power-driven machines had been used in tabulating the 1930 census: (1) unit counters, which tabulated single column characteristics; (2) adding tabulators, which summed quantities punched on successive cards; (3) sorters, which arranged cards in proper order; and (4) gang punches, which rapidly punched designations common to many cards in a series. During the mid-1930's, the unit counters were rebuilt in order to accommodate a change from 24 -column cards used in 1930 to 45 -column cards used in 1940. New gang punch heads were also built to accommodate the 45 -column cards. Additionally, the Mechanical Lab designed and built a new adding tabulator. These equipment changes were estimated to have saved the Bureau several thousand dollars in machine rentals.[5]
[4] For a detailed account of the history of census processing in the late nineteenth and early twentieth centuries, including the development of tabulation equipment, see Leon E. Truesdell, The Development of Punch Card Tabulation in the Bureau of the Census, 1890-1940 (Washington, D.C.: Government Printing Office, 1965).
[5] U.S. Department of Commerce, 24th Annual Report, p. 29-30.

The introduction of commercially available equipment also played an important role in the 1940 Census.[6] The IBM printer-tabulator was particularly important. This machine summarized data from consecutive cards, added items from different fields on the same card, and printed the results.

Geographical Planning
Another ongoing operation for the 1940 Census was the geographical preparation performed by the Bureau's Division of Ceography. This division was a service branch with responsibility for preparing the maps used as guides for the enumerators and their supervisors, preparing the maps and charts used in Census Bureau publications, assisting in the establishment of special measurement units (such as metropolitan districts and census tracts), and allocating the schedules of persons not at their usual place of residence at the time of the population canvass. The Division of Ceography had 75 people permanently employed as draftsmen, cartographers, and clerical help. During the preparations for the 1940 Census, the employment within the Division expanded to about 700 persons. [7]

The largest preparatory task involving the division was the preparing of the maps used by the census enumerators. This task began by dividing the states of the United States into supervisors' districts. One or more counties were allotted to each supervisor's district. A "plan of division by enumeration district (E.D.): was then prepared for each county. Enumeration districts were designed to be clearly defined areas-not including more than one incorporated place--that could easily be canvassed by a single enumerator in about two weeks in urban areas or a month in rural areas. The boundaries of E.D.'s were designed to follow either the boundaries of municipalities, wards, or minor civil divisions (civil township, election district, election precinct, school district, town, etc.); or roads, streets, railways, public survey lines, and other well-known lines. For purposes of the 1940 enumeration, the continental United States was divided into some 147,000 E.D.'s, an increase of 27,000 over 1930.[8]

In order to define E.D.'s that could be canvassed in the desired time periods, the Division of Geography had to take into consideration the number of inhabitants in incorporated places, the number of farms and inhabitants in each rural enumeration district, and the topography and access roads in rural areas. The Division also had to take into consideration the various statistical reporting areas such as states, counties, minor civil divisions, incorporated places, congressional districts, wards, and tracts for which the Bureau published data.

Rules formulated for the plan of division by enumeration district required that rural E.D.'s used in 1930 were to be used again in 1940 except in cases where the Field Division had recommended that the E.D. be divided, where changes had
[6] Truesdell, The Development of Punch Card Tabulation, p. 195.
[7] A. W. von Struve, 'Ceography in the Census Bureau,' Economic Ceography 16(July, 1940):275-280.
[8] Malcolm J. Proudfoot, "The United States Census of 1940,' Geographical Review 30(April, 1940):301-303.
occurred in the minor civil divisions, or where the description of the E.D. was incorrect. The rules governing the establishment of new rural E.D.'s maintained that population should not exceed 1,500, and that there should not be more than 250 farms.

Urban enumeration districts used in 1930 were also to be used in 1940 except where changes had occurred in minor civil divisions, assembly districts, or ward areas that resulted in a fragmented E.D.; where there was an establishment or revision of census tracts; where the E.D. description was incorrect; where the E.D. had impractical boundaries; or where information on file indicated that the population was too large or too small. New urban E.D.'s established in 1940 were to meet definite population guidelines- $-1,000$ persons on the edge of a city and 1,400 persons within the built-up portion of the city.

Other rules governing the plan of division by enumeration district, regardless of whether urban or rural, included the requirement that each minor civil division or dependent incorporated place comprise one or more E.D.'s; that dependent incorporated places situated in two or more minor civil divisions or incorporated places situated in two or more counties be divided into at least one E.D. for each minor civil division or county, respectively; that incorporated places of at least 3,000 persons that were divided into wards were required to have at least one E.D. per ward. Additionally, it was required that E.D. boundaries not cross boundaries of census tracts, wards, assembly districts, congressional districts, supervisor's districts, incorporated places, minor civil divisions, or counties; and that they not cut blocks unless it was to conform to the boundaries of the districts just named.

Separate enumeration districts were constructed for federal and state prisons, reformatories, mental institutions, and all other institutions having more than 100 inmates; for Roman Catholic institutions with 25 or more residents; for apartment buildings with 100 or more apartments in cities of 500,000 or more; and for national parks, lighthouses and lightships, Coast Guard stations, Civilian Conservation Corps camps, veteran's hospitals, and areas under military and naval jurisdiction. The Division of Ceography was also instructed to provide instructions for showing separately on population schedules (but not making separate E.D.'s) non-Roman Catholic institutions having fewer than 100 inmates; Roman Catholic institutions having fewer than 25 residents; apartment houses having fewer than 100 but more than 49 apartments, in cities of 500,000 or more; unincorporated places having an estimated population of more than 100 persons; and islands and unoccupied military reservations.

The Division of Ceography was responsible for making the original maps of these enumeration districts. Over 175,000 such maps were made for the 1940 Census. The division did not perform field mapping operations itself. Instead, the division compiled preexisting geographical information from a variety of sources: (1) a continually updated file containing several hundred thousand state, county, and city maps prepared by the civil governments and requested for use by the Bureau; (2) maps and map data collected by state highway departments and the Public Roads Administration and contributed to the Bureau; (3) aeronautical charts prepared by the Coast and Ceodetic Survey of the Department of Commerce; (4) General Land Office maps showing accurate tounship range and section boundaries; and, (5) topographical survey maps prepared by the Geological Survey in the Department of the interior.

In order to keep these map collections accurate and up-to-date, the Ceography Division maintained a large correspondence with state, county, and municipal authorities on boundary changes and other data. For example, during the 1938 fiscal year, ending on June 30 , 1938, some 1,850 letters were sent to city engineers concerning annexations and detachments and over 1,000 city and county maps were received. During the 1939 fiscal year, some 2,400 new county maps were obtained.[9] For the 1940 Census, base maps were prepared for 3,071 counties and 3,000 cities. In addition to the boundaries of these counties and cities, the boundaries of the approximately 52,000 minor civil divisions also had to be verified by local officials before final preparation of the maps.

The plans of division by enumeration district prepared by the Ceography Division outlined and described each enumeration district and provided a map of it. The boundary description of each E.D. included the name or number of each minor civil division; the name of the incorporated place within which it was located or with which it was contiguous; and the township, range, and section numbers when the E.D. was so described. Boundary descriptions of incorporated places listed streets and highways, rivers, railroads, and other distinctive features forming the district boundaries. Boundary descriptions of rural E.D.'s included the roads, streams, railroads, and similar features used as boundaries. In cities with a 1930 population of 50,000 or more, all city blocks were numbered and used as enumeration units. E.D. descriptions in such cases included a numerical listing and description of each block.

The E.D. maps were colored by hand to mark the district boundaries. County maps were also made for use by district supervisors and area managers. These were multi-colored maps that distinguished between minor civil divisions, enumeration districts, incorporated places, wards, delimited unincorporated places, national parks, and other civil or political boundaries. Separate maps were also made for each incorporated place that had a 1930 population of 2,500 or more. Copies of the plans of division were made for the Geography Division, the enumerator, the district supervisor, the area supervisor, the Field Division, and the squad leader (in cities of 50,000 or more). Copies of maps were provided to the Geography Division, the enumerator, the district and area supervisors, and squad leaders.

In addition to this map making, the Geography Division prepared the charts and illustrative maps used in Bureau publications. The Division of Geography was also responsible for the allocation of non-resident and absent household schedules to their proper enumeration districts. The Division checked to make sure that the persons enumerated on these schedules were not also enumerated at their place of permanent residence. Such transient schedules numbered about 500,000 for the 1940 Census.[10]

The Division of Geography participated in the on-going development of tabulation areas. During the period of planning for the 1940 Census, this work involved the

[^0] Report, p. 27.
[10] von Struve, ${ }^{\text {CCeography in the Census Bureau, }}$ p. 277.
establishment of metropolitan districts and guidance in the layout of census tracts of large cities.

In 1930, the Bureau had designated what were considered the principal metropolitan districts of the United States. These districts were required to have an aggregate population of 100,000 or more, with one or more central cities of 50,000 or more. In addition to the central city, the metropolitan district also included all contiguous civil divisions with a population density of at least 150 inhabitants per square mile.

The metropolitan districts designed by the Bureau were novel because they showed a city's geographic-economic, rather than political, boundaries. Business and industrial interests found these new tabulation areas to be useful and they sought an expansion in the scope and use of metropolitan districts as a basis for publications. The metropolitan district concept was also of interest to the cities, states, and the federal government in planning programs for the cities. In response, the Bureau appointed a committee to study a redefinition of these areas and the possible extension of their use as statistical reporting areas. This committee was composed of Paul T. Cherington, New York City, who represented marketing and advertising interests; T. W. Howard, the Chamber of Commerce of the United States, who represented manufacturers; and, Clenn E. McLaughlin, Bureau of Business Research, University of Pittsburg, who represented other statistical groups.[11]

Based upon the recommendations made by the committee, the Division of Ceography established 140 metropolitan districts for the 1940 Census, according to the criteria outlined above. Metropolitan districts then served as a basis of tabulation and publication of statistics.

The Division of Geography was also involved in setting standards for the establishment of census tracts in the large cities. Unlike political units with boundaries subject to change, the census tracts were designed to be relatively permanent, non-political boundaries within these cities that allowed chronologically consistent comparisons. The Geography Division established optimum requirements for tract delineation, but the actual tract boundaries were recommended by the localities in question. There were 71 cities that had established census tract grids as of the 1940 Census of Population.[12] The data for census tracts were not published but rather were only available for each city upon paying for the costs of tabulating the material desired for the tracts.

Preparation of Schedules and Instructions
The responsibility for development of specific census inquiries was first transferred from Congress to the Director of the Census Bureau, subject to approval by the Secretary of Commerce, by the Census Act of June 18, 1929. Prior to that time, the legislation authorizing each census had specified the questions to be included on the census schedules.
[11] U.S. Department of Commerce, 36th Annual Report, pp. 31-33; 27th
Annual Report, p. 27.
[12] von Struve, "Ceography in the Census Bureau," p. 278.

In early 1939, the Director of the Census asked the chief statisticians in charge of the divisions within the Bureau to develop a schedule that could be recommended for the 1940 census. [13] A tentative schedule was first presented for discussion at a general conference held March 3-4, 1939, and chaired by Dr. Louis 1. Dublin of the Metropolitan Life Insurance Company. The proposed schedule was also discussed at a conference sponsored by the National Bureau of Economic Research on April 21-22, 1939. In addition to discussion of specific items, these conferences discussed the use of sampling techniques in order to incorporate questions that had been crowded off the main population schedule.

Groups representing the major departments and agencies of the federal government and business, labor, and other special interest groups were present at these meetings. The Bureau directly consulted more than a thousand persons in these preparations. In addition, the census Advisory Committee appointed a technical standing committee to serve in an advisory capacity for six meetings held between April and June, 1939. Members of this technical advisory committee included Frederick F. Stephan, American Statistical Association, Chair; O. E. Baker, U.S. Department of Agriculture; Frank Lorimer, American University; P. K. Whelpton, Central Statistical Board; and Howard B. Myers, Works Progress Administration.

Preliminary schedules, instructions, and other forms were tested in a special census in Indiana during August 1939. Based upon an analysis of the results from this trial, final copies of forms and instructions were drawn. The final schedule forms were approved by the Central Statistical Board, the ASA Advisory Committee, the Director of the Census, and, ultimately, by the Secretary of Commerce. [14]

The Inclusion of Employment and Income Questions
One of the significant developments in the 16th Decennial Census of Population was the added emphasis on economic problems of the national labor force.[15] New questions were added in recognition of the need for data bearing upon the problems of large-scale unemployment, underemployment and irregular incomes.

The 1940 Census provided the first complete classification of work status for all persons fourteen years and over based on activity during a specified week. Work status was determined according to activity during the week of March 24-20, 1940. Persons were broadly classified as either in the labor force or not in the
[13] For the response of the Chief Statistician of the Population Division, see U.S. Department of Commerce, Bureau of the Census, 'General Memorandum on Changes Under Consideration for the 1940 Census of Population, ${ }^{\circ}$ prepared by Leon E. Truesdell, February 1939 (National Archives, Record Group 29, NN364-101, Series C, Box 2).
[14] U.S. Department of Commerce, 27th Annual Report, p. 29; 28th Annual Report of the Secretary of Commerce: June 30, 1940 (Washington, D.C.: Covernment Printing Office, 1940), pp. 38-39.
[15] A. Ross Eckler, 'Employment and Income Statistics,' Journal of the American Statistical Association 36(September, 1941):381-386.
labor force and within each category further distinctions were made based on the activity of persons--working, actively seeking work, attending school, etc.--during this week.

This new concept of labor force status differed from the 1930 concept of 'gainful workers.' This earlier concept included all persons who reported a gainful occupation--one in which they earned money or a money equivalent, or in which they assisted in the production of marketable goods--as of the census date and, also, those who reported that they usually pursued gainful occupations. One class of considerable significance, new workers, i.e., those looking for work who have not been previously employed, was not included in the category of gainful workers. New workers were included in the labor force category in 1940. Seasonal workers, disabled and retired workers, and institutional inmates were not included in the labor force.

The age limits also affected the comparability of gainful workers in 1930 and the labor force in 1940. In 1940, all persons under 14 are classified as outside the labor force; however, in 1930, persons aged 10 to 13 were counted as gainful workers if they reported gainful occupations. This group had become so small by 1940 that the expense of the additional enumeration and tabulation was not justified.[16]

The labor force statistics were designed largely to measure the volume of unemployment and the characteristics of the unemployed. In an attempt to determine the extent of underemployment or part-time employment, two new questions on hours worked and wage income were included in the 1940 Census. Also, information on employment was provided by a question on the number of weeks worked in 1939.

The 1940 census also utilized a new classification scheme for occupations. This scheme, developed by Alba M. Edwards, had eleven occupational groups: professionals and semi-professionals, farmers and farm managers, proprietors and other (non-farm) managers, clerical workers, craftsmen, operatives, domestic service workers, protective service workers, (other) service workers, farm laborers and foremen, and laborers. Edwards had sought to develop a classification scheme based upon 'social-economic status,' which would separate 'head workers' from 'hand workers' and divide the latter according to skill level. At the same time, the Social Security Administration was seeking the separate classification of employers, 'own account' (self-employed) workers, and employees. This need led to an increased importance for the class of worker question. In addition, the 1940 census used a new Census Industry Classification to classify workers by industry. This classification was based upon the Standard Industrial Classification prepared by the Central Statistical Board between 1937 and 1939.[17]
[16] Philip M. Hauser, 'The Labor Force and Cainful Workers--Concept, Measurement, and Comparability,' American Journal of Sociology 54(January 1949):338-355.
[17] Alba M. Edwards, 'Occupation and Industry Statistics,' Journal of the American Statistical Association 36 (September 1941):387-392; and Margo Conk, ${ }^{\circ}$ Occupational Classification in the United States Census: 1870-1940, Journal of Interdisciplinary History 9 (Summer 1978):111-130.

At the time the 1940 Census was in the planning stages, economists were seeking data on income distributions in order to explain the long depression which the country was experiencing. In 1936, the Conference on Research in Income and Wealth sponsored by the National Bureau of Economic Research suggested that the census include income questions. [18] This suggestion was only one of many that the Census Bureau received for including income questions.

The inclusion of a wage-income question in the 1930 census had been discussed at a general conference in the summer of 1929. This conference also discussed a question on the value of owned homes and the monthly rental of rented homes. It recommended including this latter question in the 1930 census because it was felt that the 'value or rental' question would be more readily answered, although sentiment favored the income question. Contrary to expectations, little objection to the income questions was encountered. The data gathered from this question came to be used as an index of purchasing power and economic status. [19]

During the 1930s, requests for income statistics continued to be presented to the Bureau from sources outside of govemment. Additionally, requests for such data came from such governmental agencies as the Social Security Board, the Bureau of Labor Statistics, the Work Projects Administration, and the United States Housing Authority.

In response to these requests, Dr. Leon Truesdell, the Chief of the Population Division, included two questions on income in his recommendations for the 1940 population schedule. These two questions asked (1) the amount of money wages or salary received and (2) if the person made more than $\$ 50$ from sources other than wages or salary. These questions were included on the preliminary schedules discussed at various conferences and were subsequently tested in the special census of St. Joseph and Marshall Counties, Indiana, in August, 1939. The inclusion of these questions, somewhat modified, as questions 32 and 33 on the 1940 population schedule was approved by the Technical Advisory Committee on Population, the ASA Advisory Committee, the Director of the Census, and the Secretary of Commerce.

The Census Bureau had anticipated objections from the public and adopted certain methods to help obtain the income information. People were asked to report only the amount of money wages and salary which they had received during 1939. An exact amount was not asked if the person received over $\$ 5,000$ of wage and salary income. For other types of income, the question asked was 'Did this person receive income of $\$ 50$ or more from sources other than money wages or salary. ${ }^{\text {P }}$ In addition, the Bureau put the income questions at the end of the
[18] Edwin D. Coldfield, Decennial Census and Current Population Survey Data on Income, ' pp. 39-63 in Conference on Research in Income and Wealth of the National Bureau of Economic Research, Studies in Income and Wealth, Volume 23, An Appraisal of the 1950 Census Income Data (Princeton: Princeton University Press, 1958).
[19] U.S. Department of Commerce, Bureau of the Census, "The Origin of the Wage Income Question on the 1940 Population Schedule, " prepared by Leon E. Truesdell, February 1940 (National Archives, Record Croup 29, NN364-101, Series C, Box 2).
schedule so that other information mould have already been obtained if the respondent protested reporting his or her income and refused to cooperate any further. A special procedure was also developed for persons who objected to giving the enumerators the answers to the income questions. This procedure involved the use of a confidential report form. The enumerator filled in identifying information on this form and gave it to the person being enumerated, who then provided the answers and mailed the form to Washington.

The inclusion of income questions on the population schedule sparked public criticism and adverse publicity, including newspaper editorials, cartoons, and articles. An important source of resistance was provided by United States Senator Charles W. Tobey of New Hampshire, who appeared on the floor of the Senate on January 3, 1940, to read a letter to the Secretary of Commerce. This letter denounced plans to ask income questions and requested that the Secretary eliminate the questions. When the Secretary refused, Tobey introduced a Senate Resolution that required deletion of the income questions from the population schedule. In February, Tobey made a nation-wide radio address and hearings were held on his resolution. Despite the support that Tobey's resolution received, the Senate leadership failed to call the resolution out of committee for a wote by the full Senate. However, it was in response to this public concern that the Census Bureau did develop the confidential reporting form for income.[20] Despite this publicity, the nonresponse rate for the wage and salary income question was 2 percent of the wage and salary workers, and only 200,000 confidential forms were used.

New questions on fertility, educational attainment, and migration were added. to the 1940 census schedule.

The 1940 census gave more attention to the subject of human fertility than any previous census. A question asking the number of children ever born to evermarried women was added. This question and information on the number of children under the age of five in the household provided measures of fertility.

For the first time in census history, a question was asked to obtain information on the highest grade of school completed by each individual. The addition of this question was seen to provide new possibilities for the analysis of the relation of education to other important variables.

Another new question asked each individual age five or older for their place of residence five years ago. When crosstabulated with place of residence in 1940 this new question allowed the computation of direct statistics on population migration. [21]
[20] See A. Ross Eckler, The Bureau of the Census (New York: Praeger, 1972), pp. 192-195; Ann H. Scott, Census U. S. A. (New York: Seabury Press, 1968), pp.45-46.
[21] Leon E. Truesdell, "New Features of the 1940 Population Census," Journal of the American Statistical Association 36 (September 1941):361-368; Henry Shryock, Jr., 'General Population Statistics,' Journal of the American Statistical Association 36 (September 1941):376-380; Malcolm J. Proudfoot, ${ }^{\text {New Inquiries }}$ for the Census of 1940, The Journal of Land and Public Utility Economics 16 (February 1940):102-104.

## Samoling Design

Another new development in the 1940 Census was an innovation in census procedure: sampling was incorporated as an integral part of the complete enumeration. In addition to the information obtained in the complete count of persons, "supplementary" information was obtained from a sample of one in every twenty persons. The Bureau felt that the use of sampling in this manner both enlarged the scope of the census and facilitated tabulations.[22]

The incorporation of sampling techniques by the Bureau met with some resistance. Bureau Director Austin initially opposed the use of sampling because he felt that it did not have public acceptance. In addition, Leon E. Truesdell, one of the senior officials in the Bureau and Chief of the Population Division, opposed the use of sampling. Support for the use of sampling came from Dedrick and Vergil D. Reed, the Assistant Director. With the top officials at the Bureau divided over the incorporation of sampling techniques, the decision reverted to the Secretary of Commerce, Harry Hopkins, who held ultimate legal authority. Hopkins' Economic Advisor, Willard L. Thorp, also favored the use of sampling. Hopkins decided in favor of the use of sampling in the 1940 Population Census. [23]

Philip M. Hauser, the Assistant Chief Statistician of the Population Division, and Dedrick planned the implementation of the sampling plan, using the consultative services of sampling expert Fredrick F. Stephan, then Secretary-Treasurer of the ASA, and Morris H. Hansen, of the Bureau's Statistical Research Division. To supervise the development of the sampling program, the Bureau sought out the services of Dr. W. Edwards Deming, a physicist and statistician in the Department of Agriculture.[24]

The requests of both government and private groups for more information led the Bureau to consider additional questions in the decennial census. One of the benefits of using sampling in the census enumeration was the opportunity to include more questions on the schedule. This was made possible because the supplementary questions were only asked $1 / 20$ th as often as the questions in the complete enumeration.

The Census Bureau considered another advantage of sampling to be that tabulations based upon a sample of persons could be finished months earlier than tabulations based upon the complete count. These earlier results proved to be beneficial in providing information needed for the emergency situation brought about by World War II. The greatly reduced cost of sample tabulations was considered an additional advantage, allowing more preparation and publication of such tabulations
[22] U.S. Department of Commerce, Bureau of the Census, On the Sampling Methods in the 1940 Population Census, prepared by Frederick F. Stephan and W. Edwards Deming, March 1941; for an overview, see Philip M. Hauser, "The Use of Sampling in the Census, Journal of the American Statistical Society, 36(September, 1941):369-375.
[23] Revolution in Government Statistics, pp. 45-46.
[24] Revolution in Government Statistics, p. 46; Truesdell, The Development of Punch Card Tabulation, p. 196.
than mould otherwise have been possible. In a similar light, the storage of the sample information on sample cards was considered more economical than the storage of cards from the complete count. Thus, subsequent tabulations could be produced as the need arose.

The Bureau acknowledged that in response to the changes brought by the Depression, there was an increased demand for an extensive body of statistical information regarding such concerns as unemployment, occupational shifts, migration, population growth, and other population changes. Since space on the schedule was necessarily limited, the adding of supplementary questions allowed the Bureau to expand its coverage to meet these needs. The use of sampling reduced the average time per interview that would have otherwise been necessary to obtain data, and substantially reduced the expanded costs of editing, coding, and tabulating the data.

In addition to being selected in a manner similar to the selection of the items for the full count on the main schedule, a consideration in the selection of the supplementary questions was the suitability of the questions for sampling. Since a sample is not a population inventory, the items chosen had to elicit information needed for generalizations, conclusions, and formation of policies for areas such as large cities, states, or geographic regions. The supplementary questions which appeared on the schedules included questions on parents' nativity, the language spoken in the respondent's home in earliest childhood (mother tongue), veteran status, social security information, usual occupation, usual industry and usual class of worker, nuptiality, and fertility. Most of these questions had appeared in earlier censuses in one form or another and their inclusion allowed comparison with these earlier censuses.

The sampling was designed to fit with existing census procedures. The sample was taken at the same time as the regular enumeration and the supplementary information was recorded in a separate section on the schedule.

The planners of the sampling at the Census Bureau felt that the sampling process should be kept as simple and automatic as possible. Since enumerators were employed for short periods of time, it was decided that it was impossible to provide enumerators with special training to conduct the sample. In order to avoid leaving anything to the discretion of the enumerator, the schedules were designed to remind the enumerators when to ask the supplementary questions.

The 1940 population enumeration form was a "line schedule' with 40 lines each on the front and the back. A separate line was used for each person enumerated. The sample was selected by designating two of the 40 lines on each side of the schedule with the symbol, 'Suppl. Ques.' Enumerators asked the supplementary questions at the bottom of the population schedule for each person whose name fell on a line that was so marked. This line-sampling procedure yielded a sample of two out of 40 , or five percent, of all the lines in each enumeration district, producing a sample that was stratified for geographic differences in population characteristics. The choice of a systematic pattem of lines within E.D.s served, in effect, as the sampling unit.

The Bureau would have preferred a procedure of random sampling after the complete census listings had been made. This approach was impractical for
administrative and financial reasons.[25] It was decided that it was not possible to pursue random sampling of households or persons within each enumeration district simultaneously with taking the census without burdening enumerators and possibly introducing additional bias. The Bureau made the choice to sample at designated intervals and determined that sampling persons, i.e., schedule lines, was preferred over sampling households. This choice was based upon the possible controls for line bias that are described below. Thus, this procedure was found to be the simplest and most convenient of all procedures investigated from the standooint of actual field experience. In addition, the inclusion of the supplementary questions at the bottom of the population schedule facilitated the matching of data on the main schedule with data on the supplementary schedule that occurred during the processing of returns.

The Census Bureau determined that it was necessary to overcome the bias inherent in the sample made up of designated schedule lines. Line bias occurs when designated lines persistently overstate or understate the frequency of certain characteristics and their proportions in the population. It was determined at the Bureau that such bias could arise from the nature of the systematic coverage provided by the census: enumerators in urban areas commenced enumeration at corner houses and worked around the block; in addition, within a household, the members were listed systematically from head through wife, children in order of age, other relatives, lodgers and their children, and servants and their children. The first few lines entered were thus biased in favor of corner houses and senior members of the household. Another source of bias could occur at the end and middle of the 80 -line schedule where sheets were turned over or new sheets started. Here a disproportionate amount of blank lines nould appear.

To reduce the possible effects of line bias, five different styles of the population schedule were used in enumeration. Each style was printed to show a different set of designated sample lines but was similar to other styles in every other respect. Four different styles ( ${ }^{\prime} W,{ }^{\prime}{ }^{\prime} X,{ }^{\prime} \quad \mathrm{Y}$, ' and ' $Z$ ') were used to give direct representation to the 16 lines that presented the greatest variation (see Figure 1), while one style ( ${ }^{\prime} V^{\prime}$ ) sampled the remaining 4 lines in an unbiased manner.

Figure 1
Schedule Style, Sampling Line Numbers and their Proportions

| Style | Proportion | Line Numbers |  |  |  |
| :---: | ---: | ---: | ---: | ---: | ---: |
|  |  |  |  |  |  |
| V | .80 | 14 | 29 | 55 | 68 |
| W | .05 | 1 | 5 | 41 | 75 |
| X | .05 | 2 | 6 | 42 | 77 |
| Y | .05 | 3 | 39 | 44 | 79 |
| Z | .05 | 4 | 40 | 46 | 80 |

The bureau decided to provide each enumerator with only one style of schedule. Since each enumeration district was canvassed by a single enumerator, the
[25] Frederick F. Stephan, W. Edwards Deming, and Morris H. Hansen, 'The Sampling Procedure of the 1940 Population Census,' Journal of the American Statistical Association 35 (December, 1940): 615-630.

16:1:1:1:1 ratios were thus maintained by enumeration district. Differences in the size of enumeration districts were considered to be controlled by the shuffling of the population by style of schedule. The plan of distribution of styles was rotated on the following scheme: $V \vee W \vee V V \vee X V V V V Y \vee V V \vee Z \vee V$. This rotation pattern was made in the initial packaging and distribution of schedules but could not be fully implemented. The rotation pattern was repeated county after county, without breaking at county or state lines.

The 1939 Special Census of St. Joseph and Marshall Counties, Indiana
By the summer of 1939, the Bureau had developed the preliminary schedules, instructions, and other forms to be used in the enumeration of the 1940 census. These preliminary procedures were pretested in a special census of St. joseph and Marshall Counties, Indiana, that began on August 14, 1939. Analysis of the results of this special census was used in the final decisions for preparations for the 1940 Population Census.

In addition to permitting tests of new forms and instructions, the trial census also provided an opportunity to test procedures for selecting enumerators through the use of objective examinations. Applicants for enumerator were given two tests. One test was based upon the abridged instructions to enumerators and covered the population schedule; the second test was based upon the instructions to enumerators and covered the supplementary schedule. The scores from these tests were then used in the selection of enumerators.

An innovation in the special census was the use of "field inspectors." The 170 enumerators hired for the special census were divided into groups of 10 to 20 enumerators. A field inspector was assigned to supervise each group of enumerators to act as the link between the enumerators and the supervisor. In the initial days of the enumeration, field inspectors were required to be available for enumerators' questions and to examine thoroughly completed population schedules and supplementary schedules for accuracy. Upon completion of an enumerator's assigned area, the field inspector was required to make a comparison of addresses on the population schedules with duplicate maps and descriptions of the enumeration district in an effort to ensure complete coverage.

The special census utilized two alternative forms of population schedules. One form, the white schedule, had 100 lines and followed the established practice of enumerating individuals sequentially by household. Additionally, an experimental green schedule was also utilized. This was a household schedule with space for 12 persons. Only one household was enumerated on each green schedule. Each form was used in approximately half of the enumeration districts in the special census, with only one type of form used in each enumeration district. Enumerators were also required to fill out a supplementary schedule for each tenth household visited. This supplementary schedule provided a basis for a sample study of information not included on the regular schedules. Selection of households occurred systematically, with enumerators filling out the supplementary schedule for every household whose visitation number on the regular schedules ended in the digit ${ }^{\prime} 5$.'

Information appearing on the population schedules contained the address, structure visitation number, structure type, household visitation number, farm residence status, home tenure, home value or rent, and the number of rooms in the home.

Other information contained on the schedules included the name of each person enumerated, the relationship of persons to the head of household, sex, race, age at last birthday, marital status, school attendance, highest grade completed, place of birth, citizenship status, and residence five years previous. Employment status, occupation and industry, weeks worked, and income information also appeared on the population schedules.

The supplementary population schedules also included information on general identification, utilities and appliances in the thome, mortgage indebtedness, female nuptiality and fertility, place of birth and mother tongue, usual occupation and industry, social security status, and veteran's status.

The information obtained from the special census was also used to train office employees. The preliminary editing and coding instructions, card forms, tabulations, and table forms for the final census reports of 1940 were all developed on the basis of the experience gained from processing the 1939 special census. Several statistical reports were also published.

The Inclusion of a Census of Housing
A Census of Housing was included in the Sixteenth Decennial Census by Congressional Act approved on August 11, 1939. This housing census was the first nationwide inventory of housing ever made. The act called for information on the number, characteristics, and geographical distribution of dwelling structures and units in the United States, Hawaii, Puerto Rico, the Virgin Islands, and Alaska. The act authorized $\$ 8,000,000$ to cover the costs of such a census. The housing census was undertaken as part of the federal government's recognition of the importance of improving housing conditions and was designed to provide essential housing facts to guide government agencies interested in housing, as well as to aid local public and private concerns.[26]

The inclusion of the housing census required additional planning. Much of this work came from a special housing committee that included: Warren J. Vinton, U.S. Housing Authority, chairman; Shirley K. Hart, Federal Housing Administration; Corwin A. Fergus, Federal Home Loan Bank Board; Thomas J. Woofter, Farm Security Administration; Aryness Joy, Department of Labor; Samuel J. Dennis, Bureau of Foreign and Domestic Commerce; Calvert L. Dedrick, Bureau of the Census; and Leon E. Truesdell, Bureau of the Census.[27]
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[26] See Howard G. Brunsman, "The Housing Census of 1940," Journal of the American Statistical Association 36:393-400.
[27] U.S. Department of Commerce, 28th Annual Report, June 30, 1950 Washington D.C.: Covernment Printing Office, 1938), p. 43.

## Chapter Three

## FIELD ENUMERATION


#### Abstract

The enumeration process for the 1940 Census of Population and Housing was the responsibility of the Census Bureau's Field Division. This responsibility included organization and training of the field staff, opening of field offices, execution of the enumeration, and preparation of preliminary population releases and pay vouchers. A description of these various activities is presented in this chapter. The population and housing schedules are also described.


## the structure of the field organization

The chief of the Field Division directed all field activities of the 1940 censuses. The United States and the territories and possessions were divided into three regions, each administered by an assistant to the chief of the Field Division. Each assistant was responsible for the progress and quality of work in his region. The chief and the assistants were headquartered in Washington.

The direct representatives of the Bureau in the field were 104 area managers appointed by the Director of the Census and located in cities designated by the chief of the Field Division. The territory under the supervision of the area manager was divided into districts, each headed by a district supervisor appointed by the Director.

Area managers were responsible for instructing the district supervisors and other field staff. They were also charged with providing assistance and supervision in all phases of district operations. The 529 district supervisors were responsible for directing collection of statistics from the start of the censuses of business and manufactures through the canvass of population and agriculture. Candidates for area manager and district supervisor were nominated either by members of Congress or by the Administration. Candidates for area manager were interviewed and trained by the permanent staff of the Bureau. These candidates received an eight-week training course during the fall of 1939. The course covered administrative and personnel procedures schedules, forms, and instructions. Objective tests were administered and approved candidates received appointments. During December 1939, the area managers held one-week training courses for the district supervisors. Additional correspondence training was also provided for both area managers and district supervisors between January and March 1940 and nine regional training sessions were held during February and March.[1] Both the area managers and the district supervisors were provided with assistants and were authorized to employ stenographers and other clerical help as needed. The area managers were informed by the Field Division in Washington of the number of office employees allowed in their respective area and district offices.
[1] A. Ross Eckler, The Bureau of the Census, New York: Praeger, 1972, p. 162; U.S. Department of Commerce, 28th Annual Report of the Secretary of Commerce: June 30, 1940 (Washington, D.C.:: Covernment Printing Office, 1940), p. 40.

In cities having populations of over 50,000 , district supervisors were allowed to hire squad leaders to assist in directing the work of enumerators. Area managers were advised by Washington of the number of squad leaders allowed in the districts under their supervision. In those cities where squad leaders were allowed, they were hired to direct approximately 20 enumerators. Squad leaders and enumerators were appointed by district supervisors, under the direction of the area managers. The approximate number of enumerators for each district was predetermined by the amount of work to be completed in the allotted time. There were approximately 120,000 enumerators employed in 1940. All squad leaders and enumerators worked under the supervision of district supervisors. District supervisors were encouraged to find enumerators who could speak foreign languages for use in those enumeration districts in which a considerable number of people did not speak English. When such enumerators could not be found, the supervisors had to request authority from the chief of the Field Division to appoint interpreters to assist enumerators in those areas.

## Area Offices

Area managers received training on the procedure and technical aspects of the canvass prior to the opening of their field offices. Once the training period was completed, area managers were responsible for arranging space, equipment, and telecommunications for their respective offices. The necessary forms and supplies for work in each office were shipped from the Field Division. When additional supplies were needed the area managers were instructed to requisition (Form F3-40) them from the chief of Field Division.

Before the beginning of the census of business and manufactures canvass, area managers brought together the district supervisors who had been conditionally assigned by Washington for training programs and subsequent examinations. Upon the completion of this program of training and evaluation, the examination papers and area managers' recommendations were forwarded to the chief of Field Division. Subsequently, the Director informed the area managers as to which supervisors would be appointed to each district.

Both area managers and district supervisors received "Plans of Division" (Form 16-3) showing the division of territory into enumeration districts, the piece-price rates to be paid enumerators therein, and the number of persons and farms reported from each district during the 1930 census. Area managers were instructed to require district supervisors to ascertain whether there had been any recent changes in the boundaries of minor civil divisions or in other political divisions. If such changes were found, the details of the changes, appropriate maps, and other evidence provided by county or local officials were sent to the chief of the Field Division. This procedure was required in sufficient time prior to the canvass in order that new descriptions and maps prepared by the Bureau would be available before the appointment of enumerators for the districts in question.

Area managers were encouraged to make regular visits to the headquarters of each district supervisor to make sure the canvass was being properly and satisfactorily conducted. They were instructed to make thorough checks of office records and to examine enumerator schedules to be sure proper entries were being made.

During the course of the canvass, area managers were authorized to subdivide established enumeration districts when necessary. The procedure to be followed allowed for the original enumeration district number to be retained and the parts to be marked "A,' 'B,' etc. Complete descriptions of the proposed new districts were submitted to the chief of Field Division and accompanied by the reasons for the changes.

Area managers were responsible for the prompt completion of work in each supervisor's district. Upon an investigation showing that work in the district office had been satisfactorily completed, area managers were authorized to close the office and forward the office records to the chief of the Field Division. Thereafter, the area manager was responsible for any cleanup work necessary in the district.

## District Offices

The territory under the jurisdiction of the area manager was divided into districts, each headed by a district supervisor. The district supervisor was directly responsible for the collection of statistics in the field. With the guidance and approval of the area managers, the district supervisors appointed and instructed all enumerators and other employees in the districts and directed their work throughout the canvasses.

The headquarters of each district supervisor was located in a city designated by the chief of the Field Division. In general, office space was utilized in federal or local government buildings. When such space was not available and space in a local chamber of commerce building was not available, the area manager was authorized to allow the rental of suitable quarters.

Although most communications in the field were conducted by mail, district supervisors were responsible for arranging telephone and telegraph service. They were also requested to make special arrangements with local postmasters for efficient mail delivery. All district correspondence with area managers and the Bureau was required to be in triplicate.

Schedules, forms, and other office supplies were shipped directly from Washington to the district supervisor's office. Additional supplies, when needed, were requisitioned from the area manager's office.

District supervisors were paid a sum of $\$ 2,000$ to cover the entire period of both the business and manufactures census and the population, agriculture, and irrigation censuses. A part of this compensation was paid at regular intervals during this period, and a part was withheld until area managers furnished proof that work in the district had been satisfactorily completed. In addition, a bonus compensation was paid upon satisfactory completion of the district supervisor's work. This bonus was based upon the number of schedules completed within the district.

Both district and assistant district supervisors were allowed traveling expenses and subsistence allowances, not to exceed $\$ 5$ per day, during necessary absences from their headquarters. Such allowances were not paid when the employee traveled to the community in which he normally lived. At the time of appointment, district supervisors and their assistants were required to submit affidavits (Form F2-40)
to the Director indicating their place of permanent residence. District supervisors were also authorized to incur necessary miscellaneous expenses not to exceed $\$ 25$ during the period the office was in operation, for materials that could not be shipped from Washington, e.g., ink and glue.

The district supervisor was responsible for prompt preparation of all payrolls and expense vouchers in accordance with "Instructions for Accounting Procedure." Completed payrolls and vouchers were forwarded to the area manager for approval and transmission to the appropriate disbursing office.

## GENERAL PREPARATIONS

## Examination of Enumeration Districts

One of the first important duties of the district supervisor was to examine the list of enumeration districts outlined by the Bureau to make sure that they were clearly defined and that all incorporated places where included. Enumeration districts were to be small enough to allow an enumerator to finish his or her work in the time prescribed (about 2 weeks in urban areas and about 30 days in rural areas). In cases involving very small enumeration districts, district supervisors were allowed to assign an enumerator two or more districts once the first one had been completed. In such cases, separate returns were made for each enumeration district.

In examining the list of enumeration districts, district supervisors were to make sure that the descriptions and maps of the enumeration districts correctly represented the civil subdivisions of the counties in their districts. Similarly, the descriptions of enumeration districts in cities and other incorporated places were to be examined to ascertain that they represented actual boundaries as they existed. The district supervisors were to consult with county and city officials to verify the data that the Bureau had obtained.

The detection of mistakes in boundaries as shown on the enumeration district descriptions or the detection of unclear descriptions resulted in requests for the necessary changes, using the form "Request for Revision of Enumeration Districts" (Form 16-387). The original and two copies of this form went to the area manager. Included with this request were a map showing the boundary changes and a statement from a local official that could be made available to Washington. District supervisors were instructed not to enumerate these districts until they received a new set of descriptions from Washington. The geographer studied submitted changes; when the descriptions had been approved he notified the area manager and district supervisór. The geographer provided the district supervisor with new maps, descriptions, and enumeration district numbers for these new districts. If the changes were not approved, the district supervisor received an explanation and new instructions.

Other changes in enumeration districts occurred when it was necessary to split an enumeration district after enumeration had begun. This occurred only when it became clear that the enumeration district was too large to be completed in the allotted time. When such divisions were necessary, district supervisors were required to fill out 'Split Enumeration District Report' (Form 16-5) in quintuplicate. The first four copies were mailed to the area manager, who
returned a signed copy upon approval as the district supervisor's authority to make the changes and proceed with enumeration.

In dividing an enumeration district, each part of the district retained the original enumeration district number except that the letters ' $A$ ' and ' $B$ ' were added to identify the two parts. In the report filed by the district supervisor, the boundaries of each part were to be described accurately and in sufficient detail to prevent questions from arising. District supervisors were instructed to assume that their changes had been approved by the Division of Ceography unless otherwise notified.

## Receipt of Schedules and Supplies

Schedules, blank forms, and other supplies were sent to district supervisors in packages as needed. The population schedules and other supplies needed by enumerators were enclosed in portfolios. Each portfolio contained the materials necessary for one enumeration district. The boxes of portfolios and farm schedules were numbered consecutively in order of shipment. These boxes were to be retained and used in returning the completed schedules. Upon receipt of the final shipment of boxes, district supervisors were instructed to notify the chief of the Field Division as to the number of boxes received, the number of boxes damaged in transit, and the number of additional boxes needed.

As noted above, a separate portfolio was provided for each enumeration district. The portfolio contained copies of the various census schedules and other blank forms necessary to meet the enumeration requirements that were estimated for the particular district by the Census Bureau. The portfolio contained a printed label with the enumeration district number and space for entering the name of the enumerator and, where appropriate, the number of the squad leader's district. Pasted on the inside of the front cover of the portfolio were a description of the enumeration district and a map showing its outlines.

Portfolios were to be either mailed or delivered to the enumerators after they had been appointed, taken the oath of office, and received the necessary instructions. Enumerators were encouraged to promptly acknowledge receipt of the portfolios, to prevent delays in the work.

Selection and Training of Enumerators and Squad Leaders
All applicants for the position of enumerator were required to fill out application blanks. The district supervisor was encouraged to interview applicants whenever possible in order that the applicants could speak freely about their qualifications. After examination of applications and interviews, the district supervisors were instructed to make a list of those applicants who could be reasonably expected to qualify as enumerators. This list became an eligibility list for the administration of a screening examination.

Persons not qualified for the job, as indicated by the screening process, were notified by the district supervisor that they did not have the necessary qualifications. The following criteria were used in eliminating applicants from the eligibility lists: their handwriting was not sufficiently legible, their applications indicated an inability to follow written directions, they were current or retired federal employees, they were under 18 or over 65 , or they had been tax collectors or assessors since 1937.

District supervisors were instructed to give hiring preference to the following: war veterans and widows of war veterans (when equally qualified with others); crop reporters for the USDA (if not USDA employees); retired farmers; those who were attending or had attended agricultural colleges; school teachers; town clerks, recorders and other local officials (where state laws did not prohibit their employment), applicants who were at least high school graduates, and applicants whose appearance and manner indicated that they were suited for public contact.

Using this list of qualified applicants, district supervisors selected a number 50 to 100 percent larger than the number of enumerators required. The extra candidates thus produced provided a pool from which substitute enumerators could be drawn in case an enumerator was unable to continue his or her work. A number of training forms were then mailed to this group, with instructions to study these materials in preparation for testing. District supervisors made arrangements to administer the tests to the applicants and informed the applicants of these arrangements in the mailing of study materials.

Applicants were given the examinations in groups of 25 to 100. One tour was allowed for each test. -1 (population) and A-1 (agriculture). The tests were then $g$ raded by the district supervisors. Applicants making the highest scores on Test 1 and Test $A-1$ were selected to take the enumerators' training course.

Applicants who had been tentatively selected as enumerators were sent additional study materials prior to the beginning of this training course. The applicants were required to fill out sample training schedules and return them to the district supervisors for evaluation.

The training course began with the applicants reviewing the corrections made by the district supervisor on their sample training schedules. The training session then followed with a question and answer period centered on the schedules. Where time allowed, applicants were shown several training films. Additionally, the applicants were given Population Test 11 and Agriculture Test A-11. The district supervisors scored the examinations and those persons receiving the highest passing scores were given appointments as enumerators. Persons making bwer (but passing) scores were given further instructions before being allowed to begin as enumerators. District supervisors were instructed to encourage the enumerators to continue to study their instruction books after the formal training had ended.

Enumerator appointments were allowed without the prior approval of the Director. The enumerators received a letter of notification (Form 15-102) stating the rate of compensation and containing a blank oath of office (Form F8-40). Certificates of appointment were required for each enumeration district. Therefore, in cases in which an enumerator had more than one district, multiple certificates of appointment were required. The oath had to be signed, witnessed by a notary officer, and received by the district supervisor before the appointment certificate and any supplies were forwarded to the enumerator. District supervisors were required to forward to the area manager at the close of each day a list of names of enumerators from whom oaths had been received and to whom appointment certificates had been sent.

Upon taking the oath of office, enumerators were obliged to perform their work according to the procedures and subject to the penalties of the Census Act. Among the various penalties prescribed by the Census Act were up to a $\$ 500$ fine
on a misdemeanor for neglecting or refusing to perform duties; up to a $\$ 1,000$ fine and/or two years imprisonment for publishing or communicating unauthorized information; and, up to a $\$ 2,000$ fine and/or five years imprisonment for perjury or making false reports. Explicit warnings were made to avoid disclosing to any unauthorized person any information which they had secured. Additionally, enumerators were warned against failure to make an honest effort at securing full returns for their districts and against attempts to swell the size of their returns.

If a person declined to serve as an enumerator after taking the oath of office and receiving an appointment but before rendering any service, his or her certificate was cancelled. Clerical employees in the supervisor's office had to submit formal resignation notices (Form F7-40) addressed to the Director. Enumerators who resigned or terminated their employment were not required to submit resignations or notices of termination. According to the Census Act, enumerators could not retire from their appointment without "justifiable cause." District supervisors were instructed to make every attempt to convince enumerators to continue with their work and avoid the penalties prescribed by law. An additional instruction to district supervisors required that they make statements as to the efficiency of each employee working under their supervision. These statements were kept on file for use in future employment references.

In those districts where squad leaders were used, they were to be selected from the list of enumerator applicants on the basis of administrative experience and ability, as well as competence in understanding the schedules and instructions. District supervisors were encouraged to select squad leaders in advance of the training period for enumerators so they could assist in that training process. The training of squad leaders followed the procedures outlined above for enumerators. Once appointed, squad leaders were allowed to establish headquarters in public buildings apart from the district supervisor's office, so that they could maintain closer contact with enumerators.

## Public Relations

Area managers and district supervisors were encouraged to make every effort to disseminate information regarding the needs of the census work. This effort was aimed primarily at local newspapers, radio stations, and any other available channels. The Bureau also encouraged area managers and district supervisors to establish contacts with local organizations and officials in order to obtain their cooperation in promoting a complete and effective census. The Bureau's desire was to use organizational cooperation to create public interest in the census and to circulate information. While this cooperation was promoted, citizens and organizations were not allowed to be involved in any manner in the actual enumeration or to receive any census information except preliminary announcements.

The Division of Public Relations was responsible for the development and issuance of press releases throughout the entire nation during the canvass period. All area managers and district supervisors were instructed to contact civic organizations to secure their involvement in circulating this information to the press.

## THE ENUMERATION PROCESS

According to law, the enumeration was to be made as of 12:01 A.M., April 1, 1940. The work of enumeration began on the following day, April 2. Enumeration was to be completed within 2 weeks in any incorporated place of 2,500 inhabitants or more in 1930, and within 30 days in all other districts.

Additionally, persons in hotels, tourist camps, trailers, and flophouses were enumerated where they spent the night of April 8th (see below). It was the responsibility of district supervisors to arrange assistance needed for this canvass. The district supervisor was encouraged to have clerks in the office, as well as squad leaders, assist where necessary. The names of persons enumerated as of the night of April 8th were placed on separate sheets of the population schedule.

Squad leaders, used in districts of 50,000 or more, assisted in the plans for the special enumerations on the nights of April 8th and 9th, by obtaining from their enumerators a list of all places requiring special enumeration procedures and an estimate of the number of persons likely to be there on those nights.

## General Instructions

Enumerators were instructed to begin their canvass by carefully checking for completeness and accuracy the map and description of the enumeration district which had been furnished to them.

Enumerators were told to visit every house, building, tent, cabin, hut, or other place in which a person might be living or staying. All women, men, and children (including infants) whose usual place of residence was in the enumeration district were to be enumerated. "Usual place of residence' was specified as meaning where people 'live' or have their 'home." This instruction to enumerate all persons included persons who were temporarily absent, persons who were in the district at the time of the enumeration but had no other place of usual residence at which they would be enumerated, and all persons who moved into the district after enumeration had begun but were not previously enumerated. Also to be enumerated were all inmates of prisons, homes for orphans, or similar institutions located in an enumeration district. All inmates of a jail, no matter how short their term of sentence, were to be enumerated as residents of the district. For convenience in enumeration, larger institutions were made separate enumeration districts and were enumerated, in most cases, by some employee of the institution. In addition, in cities which had a population of 500,000 or more in 1930, apartment houses with 100 or more apartments were made separate enumeration districts.

Enumerators were instructed to inquire of every household whether certain types of persons were members of the household: persons temporarily absent, either in foreign countries or elsewhere in the United States; persons attending schools or colleges; persons in hospitals or sanitariums; persons who were servants or employees and lived in the same household or slept in the same dwelling; persons who were boarders or lodgers and slept in the house; and persons in the household who were enrolled in the Civilian Conservation Corps. Such persons were to be enumerated as members of the households in the enumerator's district.

Similarly, enumerators were given instructions as to which persons they were not to enumerate, even though these persons might be present in the household at the time of enumeration. Such persons were considered to have usual places of residence other than the household in question, e.g., visitors, households temporarily in the enumeration district, transient boarders or lodgers, students living with the household whose home or usual place of residence was elsewhere, servants or other household employees who did not sleep in the same dwelling, and transient patients of hospitals and sanitariums (these persons were to be enumerated as residents of the household of which they were members).

Persons living in certain types of dwellings--hotels, tourist facilities, flophouses--were enumerated on particular evenings. On April 8th, all persons living in tourist or trailer camps, missions, and cheap one-night lodging houses (flophouses) in an enumeration district were to be enumerated. Also on April 8th, enumerators left a Hotel List (Form P-8) with the manager of each hotel. The manager was instructed to provide the names of all persons who spent the night of April 8th in his hotel including permanent residents who were not in the hotel that evening. Enumerators also left a supply of Individual Census forms (Form P-7) to be filled out by each guest. Form P-7 requested all population schedule information including supplementary questions. On April 9th, enumerators returned to collect these forms and interview persons on the Hotel List who failed to return an Individual Census Form. Enumerators were instructed to begin new sheets of the population schedule for the enumeration of these persons and mo place these new sheets after the other schedules in the enumeration district, numbering them in sequence beginning with sheet 81 . Additionally, enumerators were instructed to enter a " $I$ " in column 3 of the schedule, rather than a visitation number, for the first person enumerated in each dwelling on those nights. Column 3 was to be left blank for subsequent persons in those places. Enumerators separated the Individual Census Forms into two groups. One group contained the forms of persons who indicated a usual place of residence other than the hotel. The information from all other forms (those of permanent guests, resident employees and transient guests not reporting another place of residence) was transferred to the sheets of the population schedule reserved for persons enumerated on the night of April 8th.

Enumerators were provided with Enumerator's Record Books (Form P-6), in which they were required to enter five types of situations: 1. All households that had to be revisited; 2. households in which members were not expected to be present during the period of the canvass; 3. households temporarily in the enumerator's district but which claimed residence elsewhere; 4. households refusing to furnish required information; and, 5. vacant city blocks in an enumerator's district. Additionally, enumerators were required to record necessary call-backs to obtain housing information. The enumerator's record book provided space for address, household visitation number, structure visitation number and unit number within structure (housing census), spaces reserved on the population or housing schedules, date of the first visit, a brief explanation of the reason for revisiting and any appointment information, and the date upon which the information was finally obtained. Upon completion of enumeration, the record book was turned in to the supervisor for inspection. The supervisor used the information to determine the adequacy of the canvass.

Enumerators received special instructions for those cases in which no member of a household was home at the time of a first visit. When a member of the household
was expected to return during the period of the canvass, the enumerator was instructed to leave a copy of the Preliminary Population Schedule (Form P-11), assign a household visitation number, and record this information in the enumerator's record book. The entry in this case contained the address of the household to be revisited and the household visitation number. Where the enumerator was able to determine the number of persons in the household to be revisited, he or she was instructed to leave an appropriate number of lines on the population schedule. If the enumerator was unable to find out this information, the instructions were to proceed with the enumeration of the next household without leaving space on the schedule.

The preliminary schedule which was left at households to be revisited was designed to provide enumerators with required information, including supplementary questions, for each person in the household. Upon revisiting such households, the enumerators were instructed to check completed preliminary schedules for questionable entries and, if none were found, to transcribe the household data onto the population schedule. Responses to supplementary questions were transcribed only for persons whose names fell on the appropriately designated lines. If no preliminary schedule had been prepared, the household was to be enumerated in the usual manner. Households and persons for whom space was not reserved on the population schedule were enumerated on separate sheets beginning with sheet number 61. Also included on these separate sheets were individuals enumerated out of order but who were members of households enumerated in regular order. For such persons, the household visitation number of his or her household was entered in column 3 of the schedule, followed by "cont'd."

In cases in which a household was away from its place of residence for the entire period of the canvass, enumerators were instructed to attempt to obtain the name of the head of the househoid and the address at which he or she was residing. This information was to be entered in the Enumerator's Record Book and a 'Report Card for Absent Household" (Form P-6) was to be turned in or mailed to the supervisor.

Enumerators were also given special instructions on how to enumerate those persons who claimed that their usual place of residence was outside the enumerator's district. Such persons, were to be enumerated on the "Nonresident Schedule" (Form $\mathrm{P}-10$ ), which differed from the population schedule in two ways. The nonresident schedule inquired about both the location of the usual place of residence and the place of residence at the time of enumeration. Additionally, the nonresident schedule included supplementary questions to be asked of all persons in the household. Entries were made in the record book of each household enumerated on the nonresident schedule and completed nonresident schedules were mailed to the district supervisor at the end of each day's canvass for forwarding to the appropriate census office.

In those cases in which a household refused to give the information requested, enumerators were instructed to assign a household visitation number and record this number, the household address, and the structure information (if a housing census was being taken) in the record book. The enumerator was to report immediately such cases to the supervisor or squad leader. If the enumerator was able to obtain the names of the persons in the household, he or she was to leave an appropriate number of spaces on the population schedule. If the enumerator was unable to obtain such information, the squad leader or district supervisor was to
do so. The use of tact and diplomacy in obtaining responses was recommended. Reference to the penalties provided for by the Census Act was allowed in extreme cases. The Census Act specified that any person over the age of 18 who refused to answer census inquiries was subject to misdemeanor prosecution and a penalty of up to $\$ 100$ and/or 60 days imprisonment. Additionally, such a person who willfully provided false answers was subject to a fine of up to $\$ 500$ and/or imprisonment of one year. In those rare cases in which the district supervisor was unable to obtain information, a detailed report was sent to the area manager for action.

Enumerators were also given special instructions for recording any vacant housing units. In urban enumeration districts, the maps and descriptions of the enumeration districts showed the individual blocks making up each district. Each block had a block number. Enumerators were instructed to enter in their record book as a vacant block any one on which there were no residential structures of any kind. When enumerators encountered a vacant dwelling unit (either a house or an apartment) or a vacant room in a lodging house, they were required to leave a "Card for New Occupant." This card was to be mailed to the supervisor and provided notification of the need to return to enumerate the new occupant(s).

Filling Out the Population Schedules
Enumerators were given certain general instructions about filling out the population schedules.[2] Enumerators were instructed to use a separate numbered line for each individual enumerated and never to crowd individuals into spaces not numbered. Ditto marks were not allowed, although dashes were allowed in the sole case of repetition of a surname. Enumerators were requested to sign every form. They were also encouraged to seek information from a responsible adult nember of the household.

The population schedule had three distinct parts: a heading, consisting of geographical and other identification information; 'main lines,' containing the items asked of all persons; and 'supplementary lines,' including additional items asked of five percent of those enumerated.

The heading on the population schedule was to be filled out completely before any persons were enumerated on the schedule (see Figure 2, Appendix 1). The first entry for each enumeration district was to begin on a new sheet of the schedule. The sheets of the population schedules used to enumerate persons in regular order were numbered serially, beginning with sheet number 1. Sheets for persons enumerated out of regular order were numbered serially beginning with sheet number 61. Those sheets used to enumerate persons on the night of April 8th were numbered serially beginning with sheet number 81. Vacant lines were to appear only at the end of one of these three groups of schedules.

Once the heading information had been filled out, the enumerator began recording information in the columns of the population schedule (see Figure 3, Appendix 1). The first two columns recorded the location of the household--the name of the street, road, etc., and the house number. Enumerators were asked to mark a heavy line across these two columns when they reached the end of any street.
[2] A facsimile of the population schedule is provided in Appendix 1, Figure 1.

Ceneral household data were recorded in columns 3 to 6. These entries were to be made only for the first line of any housetold, the one on which the head was listed. This information included a household visitation number--a sequential number for every household in the enumeration district. For census purposes, a household was defined as 'a family or any other group of persons, whether or not related by blood or marriage, living together with common housekeeping arrangements in the same living quarters." In multiple-unit buildings (apartment houses, apartment-hotels, and tenements), there were as many households as there were separately occupied apartment or dwelling units. However, a hotel, boarding house, lodging house, or institution constituted only one household. Servants, hired hands, boarders or lodgers who slept in the house and had no other usual place of residence were counted as members of the household. Also included in the general household data columns was information about whether the home or dwelling unit was owned by a member of the household or rented; the estimated market value of an owned home or the actual monthly rent paid; and, whether the household lived on a farm.

Column 7 of each schedule was reserved for the name of each person whose usual place of residence was with the household. These names were recorded surname first, followed by the given name and initial. In those cases in which the surname was the same as that of a member of the same household enumerated on the line above, a long dash was entered rather than the surname. If an entire household could not be entered on one side of the schedule, the enumerator was instructed to fill out all lines on the side and mark the box labeled "Household continued on next page" on the lower left margin of the schedule. In such cases, 'Cont'd." was to written in columns 1 and 2 of the new page and columns 3 to 6 were to be left blank. An ' $X$ " with a circle around it was to be written after the name of the person in each household who furnished the information.

Column 8 of the schedule recorded the relationship of the person in column 7 to the head of the household. Lodgers, hired hands, chauffeurs, and servants were designated as such in column 8, and their relatives were designated as 'lodger's son,' 'servant's daughter," etc. Institutional occupants were designated as officer, inmate, patient, pupil, etc., except for prisoners in penal institutions, whose prison numbers were entered in column 8.

Personal descriptions were entered in columns 9 to 12. This information included sex, race, age at last birthday, and marital status. Infants born between 12:01 a.m., December 1, 1939, and 12:01 a.m., April 1, 1940, had "Infant Cards" filled out in addition to the regular line entry on the population schedule.[3] Column 13 was used for response to the question of whether the person had attended school or college, except correspondence school, at any time since March 1, 1940. The last full grade of school or college completed by the person was entered in column 14.

Information on the person's place of birth was recorded in column 15. Column 16 was used to enter citizenship information for all foreign-born persons and persons bom at sea. Four types of citizenship were recorded: (1)
[3] Infant cards were completed for a separate study of the coverage of newborn children in vital statistics, i.e., birth registration, programs and in the census itself.
-NA'--naturalized citizens, (2) ${ }^{\prime} P A^{\prime}$ '--declaration of intention to become
naturalized--'first papers: taken out, (3) "AL'--alien, and (4) -AmCit"--American citizen at birth. In columns 17 to 20 , the place of residence on April 1, 1935, of every person was entered. For persons under 5 years of age, a dash (--) was entered.

For persons 14 years old and over, questions in columns 21 to 33 requested labor force information. Questions 21 to 25 were designed to classify all persons 14 years old and over according to their work status during the week of March 24-30, 1940. These persons were divided according to whether or not they were in the labor force. Persons who had a job, business, or profession in which they worked for pay or profit, or who were seeking work, were considered to be in the labor force. Persons in the labor force were categorized into four groups: (1) persons at work in private work or nonemergency federal, state, or local govermment work; (2) persons at work on, or assigned to public emergency project work; (3) persons seeking work, not classified into one of the two categories above; and, (4) persons having jobs, businesses, or professional enterprises from which they were temporarily absent during the week of March 24-30. Special instructions were given to enumerators in communities in which there were only a few dominant industries. Here, enumerators were instructed to indicate as 'seeking work' those individuals who may not have been actively seeking work only because the industries were shut down and there were no other possible jobs to be sought.

If persons did not fit into one of the above categories, they were classified as 'not in the labor force,' and further categorized as: (1) devoting most of their time to care of the home and housework; (2) in school; (3) physically unable to work; and, (4) in a residual category including retired persons and people choosing not to work.

For persons who were at work in either private or nonemergency government work, column 26 was used to record the number of hours worked during the week of March 24-30, 1940. Column 27 was used to enter the duration of unemployment, as of the week ending March 30, 1940, for all persons seeking work or assigned to public emergency work. For persons with previous work experience, this was the number of weeks since the last full-time private or nonemergency government job. For persons without previous work experience of one month or more, and for experienced persons who were seeking work after a period of absence from the labor force, the entry was the number of weeks since the person last began seeking work. Weeks of public emergency work, e.g., WPA, CCC, were counted as weeks of unemployment for the purpose of this question.

Columns 28 to 30 were used to enter occupation, industry, and class of norker information for those persons in the labor force. These columns were left blank for persons not in the labor force. The nature of the duties performed in the person's job was recorded in column 28 (occupation). For persons who were employed during this period in more than one occupation, the information recorded concerned the occupation at which the most time was spent. Persons who were seeking work and who had previous job experience were asked to give the occupational information from the last job on which they worked one month or more, including public emergency work. For those who were seeking work and had no previous job, the entry 'new worker' was made in column 28, and columns 29 and 30 were left blank. Information on the kind of industry or establishment
(factory, store, etc.) in which these duties were performed was entered in column 29 (industry).

Column 30 recorded the person's "class of norker': (1) "PW'--a wage or salary worker who was working for a private employer; (2) "CW'-all government workers, at all levels, including public emergency workers; (3) ' E'--persons who were conducting their own business and employed one or more helpers other than unpaid family members or domestic servants; (4) 'OA'--persons who conducted their own business or professional enterprise but did not employ helpers, i.e., persons working on their "own account;" and, (5) 'NP'-an unpaid family worker who was working for a related family member and contributing to family income (housework and incidental chores not included).

For every person age 14 and over, except most institutional inmates, there mes to be an entry in column 31 indicating the number of full-time weeks worked in 1939. This number included weeks on public emergency work or performing unpaid family employment. A ${ }^{\bullet} 0^{\circ}$ was recorded for persons who did not work for pay or profit during 1939. The total amount of money wages or salary paid in cash or check to each person for work done as an employee during 1939 was entered in column 32. This amount included commissions, tips, piece-rate payments, and bonuses; it also included work on public emergency projects. This amount did not include earnings by farmers or those engaged in business or the professions who did not work for wages or salaries but rather whose income nas from business profits, sales of crops, or fees. Persons who did not receive any money wages or salary in payment for employment were given a ${ }^{\circ} 0^{\circ}$ in this column. If a person made over $\$ 5,000$ in money wages or salary, '5000+' was entered in column 32.

For each person aged 14 or over, either a "yes" or a "no" was entered in column 33 in response to the question: Did this person receive income of $\$ 50$ or more from sources other than money wages or salary? ' Included in these other sources were the following: rents from roomers or boarders, business profits, fees, rents, interest or dividends, unemployment benefits, direct relief, and income in kind paid as wages. Not included as other sources were lump sum inheritances, lump sum compensation benefits, occasional gifts, reimbursements for travelling expenses, and receipts from the sale of land or securities. A "no" was recorded in this column for persons not receiving income amounting to $\$ 50$ from one or more of the allowable sources.

Those persons who refused to provide the information for columns 32 and 33 were presented the option of answering the questions on a "Confidential Report on Wage or Salary Income, 1939' (Form P-16). Enumerators recorded at the bottom of this form the state, the enumeration district number, and the sheet and line number of the population schedule on which the person was enumerated. In the right margin of the schedule, they entered a "C"--for confidential report. While the person was entitled to fill out the form in private, enumerators were instructed to wait for the information to be placed in an envelope (Form C-131) addressed to the Director of the Census, sealed, and returned to the enumerator for mailing. Enumerators were instructed to report any refusals to their supervisors, and to make the necessary entries in their record books.

Column 34 was used to record the number of the farm schedule filled out by any household member who operated a farm or other place requiring a farm schedule, e.g., a greenhouse.

The population schedule had 40 lines on each side. Two of these lines were designated to obtain certain supplementary information for the two persons whose names fell on the lines. At the bottom of the schedule there were two lines on which supplemental questions appeared and where responses to these questions were to be recorded (see Appendix 1, Figure 4). This was the sample information described in the previous chapter. Supplemental questions were to be asked only of the member of the household whose name appeared on the designated line, regardless of the relationship to the household head. Column 35 was used to record the name of the person for whom the supplementary information was required.

The place of birth of the person's father was entered in column 36 and the place of birth of the person's mother was entered in column 37. The principal foreign language spoken in the person's home during earliest childhood was entered in column 38. "English' was entered in this column if no foreign language was spoken. In column 39 there was entered either a "yes" or "no" to the following question: 'Is this person a veteran of the military forces of the United States--Army, Navy, or Marine Corps--or a wife, widow, or under-18-year-old child of a veteran?" Column 40 contained the response to this question: "If a child, is veteran-father dead?" Information on the wars in which the veteran or veteran-husband or veteran-father served was entered in column 41.

Social security information was entered in columns 42-44. This information included whether the person had a federal social security number (column 42), whether deductions for federal old-age insurance or railroad retirement were made from the person's wages or salary in 1939 (column 43), and, for those with the deductions named in the previous question, whether the deductions were made from (1) all, (2) one-half or more, or (3) part, but less than half, of wages or salary (column 44). In columns 45 to 47, information was entered about the person's usual occupation, industry, and class of work. This information was entered in accord with the instructions for entering information in columns 28-30. However, the information in columns 45-47 was not necessarily the same as that entered in the previous columns. If the person had never worked full time for a month or more, 'none' was entered in column 45, and columns 46 and 47 were left blank.

For each woman on the supplemental line who had been married, widowed, or divorced (based on column 12), information was entered in columns 48-50. Column 48 contained the response to the question of whether the woman had been married more than once. The age of the woman at her first marriage was entered in column 49. Finally, the number of children ever born to this woman, excluding stillbirths, was entered in column 50.

The Housing Schedules
The inclusion of the housing census in the Sixteenth Decennial Census was designed to provide an inventory of housing facts. The housing census used two different schedules that were filled in by the enumerators conducting the population census. Both housing schedules incorporated precoded squares for some inquiries which, for the first time, allowed enumerators to record responses by checking the appropriate square.

The "Occupied-Dwelling Schedule" (Form 16-254) was used to enumerate all dwelling units that were occupied by a household enumerated on the 'Population Schedule." The 'Vacant-Dwelling Schedule' (Form 16-486) was used to obtain information on all dwelling units not occupied by enumerated households. Such dwelling units were primarily vacant and for sale or rent at the time of enumeration. Also, those units that were being held for the occupancy of absent households were listed on the vacant-dwelling schedule.

The entries on the occupied-dwelling schedules were arranged in several parts. Part 1. contained information on the location of the dwelling unit and household data. Specific items included the number of the structure in order of visitation and the dwelling unit number within the structure, the population line number of the head of the household, the block number (in cities of 50,000 or more), the race of the head, the number of persons in the household, farm residence, home tenure (owned or rented), and the value of the home or the amount of monthly rent paid. Part $\|$ contained data on the characteristics of the structure, such as number of dwelling units, the presence of a business within the structure, the year and purpose for which the structure was originally built, and the exterior material and need for major repairs. Information on the characteristics of the dwelling units, such as the number of rooms and the equipment present, was contained in part 111. Part IV consisted of utility data, including any fumiture that was included in the rent. Finally, financial data for each ouner-occupied nonfarm unit was presented in part $V$ of the occupied-dwelling schedule. This information consisted of the value of the property, the total mortgage debt, the first mortgage debt, the regular payments, the interest charged, and the holder of the first mortgage or land contract.

The vacant-dwelling schedules contained information in three parts. The location and general data in part 1 included the visitation and dwelling unit numbers, the block number, farm location, an occupancy status, and the monthly rental (or an estimate). Part 11 , the characteristics of the structure, and part III, the characteristics of the dwelling unit, were the same as on the occupied-dwelling schedule.

The housing census was designed to be taken along with the census of population. Enumerators filled in responses on the housing schedules as they completed the population canvass. The additional work of taking the housing census delayed the enumerators. Many enumeration districts that had been laid out for population and agriculture censuses were too large to be canvassed by one enumerator wien the housing census was added. As a result, some enumeration districts were divided and in some E. D.'s the period for completion was extended.[4]

## Enumeration Supervision

It was stressed to district supervisors that the instruction of enumerators and their supervision during the first two to three days of the canvass were essential in assuring that enumerators conducted their work promptly and efficiently. The concern of this early inspection lay principally with the form and completeness of entries and not with the thoroughness of the canvass. District supervisors were told to make sure that either they or their assistants checked to see that
[4] U.S. Department of Commerce, 28th Annual Report.
enumerators were carrying out instructions for filling out schedules and making proper entries in their record books. In those cities of 50,000 and over where squad leaders were used, each squad leader was responsible for inspecting those schedules filled out by enumerators. Squad leaders were instructed to meet with the enumerators at least every other day.

In urban supervisors' districts, enumerators were to submit the schedules completed in their first day's work at the close of the first day or early the second day. The district supervisor, assistant district supervisor, or squad leader then went over the completed work with them, commented on errors and omissions, and gave additional instructions, allowing the enumerators time to ask questions. All enumerators were to have their schedules examined and receive additional instructions within the first two days of the canvass.

The same plan was encouraged in rural supervisors' districts. Special provisions were designed for those cases where the necessary travel was difficult. Additionally, rural enumeration districts were divided into four approximately equal subdistricts, which were canvassed as independent units. Enumerators were instructed to submit completed schedules for each subdistrict to the district supervisor for inspection and approval before beginning the canvass of another subdistrict. The completeness of enumeration was particularly stressed for rural districts.

The method of examining population schedules involved three steps. The first step required checking for complete heading information on every schedule that had been used. The second step consisted of a series of tests to assure the completeness of entries: entries were required in columns 2-6 for the head of every household, and only for heads of households; in columns 7-15 for every person; in column 16 for every person born abroad or at sea; in columns 17 and 20 for every person age 5 or over, except under certain conditions; only certain combinations of entries were excepted in columns 21-27 and only for those 14 years of age or over; entries were required in columns 21-33 for every person 14 years and older; in columns 35-50 far each person enumerated on a line marked 'Suppl. Quest.'; and an infant card was required for every infant reported as $0 / 12,1 / 12,2 / 12$, or $3 / 12$ years of age in column 11. Enumerators were to supply any missing information, if necessary, by revisiting the household.

The third step in the examination of schedules involved tests of accuracy: ditto marks were permitted only in column 7 to show the repetition of surnames; use of unauthorized symbols was not allowed; rents and values entered in column 5 were to be consistent with the entry in column 4 and with other values and rentals in the vicinity; names were to be entered in proper order; proper relationship to head of household entries were to be made; entries for sex, relationship to head, age, and marital status were to be consistent; the entry for highest grade completed was to be consistent with the age entry; occupation and industry entries in columns 28-29 were to be detailed; and entries for social security in columns 42-44 were to be consistent. Any needed corrections were made by the enumerator while the work was being inspected.

Squad leaders were assigned certain enumerators and charged with the responsibility of supervising the accuracy, completeness, and timing of the enumerators' work. Squad leaders were encouraged to keep records of all questions asked by enumerators that could not be answered. These questions were
referred to the district supervisor. Upon completion of the enumeration, this record of questions was to be given to the district supervisor, who in turn was to mail it along with other office records to the chief of the Field Division in Washington.

After the initial inspection of enumerator entries had been made, it was no longer expected that all entries would be checked. However, squad leaders were encouraged to continue to inspect a 'good portion' of the enumerators' entries during regularly scheduled meetings with the enumerators. Squad leaders were also instructed to inspect each record book to make sure that the enumerator had been using it according to instructions. Particular attention was given to making the necessary return visits to households where no respondent was at home at the time of the enumerator's first visit.

Squad leaders were provided with duplicate maps and descriptions of each enumeration district under their supervision in order to make sure that each enumerator had completely covered his or her assignment. Additionally, squad leaders were instructed to verify approximately five percent of each enumerator's work by taking one completed schedule from each enumerator and making sure that each household had been contacted and that no occupied dwellings were omitted. Squad leaders were further encouraged to contact each household listed on the schedule to ensure the enumeration of the household was accurate.

Additionally, the completeness of an enumerator's canvass was monitored through the district supervisor's knowledge of the territory, inspection of the enumerator's completed schedules and record book, examination of rural district maps, and comparison with city directories, voting lists, assessors' lists, telephone directories, and earlier censuses. When examination indicated that the returns for any district were incomplete or erroneous, enurnerators were required to make the necessary corrections without delay. In those extreme cases in which the schedules of a district were too faulty to allow proper corrections, district supervisors were required to make a full report to the chief of the Field Division, who had authority to order a reenumeration of the whole district or any part that was needed to make the returns satisfactory.

## Progress Reporting

The squad leaders were instructed to report each morning to the district supervisor's office. They were also required each day to fill out the 'Squad Leader's Daily Report' (Form F-102). Although these instructions were developed for use in urban areas in which squad leaders were used, the instructions were also recommended for district supervisors who did not have squad leaders but who provided enumeration supervision themselves or through an assistant.

District supervisors were instructed that if during the course of the enumeration it became evident that work assigned to an enumerator was not likely to be completed within the allotted time period, supervisors should take measures to hasten the completion of the work. The measure recommended was to divide the enumerator's territory and assign a part to another enumerator. In the event that an enumerator resigned or was dismissed, district supervisors were also instructed to appoint new enumerators immediately. In such cases, the supervisor was instructed to send a complete statement of the facts of the case to the chief of the Field Division.

Included in enumerator portfolios was a set of "Daily Report Cards" (Form F-100). These cards were filled out each day and mailed to either the enumerator's squad leader, where they were used, or to the district supervisor. Before mailing these report cards, enumerators were instructed to post a record of them on the 'Enumerator's Consolidated Production Record' (Form F-101). At the end of this production record was a "Certificate of Completion" of the enumeration district. When the enumerator had completed his or her district this certificate was to be signed and the consolidated production record mailed to the district supervisor.

From the enumerator's daily report cards, squad leaders made daily reports to the district supervisor informing him of each enumerator's progress. These reports were included in the squad leader's daily report. District supervisors posted these reports on a summary form. If there were no squad leaders in a supervisor's district, the summary sheet was completed directly from the enumerators' report cards. These postings served as records of progress in the enumeration of supervisors' districts and as a check for counting and verifying the population schedules. The cards were filed for each enumerator in order of their date and subsequently formed a basis for payment of enumerators and for the 'District Supervisor's Daily Report to Area Manager" (Form F-104). This latter form reported the total number of enumerators at work and the status of the enumeration in the various enumeration districts under the district supervisor's authority. In those cases in which an enumerator failed to send a daily report card, the squad leader or district supervisor was instructed to send out a card indicating the "Failure to receive a daily report" (Form 15-122).

Area managers were required to mail weekly reports to the Washington office. These reports covered the week running from Thursday through the following Wednesday, and were due in Washington on or before Monday of the following week. Consolidated progress reports summarizing the activities of the entire Field Division for the previous week were then produced and distributed to the area managers.

Upon the completion of each county in a district, the district supervisor sent the chief of the field Division a certificate of completion stating that all of the population and farms in the county had been emumerated and that the enumeration was complete.

Preliminary Population Counts: Announcements and Vouchers
District supervisors were instructed that upon the completion of the canvass of population and agriculture in their districts, an announcement was to be made of the population of each city of 10,000 persons or more and of each county in their districts, and the number of farms in each county. Announcement of population figures for smaller cities and minor civil divisions were left to the discretion of the district supervisors.

These announcements were sent to the chief of the Field Division, area managers, local officials, principal local newspapers, and other interested organizations, such as the chamber of commerce and boards of trade. The letter of transmittal that accompanied the announcement (Form P-116) invited these organizations to report the names of persons in their organization who might have been omitted from the census. The district supervisor was authorized to provide explanations to
any queries, to make necessary investigations, and to have an enumerator correct or complete his or her enumeration. However, the consent of the Director of the Census was necessary to reenumerate any district. Copies of all official correspondence concerning announcements, complaints, and criticisms were to be sent to the chief of the Field Division.

The information necessary for making these preliminary announcements was based upon a count made by the district supervisor for the preparation of the enumerators' pay vouchers. This count was a total of the number of persons on the population schedule, the number of farm schedules returned, and the number of infant cards. The population count made by the district supervisor from the examination of enumerator's finished population schedules was made on a 'Population Count Slip" (Form P-113). For a given enumeration district, this count slip included the mumber of names and either blank lines or lines containing notations other than names for every sheet used in the enumeration of that district.

After examining and counting the schedules turned in by the enumerators and determining to their satisfaction that the returns were complete and the canvass thorough, district supervisors were to complete vouchers to pay enumerators. The rates of cormpensation for districts were established by the Census Bureau in Washington. The bases for compensation were the number of persons enumerated on the population and nonresident schedules, and the numbers of infant cards, farm schedules, and any other schedules (if any) returned. The counts used in the preparation of vouchers were those made in the district supervisor's office, not the counts in the enumerator's daily reports.

Enumerators were required to submit their consolidated production records, on which the certificate of completion statement appeared, and all daily report cards before the voucher was sent to them for their signature. District supervisors were required to check the signature on the signed voucher with the signature on the enumerator's oath of office for similarity. They were also instructed to hold the voucher for five days after the preliminary announcement of the population of the area of which the enumeration district was part in order to be sure there were no complaints. In the event of complaints, the vouchers were held until the enumerator's services were no longer needed. Once this period ended, the district supervisors attached the summary of the enumerator's daily work report, application, oath of office, and both copies of the certificate of appointment to the voucher and forwarded them to Washington for payment.

Enumerators were paid on a piece rate basis. These rates were shown on the certificate of appointment and were designed to produce an average salary of $\$ 4$ to $\$ 5$ per day. Factors taken into consideration in determining rates of pay included population density, farm density, and transportation required. Any changes in the rates of pay established by the Bureau required the area manager's and the Director's approval.

Return of Schedules and Final Reporting
Once the preliminary announcement of the population and number of farms was made and enumerator's pay vouchers were certified, the district supervisor's office repacked the completed schedules in the boxes in which they had been originally shipped. The returns of each enumerator were to be kept together,
except in those cases in which there were more than 15 farm schedules. In this latter event, the farm schedules were packed and mailed separately. Included in the box were the population schedules and the count slip, any agriculture schedules--plantation, irrigation, farm, ranch, abandoned or idle farm list--and the certificate of completion. Boxes were shipped to the Bureau of Census by registered mail as they were filled.

District supervisors were also required to notify the Bureau by invoice (Form F16-40) of the shipment of boxes of schedules. These invoices contained information including the box number, the enumeration district numbers to which the schedules pertained, and whether the box contained farm schedules. These invoices were made in quadruplicate for each day's shipment. The first copy was sent by mail to Washington, the second placed inside one of the boxes in the day's shipment, the third copy sent to the area manager, and the last copy retained by the district office.

District supervisors were required to make a full report of the work in their districts before completing their duties. This report was expected to include both a formal statement of beginning and completion dates of certain processes and the number of employees, and also a more general statement describing the conditions and difficulties encountered, and assessing the methods adopted. This report was to cover all phases of the enumeration process, including division of the territory into enumeration districts, selection and instruction of enumerators, supervision of enumerators' work, rates of compensation, cooperation, and publicity. District supervisors were also encouraged to make suggestions for the improvement of census methods.

Special Situations
In general, most persons residing on federal lands were enumerated by the federal agency or service with jurisdiction over the area. Military posts, naval stations, and Civilian Conservation Corps camps were made separate enumeration districts and enumerated by the service in question. Persons attached to posts or stations but living outside post limits were to be enumerated as members of the households which they usually kept rather than as members of the post. The War and Nawy departments also provided census data for officers and enlisted men, and civilian employees on transports and naval vessels. Similarly, the Coast Cuard provided enumeration of all officers and enlisted men and of all employees and their families living at their places of duty and working for the U. S. Lighthouse Service. Regular census enumeration was made of the families of those in the Coast Cuard at their usual places of residence.

Most Indian reservations were enumerated by employees of the Bureau of Indian Affairs. Also, all persons having their usual places of abode within the boundaries of national parks were enumerated by the National Park Service. The necessary data for seamen and other employees on vessels who did not maintain homes on shore were obtained by the Bureau of Fisheries and the Coast and Geodetic Survey. The State Department enumerated all employees and their family members who were stationed abroad. Finally, special provision was made to enumerate the crews of vessels in foreign and intercoastal trade and on the Great Lakes. Even though these crew members had homes on shore they were not to be enumerated in the regular manner. Each vessel was enumerated on a separate 100 -entry standard population schedule, sometimes by one of the ship's officers
who was appointed as census taker. The counts and characteristics were tabulated to special enumeration districts set up for this purpose, and the crew members were counted as part of the population of the port from which the vessel operated.

## Chapter Four

## PROCESSING AND TABULATION

Following the completion of the enumeration process and field checks of the completed returns, the portfolios which contained the population and housing schedules were mailed to the Census Bureau in Washington, D.C. Once the schedules had been received at the Bureau they were processed and the information was transformed into tabular form. The system data processing was organized into a number of distinct operations that produced a flow of materials for the subsequent operations. This chapter traces this flow of processing operations from the initial receipt and checking of schedules through the tabulation of the data. The numbered operations are listed below.

Operations Procedures in the Processing of the 1940 Censuses


## INITIAL ACTIVITIES

Once the census schedules had been received and given a preliminary examination, they were passed through a series of steps that readied them for later coding and tabulation. An initial operation was the matching of the population and housing schedules. In this operation, all schedules and auxiliary forms were examined for data consistency and completeness. Following this match, hand counts were made of both the population and housing schedules, data from sample persons were transcribed on the preliminary sample sheet, and the schedules and auxiliary forms were separated for further operations or filing. This section on initial activities includes a discussion of the manner in which the Bureau maintained records on the flow of work.

Receipt and Examination of Population Schedules
Portfolios containing the completed schedules were received in Washington by the Field Division. In Operation 1, Field Division staff inspected each portfolio for the proper number of completed forms:

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- Population Schedules' (Forms P-16-252),
- Infant Cards' (Form P-4),
- Occupied-Dwelling Schedules' (Form 16-254),
-Vacant-Dwelling Schedules' (Form 16-486),
- Enumerator's Record Book' (Form P-6),
- Population Count Slips' (Form P-113),
-Housing Count Slips" (Form HC-10).
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The count of the mumber of population schedule sheets had to agree with the population count slip, the counts on the two dwelling schedule sheets had to agree with the housing count slip. In addition, the number of infant cards had to agree with the number recorded in the 'Enumerator's Consolidated Production Record' (Form F-101). In the case of missing materials, the district supervisor was sent a list of missing materials and the portfolio was set aside until the materials were accounted for.

The staff in Operation 1 inspected the heading information on the first sheets of the population and dwelling schedules to see that it agreed with the description and map of the enumeration district in the portfolio. Unexplained discrepancies were routed to the Geography Division for correction, as were any 'Nonresident Schedules" (Form P-10) and "Absent Household Schedules' (Form P-110) needing assignment to the proper enumeration district. The contents of inspected and computed portfolios were listed on receipt forms and the portfolios containing the schedules were forwarded by the Field Division to the Population Division in county units.

In Operation 2, the population and housing schedules were received and examined by the Population Division. Receipt clerks compared the enumeration district (E.D.) number of each portfolio with the E.D. numbers listed on the delivery receipt for each county. When these numbers matched, the receipt clerk signed the receipt form and forwarded it to the control file record clerk. The receipt clerk then inspected the label on each portfolio, pasted a 'Portfolio Memorandum' (Form P-302) on the outside of the portfolio, and delivered the portfolios to the section chief for assignment to examination clerks.

Examination clerks filled in identification information-EE.D. number, state name, county name, the name of cities of 100,000 or more, or the name of the independent cities in Virginia--on the portfolio memorandum. Once this information had been recorded, the examination clerks removed from the portfolio all schedules and forms except for the population schedules and the dwelling schedules.

The examination clerks examined the schedules for consistency of E.D. numbers and compared heading information on the population schedule with the description of the E.D. pasted on the portfolio.

Each 'Individual Census Form' (Form P-7) was examined to determine that the enumerator had transcribed onto the population schedule the information for persons residing in the E.D. These schedules were then divided into various groups to aid in the identification of problems. Forms which had not been completely transcribed onto population schedules were segregated for completion in Operation 3. Forms which had been transcribed onto schedules were examined at a rate of one in ten to determine that the information was complete, although
consistency between the individual census form and the population schedule was not examined.

The "Preliminary Population Schedules" (Form P-11) were also removed from the portfolio. Every fifth schedule was checked to see that the information for the entire household had been transferred to the population schedule. Consistency between the two forms was not required. Clerks noted whether the information on the two forms appeared to be the same. If any of the preliminary population schedules thus checked had not been transferred onto the population schedule, the clerk was required to check all preliminary population schedules in the portfolio to see that all information had been transferred. Those preliminary population schedules which contained names not transferred were left in the portfolio, while any preliminary schedules on which all the names had been transferred were removed from the portfolio. A similar procedure was used to compare the preliminary housing schedules with the housing schedules.

## Matching of Population and Housing Schedules

The matching of the population and housing schedules was carried out in Operation 3. This operation involved four main processes: (1) population and housing schedules were determined to be in the proper portfolio; (2) when necessary, information was transferred from auxiliary forms to the population and housing schedules; (3) infant cards were matched with entries for infants on the population schedule; and, (4) households on the population schedule were matched with dwelling units on the occupied-dwelling schedule.

The first step in the matching operation involved determining if the population and housing schedules were in the proper portfolio. Clerks were instructed to check both the ' $A$ ' and ' $B$ ' sides of each population schedule, occupied-dwelling schedule, and vacant-dwelling schedule to be sure that the E.D. number agreed with the E.D. number shown on the portfolio label. They also examined the heading information on each sheet of all the schedules for thoroughness and consistency of completion and supplied any missing entries which could be determined correctly. The geographer's map and description of the enumeration district were available on the inside cover of the portfolio for such use. In addition, the clerks placed the schedules in numerical order according to type of schedule.

In the second step of Operation 3 , information on supplemental forms was transferred to the population and housing schedules. The supplemental forms included individual census forms, preliminary population schedules, nonresident schedules, and absent-household schedules. Entries on these forms were compared with the entries on the population schedules to determine whether the persons enumerated on the supplemental forms had been enumerated on the schedules. If they had been enumerated, the forms were cancelled; if not, the information on the auxiliary forms was transferred to the population schedule.

The procedure for checking individual census forms began with noting whether a sheet and line number had been entered in the space provided on the form. If the information had been transferred, the form was set aside. If the space had been reserved but the information not transferred, the clerk transferred the information.

If the individual census forms did not contain these sheet and line numbers, the address at which the person should have been enumerated was to be listed on the form. In this case, the clerk found the sheets of the population schedule used for enumeration of persons on the same street. If a house number was reported, the entries for persons living at that address were examined to determine if the person on the individual census form was entered on the schedule. If the person was not listed at that address, the visitation number of the household at the address was compared with entries for household visitation numbers on the sheets used for persons enumerated out of order. When the entry could not be found on these sheets, the entry for the person was transferred from the individual census form to the sheets used for persons enumerated out of order, i.e., sheets numbered 61 and over.

In cases in which there was little or no address information present on the individual census form, the clerks were instructed to search among the names of persons in households enumerated on the same street or, if that information was not available, among the names of persons in the same E.D. in order to find the appropriate household. When the clerks had transferred all information which they determined possible, they marked the individual census forms to show either that the information had been transferred, including the sheet and line number of where the information was transferred, or that the information was not transferred.

The streets and house numbers on all preliminary population schedules were checked against the population schedule to determine if all persons in the household had been enumerated. If all members had been enumerated, the clerk initialed the preliminary population schecule and indicated on which sheet and line number of the population schedule the information could be found. In such cases, the two schedules were to be checked for consistency and any necessary corrections made.

If only some of the members of the household had information appearing for them on the population schedule, but space had been left for the rest of the household, the clerks were instructed to transfer the information for the rest of the household from the preliminary population schedule. If space was not reserved for these additional household members, the information for them was transferred to the first available line on the sheets used for persons enumerated out of order and the trusehold visitation number on the population schedule was marked "cont." The sheet and line numbers to which the information was transferred were marked on the preliminary population schedule.

In those cases in which no space had been reserved on the population schedule for the household listed on the preliminary population schedule, the clerks transferred the information to the first available line on the sheets used for persons enumerated out of order. The assignment of a household visitation number was unnecessary in such instances. If the street and house number were not listed, the clerks compared the names on the preliminary population schedule with the names of persons for the entire E.D. in order to determine whether all or part of the household had been reported on the population schedules. When a household listed on the preliminary schedule could not be found on the population schedule, it was entered on the first available line on sheets reserved for persons enumerated out of order.

The procedures for transferring information from both the nonresident schedules and the absent-household schedules to the population schedule were the same. These procedures relied upon using the street and house numbers whenever possible. If these numbers were not available, the name was used to examine the population schedules in order to determine whether all or part of a household had been reported.

When the clerks found entries on the population schedule, they checked the information with that on the nonresident or. absent household schedule for discrepancies. If only part of a household appeared on the population schedule, the information on the rest of the members was transferred to the reserved spaces, if any, or to space on the sheets reserved for persons enumerated out of order. Similarly, if none of the members of a household had been listed on the population schedule, their information was transferred to space reserved for the household, if any, or to space on the sheets for persons enumerated out of order.

Preliminary housing schedules were occasionally found in the portfolios; the clerks were required to compare the entries on them with the entries on the occupieddwelling schedule. If the information for the dwelling unit was not already entered on the occupied-dwelling schedule, the clerks were to compare the address on the preliminary housing schedule with the same address on the population schedule. If a household was found at the same address on the population schedule and there was no housing information on either the occupied-dwelling or vacant-dwelling schedules, the information was transferred from the preliminary housing schedule to the occupied-dwelling schedule. When there was not a household listed on the population schedule, the clerks were instructed to find the dwelling unit on the vacant-dwelling schedule and to add the unit to that schedule if it appeared to constitute an additional dwelling. If the information necessary to make a determination was not present, the clerks marked the preliminary housing schedule "not transferred."

The third step in Operation 3 was the matching of infant cards with entries for infants on the population schedule. Infant cards were arranged in order by sheet and line number for each portfolio. The infant cards were then compared with the corresponding sheet and line numbers to see if the name of the child listed on the card was also listed on the population schedule. The information in the two entries was compared and corrected, if necessary, and a check mark was placed after the infant's name on the population schedule, to indicate that the infant card had been checked. The age of the infant was checked. If the age of the infant was over three months on the schedule and did not agree with the age on the infant card, the schedule was changed to agree with the card unless the date of birth on the infant card was prior to December 1, 1939. In this latter case, the infant card was cancelled by marking a large ' $X$ ' through it.

If there was an infant card for an infant whose name did not appear on the population schedule but whose father and mother had been enumerated, the information was transferred to the population schedule. If a mother or father could not be found on the schedule, the infant card was marked ino such household."

After the infant cards had been compared to the entries on the population schedule and a check mark had been made on the schedule for each infant who had a card, the clerks then checked the schedule for all entries in column 11, the age entry.

Any entries of '3/12' or less should have had check marks beside them. If any such entries did not have check marks, infant cards were filled out for the infant based on the information appearing on the population schedule. Once all cards and entries on the schedule had been examined, the clerks returned the infant cards to the portfolio.

The fourth and final step in Operation 3 was the matching of population and housing schedules. The first sheet of the occupied-dwelling schedule was placed over the corresponding sheet of the population schedule. Line 1 on sheet 1 of the population schedule should have been filled out for the head of a household. For every person with an entry of "head" in column 8 there were to be entries in columns 3-6. The population schedule line number for the head was to appear in the space marked "Population Line No." on the occupied-dwelling schedule. If the two numbers corresponded, the clerks placed a check mark on the occupieddwelling schedule. The clerks repeated the process for each line on the population schedule for which entries appeared for a "head," until every head of household enumerated had been checked. Certain types of households were excepted from entries on the occupied-dwelling schedule. These exceptions were institutional households, hotel households, and households for which all entries on the population schedule had been made by the clerk in the second step of Operation 3.

There were households enumerated on the population schedule for which no dwelling unit had been enumerated on the occupied-dwelling schedule. If such instances occurred more frequently than once per sheet, they were referred to the section chief. Certain rules were developed for handling less frequent occurrences. If there were entries in columns 3-6 of the population schedule but the person in column 8 was not designated head, the clerk cancelled the entries in columns 3-6 only. When there were no entries in columns 3-6 but the entry in column 8 was "head," the clerks were instrucied to cancel the "head" entry. Finally, if there were entries in columns 3-6 and an entry of "head" in column 8, the clerks compared the entry for number of persons on the occupied-dwelling schedule for the previous dwelling unit with the number of persons listed in the previous household on the population schedule. When the entry for number of persons in the previous dwelling unit included the persons in both the previous household and the household in question and the street address of the two households was the same, the entries in columns 3-6 and column 8 for the "head" of this household were cancelled. If either the addresses of the two households were different or the entry of the number of persons in the previous dwelling unit on the occupieddwelling schedule did not include persons in the questioned household, the clerk was instructed to assume that the dwelling unit had not been enumerated on the occupied-dwelling schedule. The clerks then made entries on this schedule based upon information present on the population schedule. The clerks also checked to see if the information for the dwelling unit appeared on the vacant-dwelling schedule and cancelled the entries if they did appear.

The clerks were also instructed how to treat dwelling units for which no head of household had been enumerated on the population schedule. The clerks first compared the names and addresses on the occupied-dwelling schedule with the names and addresses on the population schedule. If the name and address appeared on the population schedule but was not designated "head" in column 8, the clerks cancelled the entry in that column and replaced it with the entry "head" for a person who was 18 years old or over and not the wife of the head.

If columns 3-6 were blank for these persons, the information was transferred from the occupied-dwelling schedule to the population schedule. Clerks were instructed to check the number of persons in the previous and succeeding dwelling units and compare these numbers with those entered on the population schedule in order to be sure that any new household created had not already been included in another household. If the clerks could not find the name on the occupied-dwelling schedule or the population schedule, or if they found the name but the person was under 18 or wife of a household head, they cancelled the entry on the occupieddwelling schedule and transferred the information to the vacant-dwelling schedule. Such transfers were not made until matching of all households and dwelling units was completed.

With the completion of the matching of every dwelling unit on the occupieddwelling schedule with a household on the population schedule, the clerk was instructed to check the block number entries on the occupied-dwelling schedule with the number on the population schedule. Block numbers appeared on both schedules for all cities of population 50,000 or greater. If the block numbers did not agree, the clerks checked the street names and house numbers with the map of the enumeration district and corrected the wrong entries.

The clerks also had to check for completeness the entries on the occupied-dwelling schedules for which the information could be obtained from the population schedule. If any information was missing on the dwelling schedule it was transferred from the population schedule. Similarly, the clerks checked the entries in columns 3-6 of the population schedule for each person designated "head" on column 8. If any information was missing in these entries it was transferred from the occupied-dwelling schedule to the population schedule.

An occupied-dwelling schedule sheet was required for every sheet of the population schedule. The sheet numbers of the occupied-dwelling schedules were to correspond to the sheet number of the population schedule containing the line on which the head of the household was enumerated. In cases where there was more than one sheet of the occupied-dwelling schedule for one sheet of the population schedule, the extra dwelling schedule sheets were lettered. Any renumbering done by the clerks required the changing of the count slip in the portfolio.

## Population and Housing Hand Count

Operation 4 of processing the schedule data involved the verification of the matching of population and housing schedules and the hand count of population and housing. This operation consisted of three successive steps beginning with verification and two hand counts.

In the verification procedure, the clerks were required to keep a tally of the number of lines on the population schedule and the number of sections on occupied-dwelling and vacant-dwelling schedules upon which corrections were necessary. With the completion of the verification step of the matching operation, the clerks filled out a "Verifier's Report of Errors Found" (Form P-305) based upon the tally of required corrections.

The clerks checked the heading information to insure that it agreed with the Geographer's description and to see that the instructions for Operation 3 had been followed. The auxiliary forms and any entries made on the schecules in Operation

3 were then inspected. This inspection was designed to insure that information had been transferred when necessary and that there were no duplicate entries. The clerks examined the population schedules to be sure that an infant card had been filled out for every line with an entry of ${ }^{\prime} 0 / 12$ to $3 / 12^{\prime \prime}$ in column 11. Clerks were instructed to supply missing infant cards. If an infant card was determined to have been inappropriately cancelled in the previous operation, the clerks "reinstated" the card; and if an infant card could not be found for an entry for which it was required, the clerk created a new infant card based upon the information on the population schedule. The clerks were instructed to pay particular attention to the date of birth listed on the population schedule.

The clerks examined the entries for head of household on the population schedule to see that they corresponded with similar entries on the occupied-dwelling schedule. This procedure was performed for both sides of all population and occupied-dwelling schedules in the portfolio. Missing information or discrepancies between the two schedules were corrected. The clerks also checked the sheet numbers of both schedules.

The second step in Operation 4 was the hand count of population. The clerks first began this step by filling out "Population Count Slips" (Form P-113a), using the heading information on sheet 1 of the population schedule. One slip was used for each enumeration district. The clerks then placed the population schedules in numerical order and examined each schedule to be sure that only one name appeared on each line.

Once the schedules had been ordered, the clerks began to inspect names on the "supplementary lines," those lines at the bottom of the schedule that were used to record information in columns 35-50.[1] If the name appearing in column 35 did not match the name on the corresponding main line, the portiolio was referred to the section chief along with a "Problem Referral Slip" (Form P-365) indicating the location and nature of the problem. If the enumerator had omitted a name and the supplementary information, the clerk entered the name in column 35 and left columns 36-50 blank. However, if it appeared that the enumerator had omitted all or nearly all of the supplementary lines, the portfolio was also referred to the section chief with an attached problem referral slip. Clerks were instructed not to make a point of inspecting the supplementary lines for consistency, but if they did notice inconsistencies they were to refer them to the section chief.

After inspecting the supplementary lines, the clerks were required to examine the main lines on both sides of the schedule, line by line, and to cancel line numbers on the left side of the schedule on any line not used to enumerate a person. Thus, any blank lines and lines used by the enumerator for information or explanation were cancelled. When a main line number marked "Suppl. Ques." was cancelled, the corresponding supplementary line number was also cancelled. In addition, supplementany line numbers on blank sides of the schedules were
[1] These supplementary lines corresponded to two of the "main lines" on the top part of the schedule which were used to record information for columns 1-34. These two main line were marked "Suppl. Ques.." and comprised a $5 \%$ sample of the population.
cancelled although the main lines on such sides were not. Supplementary lines were only cancelled under these two circumstances.

If the enumerator had cancelled a name or otherwise indicated that a person should not have been enumerated, the clerks cancelled the corresponding line number. Main lines on which the person was listed as "Ab." in column 8 and as 'Inst." in column 21 were also cancelled. If, in such cases, the person cancelled was listed as the "Head,' the information in columns 3-6 was transferred to the next person in the household, who then was marked as "Head." In this circumstance, the entry on the occupied-dwelling schedule for population line number of the "Head" was also changed. Any other questions about cancellation were referred to the section chief.

The clerks next recorded on the population count slip the number of uncancelled main lines and the number of cancelled main lines on each sheet. All blank main lines of a schedule were counted as cancelled lines. The correct sum of both entries for each sheet was always 80. After the count of main lines was complete, the clerk counted persons enumerated on supplementary lines. These counts were also entered on the population count slip. However, there was only one entry each for the uncancelled supplementary lines and for the cancelled supplementary lines. The total of these two was equal to twice the number of sheets of population schedules in the portfolio.

The final step of Operation 4 was the hand count of housing. In a manner similar to the procedures for the hand count of population, the clerks first inspected the occupied-dwelling and vacant-dwelling schedules and cancelled each section not used by the enumerator. Some of these sections had been cancelled in Operation 3. Once all appropriate sections had been cancelled, the clerks began to record on the "Housing Count Slip" (Form HC-11) the number of occupied units and the number of blanks listed on each sheet of the occupied-dwelling schedule. Next, the clerks entered the number of uncancelled vacant units and the number of blanks from the vacant-dwelling schedule on the housing count slip. Any problems were referred to the section chief for handling. With this step, the work in Operation 4 was completed. The clerks were instructed to place the materials back into the portfolio in the same order in which they had been received and to attach both count slips to the outside of the portfolio, enter the required information on the portfolio memorandum, and return the portfolio to the section chief.

Transcription of the Preliminary Sample Data
Operation 5 consisted of both the verification of the hand count done in Operation 4 and the transcription of preliminary sample data. Two different types of clerks were used in Operation 5. First, comparison clerks compared the hand counts made in Operation 4 with the hand counts made in the field, corrected any discrepancies between the field and office counts, totalled the results of the office hand count, and then transcribed the preliminary sample employment data. Following these steps, verification clerks verified certain hand count totals and the transcription of the preliminary sample employment data.

Comparison clerks were fumished with portfolios containing population count slips from the field (Form P-113) and office (Form P-113a) and housing count slips from the field (Form HC-10) and office (Form HC-11). The comparison clerks
first had to verify the heading information which the clerks in Operation 4 had filled in on the office population count slip. They then verified the accuracy of the counts on these slips and totalled the results. The office population count slip contained counts of the number of entries on main lines (i.e., the number of persons enumerated), the number of blank and cancelled main lines, and the number of persons for whom the supplementary information was or should have been obtained. These counts were for an entire enumeration district.

In verifying the accuracy of these counts, the comparison clerks were required to inspect each sheet of the population schedule to. see that the clerks in Operation 4 had made cancellations only where required. If the comparison clerks found that an Operation 4 clerk had failed to make necessary cancellations of main lines, they were to make the cancellations. Similarly, if the comparison clerks found main lines cancelled incorrectly, they were to circle the line number. The office population count slip was corrected in accordance with any changes made by the comparison clerks.

The comparison clerks then added the number of entries and the number of blanks on the office count slip. Each line which did not total 80 was marked with an "X." Then, for each sheet of the population schedule, the mumber of entries recorded on the office count slip was compared with the number of entries on the field count slip. Whenever these two totals did not agree, the comparison clerks placed an ' $X$ ' in the sheet column of the office count slip. The comparison clerks recounted the number of entries and the number of blanks on sheets for which they had marked an ' $X$ ' and corrected either the field or office count slip. The number of entries on the office count slip was totaled and posted on the slip and the number of blanks on the office count slip was totaled and posted. The sum of these totals was required to equal 80 times the number of sheets of population schedule used. If it did not, the comparison c!erks were required to repeat the procedure. Additionally, the totals on the field count slip were required to equal the totals on the office count slip. When the two sums agreed, the figure was posted at the bottom of the office population count slip and on the portfolio memorandum.

Verification of the count of supplementary lines involved examining the name in column 35 to see that it was identical with the name in column 7 for the corresponding main line marked "Suppl. Ques." If there was no correspondence, the portfolio was referred to the section chief with a problem referral slip attached. In addition, supplementary lines were checked to see that they were cancelled when the corresponding main line was cancelled. If such lines had not been cancelled, the comparison clerks cancelled them. The clerks also checked to be sure that the only supplementary lines cancelled were those for which the corresponding main line had been cancelled. If a supplementary line had been inappropriately cancelled, the comparison clesks circled it to restore it. Next, the comparison clerks counted the number of uncancelled supplementary lines to see if they agreed with the total on the office count slip.

The comparison clerks were required to verify the accuracy of the hand count of housing and total the results. The clerks inspected each line of the office housing count slip to make sure that the sum of occupied units and blanks or the sum of vacant units and blanks totaled 30. The clerks then compared each sheet of the office count slip with the corresponding sheet of the field count slip to see that the number of occupied units on each agreed. Whenever the two numbers did
not agree, the clerks recounted the number of occupied units and the number of blank or cancelled sections on the office count slip.

The clerks also verified the number of vacant units for sale or rent or not reported, the number of units held for absent households or occupied by nonresidents, and the number of blanks on each of the vacant-dwelling schedules, and made necessary corrections on either count slip. The numbers on the office count slip were added and posted on the office slip. The comparison clerks then totaled the number of occupied units on the office count slip and posted the number on the slip. Similarly, the number of blanks appearing on the occupieddwelling schedule was totaled and posted on the office count slip. Any changes made on the field count slips were checked to see that they corresponded to the office count slips and when they did not agree, the clerks made the necessary corrections. When the sums agreed, the clerks initialed the count slips and returned them to the portfolio. The comparison clerks also filled out the verifier's report of errors found, entering the total population and the number of errors which the clerk had corrected on both the office count slips--housing and population.

Once the comparison clerks had completed the verification of the hand count they began the transcription of the preliminary sample employment data. This step involved transcribing certain information for each person enumerated from a population schedule main line marked 'Suppl. Ques." onto a "Preliminary Sample Transcription Sheet ( Form P-316). This transcription sheet contained 32 lines, with each line containing four sections--one section for each person enumerated on a line marked 'Suppl. Ques." on each sheet of the population schedule.

After making sure that the population schedules in the portfolio were in numerical order, the clerks entered the state, county, E.D. number, and, when applicable, the name of the incorporated place on the transcription sheet. The clerks entered in the first column of the transcription sheet the sheet number of the population schedule. In column $A$ of the transciption sheet, a '1" was entered if the person for whom the information was being transcribed lived on a farm, and a " 0 " if that person did not live in a farm. If the main line marked "Suppl. Ques." had been cancelled, an ' $X$ " was entered in column $A$ and the remaining columns in the section were left blank. When all the main lines so marked were left blank it was unnecessary to fill a line on the preliminary sample transcription sheet for that schedule.

The entry in column B of the transcription sheet was " 1 " if the entry for sex in column 9 on the schedule was ' $M$,' and '2" if the entry was ' $F$.' When column 9 was blank, the comparison clerk made a determination of the sex of the person based upon the name in column 7 and the relationship in column 8, and then entered the proper code.

Column $C$ of the transcription sheet was coded for the race of the person. A ' 1 " was entered when column 10 of the schedule had an entry of " $W$ ' and a "2" was entered when column 10 was other than "W." If column 10 was blank, the comparison clerk determined the race of the person by reference to the entry in column 10 for other persons in the household. When this information was not available, the entry for column $C$ was made on the basis of the race of the head of the preceding household on the schedule.

The comparison clerks transcribed the age entry in column 11 of the schedule to column D of the transcription sheet, except when it was over 100 or a fraction. For any age over 99, an entry of ${ }^{\prime 9} 99^{\circ}$ was made in column $D$. A fractional age in column 11 on the schedule was transcribed as "00." When an "Un" (for Unknown) appeared in column 11, the entry transcribed was "W."

Entries in column $E$ of the transcription sheet were for work status and were based upon the entries in schedule columns 21-25, and upon schedule column 28 when a "yes" had been entered in column 23. The clerks first inspected the initial sheets of the population schedules to determine whether there were errors that might affect codes assigned on the transcription sheet. Such errors included (1) a "yes" in columns 21-24 for persons who were housewives working in their own homes (identified by an entry of ' H " in column 25 or 'Housework, own horne," etc. in columns 28-30). In those cases the "yes" entries in columns 21-24 were cancelled; (2) entries of "no" or "blank" in all columns 21-24 for a person with an entry in columns 26 or $27,28,29$, and 30 ; (3) entries of "yes" in more than one of columns 21-24 or of "yes" in one of these columns along with an entry of "Ot." in column 25; (4) an entry of "yes" in columns 29 or 24 along with WPA or NYA in columns 28, 29, or 30; (5) entries other than "Inst." for inmates of an institution; and (6) blanks or entries of "Inst." for persons in institutions other than certain types. If the comparison clerks found errors of types (2) or (6), they referred the portfolio to their section chief.

The coding scheme for column E can be summarized as follows:
Schedule Entries Column E Code
If there was a "Yes" in columns 21-24:
If "Yes" in column 21 ..... 1
If "Yes" in column 22 ..... 2
If 'Yes" in columns 21 and 22 ..... 2
If "Yes" in column 23 and not new worker in column 28 ..... 3
If "Yes" in column 23 and new worker in column 28 ..... 0
If 'Yes' in column 24 ..... 4
If "Inst." in column 21 ..... 9
If there was no "Yes' in columns 21-24 and
no "Inst." in column 21:
If ' H ' in colurnn 25 ..... 5
If ' $S$ ' in column 25 ..... 6
If ' $U$ " in column 25 ..... 7
If ${ }^{\circ} \mathrm{Ot}$ ' in column 25 ..... 8
If no "H, " S, " " U , " or " Ot , " in column 25 and:
If ${ }^{19}$ or more in column 261
If ' 1 ' or more in column 27 ..... 3
If '1' or more in both columns 26 and 27 ..... blank
If blank in both column 26 and 27 ..... blank

When there were entries in columns 21-25 for persons whose age had been recorded as 13 years or less, the clerks were instructed to leave column $E$ blank.

When the comparison clerks had completed preparation of the preliminary transcription sheet they retumed all materials to the portfolio, entered the required information on the portfolio memorandurm, clipped the count slips and transcription sheets to the inside of the portfolio, and returned the portfolio to the section chief.

In the final step of Operation 5, verification clerks examined the work done by the comparison clerks. The verification clerks first compared the figures entered for total population on the office population count slip with those entered on the field population count slip. The verification clerks also had to verify the total listed on the office housing count slip and make any necessary corrections. Corrections were also made on the field housing count slip when it did not agree with the verified count.

The verification clerks verified the entries on the preliminary sample transcription sheet, and changed any incorrect entries on the transcription sheets. They filled out a line on the verifier's report of errors found when errors were found. Following this, they replaced the materials in the portfolio, entered the information required on the portfolio memorandum, and returned the portfolio to the section chief.

Separation of Population and Housing Schedules and Other Materials
Operation 6 was performed by separation clerks and numbering clerks. The separation clerks were responsible for removing the housing schedules from the population portfolios and preparing housing portfolios; removing the infant cards from the population portfolios and preparing them for transmission to the Division of Vital Statistics; removing auxiliary and blank schedules from the population portfolios and preparing them for filing, and removal and routing of count slips and transcription sheets; inserting the "Confidential Reports on Wage or Salary Incorne, 1939' (Form P-16) in the population portfolios; and inserting on certain population portfolio memoranda notations identifying the E.D. as either in need of examination for location of industrial homeworkers or as "urban-1930." The numbering clerks were responsible for entering the portfolio number on the housing portfolios and verifying the separation clerks' entries on the housing portfolio memoranda and "Separation Sheets" (Form HC-13).

The population portfolios were arranged in order by E.D. number. The clerks checked to see that the portfolios were all from the same county or city. The occupied-dwelling and vacant-dwelling schedules for four consecutive E.D.'s were removed and placed in a housing portfolio. On a blank. separation sheet the separation clerks entered the state and E.D. number of the first E.D. in the group. The clerks transcribed information from the office housing count slip onto the separation sheet regarding the total cards to be punched (the sum of the number of occupied units, vacant units for sale or rent, and vacant units held for absent households or occupied by nonresidents). This information was entered in a column designated "Total number of dwelling units." The occupied-dwelling and vacant-dwelling schedules were then removed from the population portfolio and placed with the separation sheet.

The envelope containing the infant cards was then removed from the population portfolio and was set aside for transmittal to the Division of Vital Statistics.

All count slips were removed from the portfolio and placed in a manila envelope. Count slips for E.D.'s in the county or city were also placed in the envelope. The state name and the county symbol were entered on the outside of this envelope.

The separation clerks then removed the preliminary sample transcription sheet. The name of the state and county, or city, was entered on the "Jacket for Preliminary Sample Transcription Sheets: (Form P-317). All preliminary sample transcription sheets for a county or city were placed in one jacket, except when the county or city had more than 50 E.D.'s. In such cases, more than one jacket was used and each jacket was marked with the E.D. numbers it contained.

Also removed from the population portfolio were individual census forms, preliminary population schedules, nonresident schedules, absent household schedules, preliminary housing schedules, and any blank population and dwelling schedules. The forms were fastened together and set aside for transmittal to the files.

The housing portfolios prepared by the separation clerks, the population portfolios, the central control card, the count slips for a county or city of 100,000 or more, and the filled jacket for preliminary sample transcription sheets were then assigned to a numbering clerk.

The numbering clerks then compared for each E.D. the figures entered for total number of dwelling units on the portfolio memorandum with the "Total cards to be punched" indicated on the office housing count slip. The clerks then totaled the "total units" of each E.D. and posted this sum on the portfolio memorandum. The entries on the jacket for preliminary sample transcription sheets were also verified. They also inspected each population portfolio memorandum to be certain that notations of "Industrial Homeworkers" were made or omitted according to the entry on the control card. They then returned the housing and population portfolios, the count slips, the filled jacket for preliminary sample transcription sheets, and the central control card to the control desk.

## Control Room Operations

An important part of the Bureau's processing operations was the maintenance of the production records. This function was performed in Operation A. As clerks in the processing operations completed work on a portfolio assigned to them, they entered the following information onto the portfolio memorandum: their section number and name, the hours worked on that portfolio, and the date on which the work on that portfolio was completed. This information was then posted by the section chief to other production records.

The section chiefs in each process kept records of the work in their sections on the "Section Chief's Daily Production Record" (Form P-304). The form contained information indicating the state and process on which work was underway, the section number, and the date. The section chief entered the name of each clerk employed in the section on that date and the E.D. numbers of all E.D.'s assigned to each clerk. When a clerk completed work on an E.D. and returned it to the section chief, the section chief noted on the daily production record form the completion of the E.D., the population of the E.D., and the hours worked in processing the E.D. At the end of each day, the section chief prepared a new
daily production record for the next day, entering the names of the clerks and listing the E.D.'s assigned to each clerk. The original copy of each day's form was signed and delivered to the production records chief. A duplicate copy of each day's form was retained by the section chief, and provided the information for the posting of 'Individual Production Records' (Form P-308).

The section chief or assistant section chief maintained the individual production records for all clerks employed in a given section. When clerks were transferred from one section to another, their production records were also transferred. The information shown on the section chief's daily production report was transferred to the individual production record. The information transferred included the date, operation, state, E.D. number, E.D. population, and the hours worked. Additionally, data were entered from the "Verifier's Report of Errors Found" (Form $\mathrm{P}-305$ ). These data included the verified population and the numbers of errors reported.

The central production record section maintained for each operations section a -Section Production Summary' (Form P-309) as a continuous record of the work of the section during the entire period for which the section was engaged on a specific operation. Each day, the clerks in the central record section entered on one line of this record the total work completed in a section on that day. These totals were transcribed from the section chief's daily production records at the close of each day.

The production record section also prepared the 'Daily Production Summary by Operation: (Form P-311). From the section production summary, the clerks added and posted to the daily summary by operation the number of E.D.'s and the population processed that day. This summary included calculations of the clerk days worked each day and cumulatively for each operation.

Finally, the central record section maintained for each state a -State Production Summary' (Form P-310). The clerks in the central record section daily sorted the section chief's production records by state and operation and then summarized this sort to obtain state totals for each operation. These totals were posted to the state production summary. At weekly intervals, totals for the previous week were added to provide a weekly measure of production, and these weekly totals were added to the cumulative totals. These totals were then used in the preparation of the "Weekly Production Report by State and Operation' (Form P-312).

In addition to the maintenance of production records on employees and sections, records were also maintained in the Central Control Room in order to permit the location of any portfolio and provide a record of the progress of work. This record maintenance operation was designated Operation B. The unit for recording purposes was the population portfolio (which included housing schedules through Operation 6; after Operation 6, similar controls were established for the housing portfolios). The basic control record was the "Central Control Card" (Form $\mathrm{P}-301$ ). Before the portfolios were received from the field, a series of cards had been prepared for each county, and for each city of 100,000 or more. As the portfolios were received the date of receipt was posted on the card for the county, and as portfolios were routed to an operation the date and section number were posted on the card under the name of the operation.

The chief of the control room used a central peg board as the principal guide in directing the flow of work through the various operations. This board contained a series of individual pegs, each representing an operation for a given state. Discs were hung on the pegs to show the number of portfolios being processed in each operation for each state at a given time. These discs were moved to correspond with the actual movement of the portfolios.

Once the population and housing schedules had been received and examined in Operation 2, the portfolios were forwarded to. the control room before going to Operation 3. Transfers of each group of portfolios from one operation to another were recorded on a 'Routing Slip' (Form P-303) indicating the state, county (or city of 100,000 or more), date, a listing of the E.D. numbers of the portfolios transferred, the section and process from and to which the portfolios were $t$ ransferred, and the signatures of those accountable for each transfer.

The portfolios to be transferred from the control room to a section in Operation 3 were designated by the chief of the control room and routing slips were prepared by the routing clerk. The routing clerk entered the state, county (or city of 100,000 or more), and the date on the routing slip and listed the contents of the portfolio in numerical order. A control room messenger then took the portfolios to the control clerk in the wing where the matching process (Operation 3) was being carried out. After Operation 3, whenever portfolios were ready for transfer to the next process, the assistant section chief filled out the routing slips as the routing clerk had originally done. The rest of the delivery process was the same as that described above and was maintained throughout the remaining processing operations.

The portfolio movement indicated by the routing slips was recorded on the peg board by moving the discs corresponding to the portfolios to the peg representing the operation to which the portfolios had been delivered. The E.D.'s listed on the routing slips were also recorded as transferred on the central control card for the county by indicating the date and section number on the control card under the column heading of the process to which the portfolios were sent. Once this entry had been made on the control card, the routing slip was stamped and sent to the permanent file of routing slips, maintained by state and date.

## CODING OPERATIONS

In the second phase of the processing and tabulation operations, clerks coded and verified the coding of both the population and housing schedules. The coding operations were essential steps in which non-numerical entries were translated into numerical codes that could be tabulated by mechanical equipment. Additionally, certain items were edited for consistency during the coding operations. Once the coding of schedules was completed, the codes which had been entered were subjected to verification in order to ensure accuracy.

There were four basic coding and verification operations. First, the population schedules were coded. Second, these schedules were verified in a separate operation. Third, occupation, industry, and class of worker codes were determined and verified in the same operation. Finally, the housing schedules were coded and verified in the same operation. Also, included in this section is a discussion of the allocation of values for unknown ages, an operation which occurred after the general population coding.

## General Population Coding

The general coding of the population schedules was performed by clerks in Operation 7. These clerks were provided with specific instructions on how to make cancellations and corrections on the population schedules (see Appendix 11). Complete cancellation of an item on the schedules was indicated by drawing a horizontal line through the entire column in which the entry appeared. Corrections were also made by drawing a horizontal line; however, the line was only through the entry. The correct entry was then made to the side or above the original entry, in the same column space. The original entries had been made in black and the corrections were made in red.

Special lettered columns were provided on the population schedule for most of the alphabetic codes which had to be translated into numeric codes. There were occasional columns for which a numeric code had to be entered in the same column as the enumerator's entry. For example, an entry of " $M$ " in column 12 for marital status was occasionally coded ${ }^{\prime} 7 .^{\text {. }}$ Such coding was handled as a correction: a horizontal line was drawn through the original entry and the correct code was written in the same column space.

The coding in Operation 7 did not include coding of columns 1-5, 7, 28-30, 34-35, or 45-50. In addition, no entries were made in columns $F$, $J$, or $U$. Occasionally, problem referral slips were attached to the portfolio. These contained additional instructions about which columns were not to be coded.

Before the actual editing and coding, the clerks checked to see that the sheet numbers on each schedule were arranged in consecutive order. In addition, the confidential wage or salary income forms were arranged in sheet and line mumber order. The information on these forms was then transferred to the appropriate person's line on the population schedule. Column 32 contained information about the "amount of wages or salary received in 1939." and column 33 reported whether the person received 'income of $\$ 50$ or more from sources other than money wages or salary."

The first entry that required coding was the question on farm residence in column 6. When a "yes" to the question of farm residence had been entered for the head of household, the coders entered a " 1 " for all other members of the household. When the response was "no," blanks were left for all other household members. The coding clerks were instructed to make sure that they checked the person entries on sheets 61 and over--the sheets for persons enumerated out of order--to see that column 6 had an appropriate code.

Column 8 contained the relation of the person to the head of the household. An entry in this column was required for every person. If the column was blank, the coders were required to determine the probable entry based upon the name appearing in column 7, the sex in column 9, the age in column 11, and the marital status in column 12. The codes assigned for the alphabetic entries are shown in Appendix 11 (Operation 7: Instructions for Ceneral Population Coding), paragraph 19 and its amendments. The numeric codes for the relation question were recorded in colurm $A$ on the population schedule.

When the person enumerated as the head of a household was female and a husband was also listed, the clerks assigned the head code in column $A$ to the husband,
and coded the female as wife of head. In such cases, the enumerator's entries in column 8 were not changed. The change was made only in column A.

Special relation-to-head codes were given for institutions and hotels. The person most likely to have been the head of the household (manager, superintendent, principal, etc.) was given a code of " $V$ " and all other persons in the institution or hotel were coded '9." The exception to this rule was when an enumerator had listed officers or other employees and their families who lived in separate quarters as separate households. In these cases, the clerks coded the household in the same manner as households not living on institutional grounds.

The coding scheme also distinguished between employees who performed personal services for the household and those employees whose labors contributed to the family's income. The ertries in column 8 were checked for consistency with the employment entries in columns 21-25 and 28-29. Relatives of the employees were given a separate code.

Column 9 recorded the sex of the person enumerated. If this column was blank the clerk made determination of the sex of the person based upon the name and relation entries. Obvious errors were also corrected. Column 10 contained the entry for the race of the person enumerated. When this column was blank, the coding clerk entered the race of the other persons in the household. When the race entries for entire household were blank, the clerk entered the race of the head of the preceding household. No coding was required for entries of ' $W$ ' and "Neg." Other entries were coded according to the list given in paragraph 32, Appendix II, as amended.

An entry for the age of the person enumerated appeared in column 11 of the schedule. When column 11 was left blank or illegible, or contained an entry of 'Un,' the clerks were required to complete Form P-306, 'Persons of Unknown Age." This form was then secured to the outside of the portfolio at the time the portfolio was returned to the control desk. The codes for these ages were assigned in another operation (see the description below). The clerks were also instructed to pay close attention to the enumerator's entries in column 11 for children under one year of age. These numbers were listed as fractions and the clerks were instructed to make sure that the entire fraction appeared within the column space. When the fraction extended beyond the column space, the clerks cancelled the enumerator entry and entered the codes shown in paragraph 34, Appendix 11 .

Column 12 contained the entry for marital status. An entry was required for every person. . If no entry existed, the clerks provided an entry based upon other information on the schedule--in particular, the relation to head and age entries. When it was impossible to determine a marital status, a code of "S" or "Single" was entered unless information on the schedule indicated that the person was a parent. When such a relation was indicated, a "Wd," for widowed, was entered if the person was age 55 or over and a code of " 7 ," indicating "married, spouse not present, " was entered if the person was under age 55. The coding clerks were also instructed to cancel the " $M$ " in column 12 for any person whose husband or wife was not enumerated as a member of the household. The cancelled entries were replaced with an entry of "7."

Education information appeared in columns 13 and 14. The entry in column 13 was either a 'yes' or 'no' to the question of current school attendance. Enumerator entries were accepted without change. If column 13 was blank, the coding clerk was instructed to first check the entry in column 25 for an ' S ," indicating student. If an ' $S$ ' occurred in column 25, an entry of 'yes' was made in column 13 when the person was within the compulsory school ages of the state in which he or she resided. The compulsory school ages used are shown on the last page of Appendix 11. The highest grade of school completed was shown in column 14. These entries were translated into numeric codes and entered in column $B$ on the population schedule. The numeric entries for column $B$ are shown in Appendix 11, paragraph 38, as amended.

The place of birth entered in column 15 of the population schedule was coded in column C of the schedule according to the code schemes for states and countries listed at the end of Appendix 11. A code symbol in column C was required for every person. If an entry for place of birth had been omitted, the clerk attempted to determine it from the entries for other members of the household. In such cases, the clerk did not write the name of the place in column 15, but simply entered the code in column C. If column 15 was blank and a code could not be determined from the entries of the other household members, the clerk entered a code for unknown. The codes used for persons whose place of birth could not be determined are shown in Appendix 11, paragraphs 40-43, as amended.

Column 16 of the population schedule contained entries on the citizenship status of foreign-born persons. Appropriate codes included 'NA,' 'PA,' and AL.' [2] Any entries of "Am. Cit.' were cancelled by the clerks, as were entries for persons born in the United States and its territories and possessions. The clerks were instructed to attempt to supply missing entries for column 16 based upon the rules described in paragraph 45, Appendix 11.

Information on place of residence on April 1, 1935, was recorded in columns 17-20 of the schedule. Column 17 contained the city, town, or village, if this place had more than 2,000 inhabitants. If the population was under 2,000 , an ' $R$ ' was entered. If the person was living in the same house in 1935 as at the time of enumeration, an entry of 'same house' was made in column 17. For persons living in the same city or town but in a different house, an entry of 'same place' was made in column 17. In both these instances, columns 18-20 were left blank. Column 18 contained the entry for the county of residence in 1935. Similarly, column 19 contained the entry for the state, territory, or foreign country of residence in 1935. Column 20 indicated whether or not the place of residence was on a farm.

The coding clerks received detailed instructions for determining four-digit migration codes based upon the information in columns 17-20. These instructions are shown in Appendix 11, paragraphs 47-73, as amended. The migration codes indicated those persons who were living in the same house or same place, as described above. For those persons who were not living in the same house or place, the codes indicated the state, subregion of the state, and the type of place: rural nonfarm, rural farm, rural--farm residence unknown, urban place of 2,500 to 10,000 , urban place of 10,000 to 25,000 , urban place 25,000 to
[2] The meaning of these codes is discussed in Chapter 3, pp. 35-36.

100,000 , and city of 100,000 or more. The four-digit migration codes were entered in column $D$ on the population schedule. Codes were entered for all persons except children under five.

Problems with enumerator entries for the 1935 residence question led the Bureau to use special migration editors on both the day and night shifts. The problems occurred when enumerators did not adequately distinguish between the entries for "same place," 'same house," and "same farm.' In the course of editing and coding enumerator entries, regular coding clerks were instructed to refer problem portfolios to the special migration editors. Portfolios from 12,341 enumeration districts received such special editing.[3]

The entries in columns 21-25 pertaining to the person's work status during the week of March 24-30, 1940, were coded in column E of the population schedule. The coding scheme for column $\mathbf{E}$ was the same as that used to code column $\mathbf{E}$ of the preliminary sample transcription sheet. This scheme is detailed above in the description of Operation 5 (see above).

The coding clerks also inspected entries in column 26, the number of hours worked during the week of March 24-30. When 'Inst.' had been entered in column 24, the clerks cancelled any entries in columns 26 and 27 and entered a code in column 26 to indicate the type of institution. The institution codes are presented in paragraph 77, Appendix 11. The information on the type of institution was to have been recorded by the enumerator on the schedule heading. Except in cases where institution codes had been entered, entries were cancelled in column 26 for any persons other than those who had received a code in column E of '1.' When column 26 was blank the coders left it blank, and when the entry was 100 or over, it was cancelled and '99' (the highest number tabulated) was entered in column 26.

The coding clerks were also instructed to cancel entries in column 27 except for persons who had been coded as ${ }^{\prime} 2^{\prime \prime}$ or ${ }^{\prime} 3^{\prime \prime}$ in column $E$. The clerks also cancelled entries of ${ }^{\prime} 100^{\circ}$ or more and replaced them with the codes described in paragraph 79, Appendix II. Columns 28-30 and $F$ were not coded in this operation (see the description of Operation 9, below). In column 31, weeks worked in 1939, all entries of more than 52 were cancelled and replaced with -52.

When column 32, money wages or salary received in 1939, contained a blank, the coding clerks were instructed to leave the column blank, except for those cases for which the entry in column 31 was ${ }^{\prime} 0 .{ }^{\circ}$ In such cases, the clerks entered a ' 0 ' in column 32. The clerks were also instructed to cancel any entry of 6,000 or over in column 32 and write in ${ }^{\circ} 5,000+$. $^{\text {. Any amounts entered in column } 33}$ for other income were cancelled and replaced with a '1" for 'yes," when the amount was $\$ 50$ or more, or a 'no,' when the amount was under $\$ 50$. Blanks in column 33 were left as such. No coding was done in column 34.

[^1]All uncancelled supplementary lines were coded, even when columns 35-50 were completely blank. When columns 35-50 were completely blank or cancelled, a code of " 8 " was entered in column 1 on the supplementary line of the schedule. However, no coding was done in columns $35,45-47, J, 48-50, U$, and $Z$, in this operation.

The places of birth of the person's father and mother appearing in columns 36 and 37 were coded in column $C$ on the schedule. Column $G$ was left blank when the entries in columns 36 and 37 indicated that both parents were born in the U.S., its territories, possessions, at sea, or in a place that could not be determined. When the person's father was born in a foreign country, the code for the country in column 36 was entered in column $C$, and the mother's place of birth was disregarded. When the father was born in the U.S., its territories, possessions, at sea, or in a place that could not be determined, but the person's mother was born in a foreign country, the code for the country given in column 37 was entered in column C. The codes used to code the foreign countries are given at the end of Appendix 11. The entry in column 38 for mother tongue was coded in column $H$ according to the codes given at the end of Appendix 11. When the language appearing in column 38 was "English, column $H$ was left blank.

The entries in columns 39-41 pertaining to veterans' information were coded in column 1. The codes used in column I are given in paragraphs 89-90, Appendix 11. Similarly, the codes for the social security information appearing on the schedule in columns 42-44 are given in Appendix 11, paragraph 91, as amended.

A code was entered in column $K$ on the supplementary line for every person enumerated on that line. This code was based upon the entry appearing in column 4 for the head of the household in which the person was a member. When an " $O$ " appeared in column 4 for the head of the household, it meant that the home was owned and the code entered in column $K$ was ' 0. . When an ' $R$ ', for rented, appeared in column 4, a code of " ${ }^{\prime \prime}$ " was entered in column K. Finally, when the person enumerated on the supplementary line was a lodger, servant, hired hand, etc., or a member of an institutional household, the code entered in column $K$ was a ${ }^{\circ} \mathbf{2 .}^{\circ}$

An entry was made in column $L$ for each person enumerated on a supplementary line for whom an ' 0 ' or ' 1 ' had been entered in column $K$. This code indicated the value of an owned tome or the monthly rental of a rented home. The value should have appeared in column 5 on the line for the head of the household. However, the coding clerks were instructed to use the value which appeared in column 5 for any related member of the household. The codes used in column $L$ are given in paragraph 95, Appendix 11.

The coding clerks entered in column $M$ a code corresponding to a crossclassification of the entries in column 6, farm residence, and column 9, sex. Blanks in column 6 were treated as "non-farm." Column $M$ was coded for all persons and the codes are summarized in paragraphs 97-98, Appendix II.

The code entered in Column $N$ on the schedule was a race and nativity code constructed on the basis of a combination of entries for the person in columns 10, C, 36, and 37. These codes are listed in paragraph 99, Appendix 11 and essentially distinguished among Whites by place of birth of the person and his or her parents, and distinguished Negroes and other races.

The age or age code entered in column 11 was transcribed by the clerk in column O. When the entry in colurnn 11 was blank or "Un," the clerk left column 0 blank. Similarly, column $P$ was coded according to the marital status of the person entered in column 12 of the schedule. The codes for column $O$ are given in paragraph 101 in Appendix 11. The code appearing in column $B$ for the person was transcribed in column $Q$. When column $B$ was blank, column $Q$ was left blank. The citizenship status of the person entered in column 16 was coded in column $R$ on the schedule. These codes are shown in paragraph 103, Appendix 11.

The code appearing in column $E$ was transcribed to column $S$. When column $E$ contained a blank space, column $S$ was left blank. When the entry in column $S$ was 1, 2, or 3, column $T$ was coded on the basis of the appropriate entry or code from column 26 or 27. These codes for hours worked or duration of unemployment are given in paragraph 105, Appendix 11. A code was entered in column $V$ for weeks worked based upon the entry in column 31 of the schedule. These codes are shown in paragraph 107, Appendix 11.

The clerks coded column $W$ based upon the entry for wage and salary income that appeared in column 32. When column 32 was blank, column $W$ was left blank. When the entry in column 32 was 1,000 or more, the first two digits of the entry were transcribed in column $W$. When the entry in column 32 was between 100 and 999, the first digit, preceded by a zero, was transcribed in column W. If the entry in column 32 was between 1 and 99, the clerks entered a code of " $O V^{\prime}$ in column $W$; and when $a^{\prime} O^{\prime}$ appeared in column 32, a code of " $00^{\prime}$ was entered in column $W$. In column $X$, the entry in column 33 for other income was coded. These codes are shown in paragraph 170, Appendix II. Finally, the clerks transcribed the relationship code in column $A$ to colurm $Y$.

Once the coding had been completed for all schedules in a portfolio, the clerks made the proper notations on the portfolio memorandum indicating that the process had been completed, and retumed the portfolio to the control desk.

## Allocation of Unknown Ages

For the 1940 Census of Population, the Bureau developed and implemented a method for eliminating unknown ages during the processing of returns [4]. Although in the four censuses from 1910 to 1940 the percentage of unknown ages had only ranged from a low of 0.08 percent (1930) to a high of 0.18 percent (1910), the Bureau felt that both the use of age distributions in demographic research and the expense of the space required to print and tabulate unknown ages justified the development of an age allocation routine. This routine was developed under the direction of W. Edwards Deming, the Bureau's mathematical adviser, and Leon Ceoffrey, who was responsible for the details and execution of the method.

Prior to its use in the processing of schedules in 1940, the method was tested in two experimental trials. The first test was made during the initial development of the allocation method and was tried on 2,000 randomly selected entries from the
[4] For a more detailed account of the procedure for the allocation of unknown ages, see U.S. Department of Commerce, Bureau of the Census, The Elimination of Unknown Ages in the 1940 Census, prepared by W. Edwards Deming, January, 1942.

1939 Special Census (pretest) of St. Joseph and Marshall Counties, Indiana. The second test was carried out using 2,000 comparisons from the 1940 schedules. In both tests, the recorded age was covered and the age estimator was used to assign an age based upon the available information on the schedule. In the first test, 43.6 percent of the 2,000 ages were estimated correctly or within one year, while in the second test 46.2 percent were estimated correctly or within one year. Some 20.5 percent of the estimated ages in the first test were in error by more than five years, while the corresponding figure for the second test was 17.8 percent.

The Bureau felt that results of these tests indicated that the methodology was satisfactory, although it was cautious about the extent to which the results could be generalized, since the circumstances which lead to blank or partial entries for age could also lead to incomplete or absent information needed to estimate age in the census. Additionally, the tests were likely to have contained proportionately more children and family members, for whom age allocation was easier, and proportionately fewer bodgers, for whom age allocation was more difficult.

Operation 7, the general coding process, had inwolved both the translation of certain non-numeric entries into numeric codes and the editing of specified items for consistency. The age entry occurred in column 11 on the population schedule, and a whole number or fraction was required in this column for every person enumerated. In those cases in which column 11 was blank or illegible or contained an entry of 'Un,' for unknown, the coders in Operation 7 were instructed to make an entry on the 'Persons of Unknown Age' form. This form was fastened to the outside of the portfolio when the portfolio was returned to the control desk at the end of this operation. Before the portfolios of coded schedules went to Operation 8 for verification, those portfolios with unknown ages were segregated and sent to the age allocation operation. The general coding operation was at its peak between September and December, 1940. In December there were 848 coders working in two shifts, coding approximately $1,342,000$ persons per day. There were seven age-assigners at work, three per shift with one assigner overlapping and instructing. The maximum number of ages estimated by a single assigner in a 7 -hour shift was 450; however, the average number of ages assigned daily ranged from 245 in the weeks following training to 380 near the end of the operation.[5]

The age-assigners received a month of training before they were allowed to work alone. Persons selected to be age-assigners all had college degrees, with some statistical or sociological training. Several held masters' degrees and one had a doctorate. The age-assigners were paid at the rate of assistant section chiefs, $\$ 1620$ per annum.

The general population coders worked in sections of 20 each and the age-assigners worked with this operation. The age-assigners worked on a table near each section chief where the portfolios containing unknown ages from that group were placed. Attached to each portfolio was the 'Persons of Unknown Age' form which identified the portfolio by state and E.D., and indicated the sheet and line number of any schedule requiring attention. Estimated ages were entered on the
[5] See The Elimination of Unknown Ages, pp. 23-24.
schedule in green ink, to distinguish these entries from the black enumerator entries and the red edited entries. The estimated ages were also recorded on the referral form.

The various paraphemalia for age-assigning--the master indicator, ages of compulsory school attendance of each state, ages of husbands and wives, age from school grade, the various card decks, and index of occupations (for descriptions of these, see below)-were placed on a hand truck which constituted a portable desk for the age-assigners. They traveled from section to section, where there were usually about one to six portfolios for attention.

There were six types of problems that occurred in the process of general coding which led to referral to age assignment: (1) a complete blank; (2) a partial entry; (3) an illegible entry; (4) an inconsistency with other information on the schedule; (5) an ambiguous entry, such as "over $21^{\circ}$, $21 \mathrm{c}^{\circ}$, "legal", etc.; and (6) entries of ' 0 ' or 'under 1'. In all, there were 207, 211 ages assigned for the entire census. The most common problem was blank entries. The second problem, that of partial entries, could have occurred when an enumerator was interrupted or when the informant did not know the exact age but could place it within a decade. The enumerator was only able to record the age within a decade, thus making an entry which left the unit digit blank. Occasionally, entries which were present in the age column appeared inconsistent with other data on the schedule. There were about 2,000 inconsistencies that were referred to age assignment, but only 831 were treated as unknown ages. The remainder were allowed to stand, e.g., when a child was shown as older than the father or there were two or more children a few months apart. In such unusual situations, if the entries were not impossible they were left as enumerated. Estimation of infant ages arising from a ${ }^{\circ} 0^{\prime}$ or "under $1^{\prime \prime}$ entry was made with an infant deck.

Two general principles were utilized in the assignment of ages. Assignment was to be guided by whatever age-indicative information appeared on the schedule, and the estimated age could not be inconsistent with any information on the schedule which was considered to be reliable.

The relationship between the age of children in school and the highest grade completed was considered to be very close and was given precedence over other information. However, this basis for age estimation was applicable only for a person designated in column 13 as in school, " and for whom there was an entry in column 14 for highest grade of school completed. This information was then used to assign the average age for the highest grade completed during the previous academic year (see Appendix 111, Figure 1).

Employment information was also utilized in this step of the assignment process. For those who had completed either seventh or eighth grade, an age of "13" was assigned if there was no employment information (columns 21-33), and an age of '14' was assigned if such information was present.

When information on the relation between school attendance and highest grade completed was absent, the next highest priority was given to the age relation between husband and wife. If this information was also absent, the unknown ages were distributed according to certain types of controls. In this regard, a "Master Indicator" (see Appendix III, Figure 3) was used in the age allocation
scheme to assist the age-assigners in using the data on the schedule. The assigner started at the top of the master indicator and norked down along the appropriate path until he or she arrived at an estimated age which was satisfactory. The general rule operating in this process was that the assigner should choose the path which led to the quickest and most definite allocation of age. Once a temporary age had been assigned, the assigner was required to check the estimate for consistency with the other information on the schedule.

In using this allocation method, the assigner was instructed to go first to column 12 on the population schedule. This column contained the marital status of the person in question. Since this information had been coded prior to the age assignment operation, there were no unknown data in this column. If column 12 indicated that the person was married and the age of the spouse was given on the schedule, the assigner looked up the appropriate age in a table that provided the relationship between the ages of husbands and wives (see Appendix III, Figure 3).

The table of the age relationship of husbands and wives was based on Mortimer Spiegelman's work on the frequency distribution of the ages of husbands and wives among the native white population of Pennsylvania in 1930. The Census Bureau operated under the assumption that the same age distribution would hold for the 1940 population of any other state, and for any race. This table look-up was only applicable if the age of one of the spouses was present on the schedule.

If the spouse was not listed or his or her age was unknown, the age-assigner was instructed to observe the relationship to the head listed in column 8. If the person with the unknown age was a parent, the procedure was the same for those married (age of the spouse unknown), widowed, or divorced. The procedure for parents involved determining the sex of the person from column 9. Then, for female parents, the age-assigner was instructed to look up the "Mother Deck." This deck consisted of 250 cards, each stamped with a number representing an age and occurring in proportion to the number of mothers having that age at the birth of their first child. When the age of the oldest child listed on the schedule was thought to be that of the oldest child, this deck was used by adding the age shown on the top card of the deck to age of the oldest child shown. The sum of these two figures was the estimated age of the mother. Once an age had been assigned to the mother, the table providing the age relation between husbands and wives was used to estimate the husband's age.

The cards of the Mother Deck, along with those of the other decks used in age estimation, were used in a similar manner. The cards were first stamped with an age. After being shuffled, the cards were numbered serially from 1 to 250 on their reverse side to provide an order. When a deck was consulted, the top card was drawn but only used if the age given on it was consistent with information available on the schedule. If the age given on the card was inconsistent, the next card was tried. Cards from which assigned ages were taken were placed at the bottom of the deck and when the deck was used once through the cards were again placed in serial order. The Census Bureau felt that the advantage of this procedure was that it ensured the frequency distribution of assigned ages among the class of persons for whom the deck was constructed. The procedure also had the advantage of placing each assigned age as close as possible to the correct cell in any table in which age was cross-classified with some other variable.

In those cases where the spouse was not listed or the spouse's age was unknown and the entry in column 8 indicated that the person was not a parent, a different procedure was used. The first control used was the person's occupation entry. It was assumed by the Bureau that within the 13 broad occupational groups of 1940 (see Appendix 111, Figure 4), the age distribution of each sex was homogeneous. In fact, the Bureau found that some of the age distributions of the broad groups were similar and could be combined. Three decks of 250 cards were assembled, with each deck representing a number of occupations with the same age distribution (Appendix 1II, Figure 4). The number of cards belonging to any age class was in proportion to the frequency with which that age class occurred for the broad occupational group and sex group in the 1930 Census of Population. The procedure for using the occupation cards was the same as that for using the Mother Deck.

For those cases in which the person with the missing age was listed on the schedule as married, divorced, or widowed, but the other information on the schedule was too limited to provide for the use of the other look ups thus far described, the assigner was instructed to use Part C of the "Ceneral Deck". The General Deck contained 250 cards that showed ages in proportion to the combined male-female age distribution of the country as a whole in 1930, except that children aged 5 to 20 attending school were excluded. This deck was divided into three parts based upon the age range represented by certain questions on the schedule. Part A contained cards in which the age ranged from zero, i.e., less than one year, through 4, and corresponded to no entries for the questions on residence 5 years earlier in columns 17-20. Part B contained cards for the age range from 5 through 13 and was obtained from the entry in column 13 for current school attendance. The Bureau had no cards in this deck for ages 9 to 13 because it felt school attendance was sufficiently close to universal and itheitiore any assignment other than in relation to highest grade completed would have over-represented such children. Finally, Part C contained cards for ages 14 and over, based upon entries for employment and occupation in columns 21 through 30. The procedure for using the Ceneral Deck was the same as for the other decks.

A somewhat different procedure was used for those persons with missing ages whose marital status in column 12 was single. This procedure involved determining from the entry in relation-to-head, column 8, whether the person was a child, grandchild, niece, or nephew of the head. If it could be determined that the person did have such a relation to the head, the assigner sought to determine if the person was 5 or over, based on the information on previous residence in column 17. An additional check included determining if there was information on employment in columns 21 through 34, indicating that the person was at least 14 years of age.

Those persons determined to be children, grandchildren, nieces, or nephews of the head were directed into one of three allocation paths depending upon the entries noted above. The first path included those who had no entry on the previous residence item, column 17, or the employment items, columns 21-34. If there was no entry for highest grade completed, of if the entry was 0 , the assigner was instructed to use general deck $A$ to assign an age. If the entry in column 14 was ' 1 ' to ' $\mathrm{H}-4$ ', the assigner was instructed to use the table estimating age from highest grade of school completed. Finally, if the entry in column 14 was
 highest grade completed as minima.

The second path for this type of unknown age involved those persons for whom there were entries for the employment questions, columns 21-34, whether or not there was an entry for the previous residence question, column 17. This procedure involved checking the school attendance question in column 13. If this entry was either 'No' or blank, the assigner made an estimate based on either the Occupation Deck or on General Deck C. If there was an entry in column 13, the assigner next examined the entry in column 14 for highest grade completed. If there was no entry in column 14, the age estimate was made from the Occupation Deck or from Ceneral Deck C. If the entry in column 14 was from '7" to 'C-4', the assigner was instructed to use the table estimate for the age related to highest grade completed. Finally, if there was any other entry in column 14, the estimate was made from the Occupation Deck or General Deck C.

The final path for this type of single person was for those persons with an entry in column 17, previous residence, but no entries for the employment information, columns 21-34. The procedure involved determining the entry for current school attendance, column 13. If the person was then attending school, the assigner was instructed to check the entry in column 14 for highest grade completed. If there was no entry, the age estimate was made from General Deck B. If the entry in column 14 was from ' O ' to ' $\mathrm{H}-4$ ', the estimate was made from the table indicating the average age for highest grade completed.

If the entry in column 13 indicated that this person was not currently attending school, the assigner also next checked the entry in column 14, highest grade completed. If there was no entry in column 14, the assigner was instructed to use General Deck B for the age estimate. If the entry in this column was above 'H-4', the estimate was made from General Deck $C$, with the table for highest grade completed used as a minimum. If the entry in column 14 was ' $\mathrm{H}-1$ ' to 'H-4', only the table for highest grade completed was used. In those cases in which there was an entry of ' 0 ' to ' 8 ' in this column, special methods were used. If it appeared that the enumerator had failed to report school attendance but it could be assumed that the child was in school, then the table for highest grade completed was used. If the highest grade completed was reported as " 0 " and the entry for previous residence was considered valid, the ages of ${ }^{\circ} 5^{\circ}$ and -6" were assigned alternately. When the highest grade completed was listed as - 0 " but the entry for previous residence was questionable, the assignment was made as ${ }^{\prime} 5^{\prime}$ one-third of the time, as ${ }^{\prime} 6^{\prime}$ one-third of the time, and from Ceneral Deck A one-third of the time. This latter procedure was required by the fact that there were a large number of portfolios presented to the age-allocation operation on which the enumerator had experienced difficulty with the question on residence 5 years ago--about one-third of the children under 5 were listed with residence 5 years ago.

For those single persons whose relation to head did not show them to be child, grandchild, niece, or nephew, the next step involved determining whether there were entries in columns 21-34 for employment information. If this information was present, the assigner made the age estimate based upon the Occupation Deck or General Deck C. If there was no employment information, the next step involved determining the entry for previous residence. If there was no entry for column 17, the estimate was made from the General Deck A. If there was an entry in column 17, the estimate was made from General Deck B.

General Deck A provided for age allocation in the range of 0 through 4 years of age. Whenever this deck turned up the age 0 , the assigner was required to use the Infant Deck. This deck consisted of eight cards, used in rotation, ranging from 4 months through 11 months. Only rarely were the cards for 0 months through 3 months used. This special deck was designed to avoid having to fill out an "infant card" during processing. In 1940, the infant card was an innovation which enumerators were asked to fill out for every infant of three months or less. These cards were turned over to the Division of Vital Statistics to allow it to cross reference the completeness of birth registrations. Thus, these cards were only used when there was some definite indication that the age of the infant was under 4 months. As with the other decks used in age assignment, the procedure for using the Infant Deck was the same as that described above for the Mother Deck.

Once the detailed method for age assignment had been used to arrive at an estimated age for those persons with unknown ages, the age-assigner was then required to check the estimate to see if it was consistent with other reliable information on the schedule. In addition, certain rules were adopted for checking consistency: (1) the gap between the age of a child and younger parent could not be less than 14 years; (2) the gap between the age of a child and a $g$ randparent could not be less than ' $30^{\circ}$ years; (3) nieces and nephews could not be older than their aunts or uncles; (4) the head of a household could not be under '18'; (5) an apprentice or new worker could not be over '25'; and (6) the age assigned to a person at work on a WPA, CCC, or NYA project had to be within the regulation age limits of those agencies. If these consistency checks were failed, the age had to be reassigned taking into consideration the information with which the estimate had been inconsistent. If the consistency checks were passed, the assigned age was written on the schedule in green ink to distinguish it from the enumerator's entries which were written in black ink and from the red editorial markings.

## Verification of General Population Coding

In order to ensure accuracy, the work of the coders and the card punchers was verified. In the preparation of data which were not required by the legal purposes on the census, it was possible to introduce sample inspection into the processing. The object of sample inspection was accuracy in the production of statistical tables, while at the same time maintaining a minimum cost for the inspection. It was estimated that the total savings from the use of sample verification in the processing of returns in 1940 amounted to $\$ 263,000$. The following is a breakdown of the savings from the use of sample verification [6]:
[6] For this and the description and results of sample verification of card punching below, see W. Edwards Deming and Leon Geoffrey, "On Sample Inspection in the Processing of Census Returns, Journal of the American Statistical Association 36:351-360.

| Process in which sample verification was used | Savings |
| :--- | ---: |
| Preliminary employment transcription | $\mathbf{\$ 3 , 0 0 0}$ |
| General population coding | 82,000 |
| Occupation coding | 68,000 |
| Ceneral housing coding | 15,000 |
| Individual population card punching | $\mathbf{7 3 , 0 0 0}$ |
| Housing dwelling card punching | $\mathbf{2 2 , 0 0 0}$ |
| Total savings | $\mathbf{\$ 2 6 3 , 0 0 0}$ |

It was considered necessary that coders and punchers have a history of consistently accurate work before sample verification took the place of 100 percent verification. Once performance records showed the work of coders and punchers to be accurate within control limits, small but frequent samples of their work sufficed for maintaining control of the processing. It was necessary to keep a record of the production and errors of each individual and to monitor this record daily and weekly. This record was kept on the verifier's report of errors found. The principles behind the sample verification of the coding operations were the same as the principles which were applied to the sample verification of card punching.

In Operation 8, verification of the general population coding was performed to correct errors made by the Operation 7 clerks, to discover those cases where the systematic coding errors indicated misunderstanding or misinterpretation of the instructions by the coding clerk, and to determine whether the age estimator made the correct entries in columns $13, \mathrm{~B}$, and D .

Before starting the verification process, the clerks were required to become familiar with the 'Instructions to Enumerators' (Form PA-1), the 'Instructions for General Population Coding' (Form P-327a), and the "Instructions for Punching Population Individual Cards $A$ and $B^{\prime \prime}$ (Form P-345), the last of which indicated how the puncher used the various code numbers and corrections. As in other editing operations, the clerks in the general coding verification made all corrections with red pencils. Entries made by enumerators were not erased, merely cancelled and corrected. However, entries made by the coding clerks were allowed to be erased when necessary.

The clerks in Operation 8 were required to fill out a verifier's report of errors found for each day's work and for each section verified when more than one section number of Operation 7 was examined. A separate line was filled out on this form for every person whose work was being verified. The information recorded on the form included the name of the coder, the state, the E.D. number, and the population. A tally of the number of entries or codes changed was kept and entered in the column "Number of Errors Found." Also recorded on the verifier's report of errors found was an entry indicating the types of errors that appeared frequently in the coding.

The amount of a coding clerk's work which was verified depended upon the clerk's experience. In the initial stages of coding, all work of each clerk was verified. However, as the clerks gained experience, the section chiefs were allowed to provide specific instructions to the verifiers that adjusted the amount of work verified for particular clerks, depending on the number of errors made by the
coding clerk. The criteria used in determining which coding clerks were eligible for this sample verification were the same as those described below in the section on sample verification of card punching.

The verification process began with the verification of the transcription of the confidential report of wage or salary income forms. Once any necessary corrections were made, the clerks clipped the forms together, attached a slip of paper identifying the forms by state, E.D., and the notation "transcribed," and held them for return to the control clerk when the coding of the entire portfolio had been verified.

The verifiers were instructed to follow a procedure of verifying column by column rather than line by line, except in cases where other entries on a line or on other lines for other members of the household had to be examined to determine the accuracy of a code. However, during the later stages of verification when coders had become experienced and sampling had been introduced into the verification process, the verification was done line by line. Schedules were verified one side at a time and the verifiers were instructed to keep the general coding instructions in mind as they checked the schedules.

When the verification of the coding was completed, the verifiers made the proper notations on the portfolio memorandum and returned the portfolio and confidential report forms to the control desk. At the end of each day's work, the verifiers turned in to their section chiefs the verifier's report of errors found. This form was filled out in duplicate. One copy was kept by the verifier's section chief and the other copy went to the section chief where the coding had been performed.

Öccupation, Industry, and Class of Worker Coding and Verification
Operation 9 consisted of the coding of occupation, industry, and class of norker entries on the population schedule, columns 28-30, $F, 45-47,1$, and U. The Operation 9 instructions are reproduced in Appendix IV. In the preparations for this coding an occupation index was prepared in two volumes: a Classified Index with more than 25,000 occupational designations arranged according to occupation or occupation group, and an Alphabetic Index of the occupational designations indicating to which of the 451 occupations and occupation groups the classification belonged.[7] The Alphabetic Index also included approximately 9,500 industry designations and symbols indicating to which of 132 titles of the industry classification the designations belonged. This index was prepared by Dr. Alba M. Edwards, with assistance from Ernest J. McCormick, and was based upon the 'Standard Industrial Classification' developed under the auspices of the Central Statistical Board between 1937 and 1939.

Each occupation coding clerk was provided with a copy of the Alphabetic Index of Occupations and Industries and a large card, 'List of Principal Occupations and Industries with their Symbols, " on which several of the principal occupations and industries in the index were printed. These coding aids were used to look up
[7] U.S. Department of Commerce, Bureau of the Census, Alphabetic Index of Occupations and Industries, prepared by Alba M. Edwards (Washington, D.C.: Government Printing Office, 1940).
each entry of an occupation (column 28) and of an industry (column 29). The symbols given in the Index for each were entered in the first two sections of column $F$ of the schedule. In addition, columns 45 and 46 of the "Supplementary Questions section of the schedule were coded according to the instructions for coding columns 28 and 29. Only those persons who were considered to be in the labor force were given occupation, industry, and class of norker codes. Such persons were determined by the codes appearing in column $E$ (for a description,
 '4' were considered to be in the labor force.

An "occupational designation" consisted of a complete return of an occupation of the person and the industry, business, or place in which the person worked. Each occupational designation was represented in the Alphabetic Index by a five-digit code symbol. The first three digits of the code indicated the occupation and the last two digits represented the industry. In cases in which an occupation occurred in many industries, the code for the industry in the occupational designation was "Ind.," indicating that the code for the particular industry listed in the Industry Index was to be used.

The entry in column 30 of the schedule was for class of worker. These entries were coded in the third space in column F, according to the following scheme:

| Schedule <br> Entry | Code | Meaning |
| :--- | :--- | :--- |
| PW | 1 | Wage or salary worker in private work |
| CW | 2 | Wage or salary worker in government work |
| E | 3 | Employer |
| OA | 4 | Working on own account |
| NP | 5 | Unpaid family worker |
| New worker | 6 | Person without previous work experience |

Coders were instructed to consider as unpaid family workers all children under 18 years of age and women of any age who were enumerated with their family on a farm and returned as farm laborer, garden laborer, or other agricultural laborer, with no entry for column 30, unless there was information indicating otherwise. All other persons returned as farm laborer, garden laborer, or other agricultural laborer, with no class of worker entry were coded as wage or salary worker in "private work." Coders were also instructed to check the occupation entries of "farmer" and "farm laborer" to see that they were consistent with the entry in column 34 for farm schedule number. In almost all cases, anyone filling out a farm schedule was coded as farmer, whereas farm laborer was coded if a farm schedule had not been filled out. Persons living on farms who were returned as "Laborer-add jobs," "Odd jobs," or "Working out," were given the code for farm laborer.

The index was designed to cover most occupational designations, but it was not exhaustive. When an occupational return was not found in the Alphabetic Index, or was not covered by it, the case was referred to the coding supervisor. in addition, the coders were instructed that when they encountered children under 18 years of age in certain occupations, they were to provide codes for alternative occupations, usually apprenticeships. Examples included the following: blacksmith, boilermaker, brickmason, cabinetmaker, carpenter, cooper,
coppersmith, designer, draftsman, dressmaker (not in factory), electrician, machinist, mechanic, milliner, plumber, printer, stonemason, tailor, and tinner were coded blacksmith's apprentice, boilermaker's apprentice, etc.; cook and housekeeper were coded servant; dairy farmer and farmer were coded (dairy) farm laborer; and nurse was coded child's nurse. There were also occupations for which children were not deemed to possess the necessary physical or mental requirements--proprietary, official, supervisory, or professional pursuits. When children under 18 were returned in such occupations, the cases were referred to the section chief. In some cases, the occupational codes that were provided differed from the schedule entries.[8]

There was also a list of "peculiar occupations for women." When a woman was returned as following such an occupation, the schedule was examined to determine whether an error had been made either in the occupation or in the sex of the person. This list included the following occupations:

| Auctioneer | Forester | Molder (any metal) |
| :--- | :--- | :--- |
| Baggageman | Freight Agent | Motorman |
| Blacksmith | Furnace Man | Pilot |
| Boatman | Carbage man or scavenger | Plasterer |
| Boilermaker | Gas or steam fitter | Plumber |
| Boiler washer | Heater | Pressman, printing |
| Bootblack | Hostler | Puddler |
| Brakeman | Inspector, mine/quarry | Railroad official |
| Butcher | Ladler or pourer, metal | Railway mail clerk |
| Butler | Laborer, coalyard | Roofer |
| Cabinetmaker | Laborer, lumberyard | Sailor |
| Captain | Laborer, pipeline | Sawyer |
| Conducror | Laborer, road or street | Slater |
| Cooper | Locomotive engineer | Smelter man |
| Craneman | Loom fixer | Stevedore |
| Deck hand | Lumberman | Stonecutter |
| Ditcher | Machinist | Stonemason |
| Electrician | Manager, mine or quarry | Street cleaner |
| Engineer (amy) | Structural iron worker |  |
| Engine hostler | Marine | Switchman, railroad |
| Express messenger | Marshal | Teamster |
| Fireman (amy) | Master | Tinsmith |
| Flagman, railroad | Mate | Mechanic maker |
| Foreman, lumber camp | Millwright | Woodchopper |
| Foreman, mine/quarry | Miner |  |
| Foreman (any construction | industry) |  |

Persons on or assigned to public emergency work, i.e., WPA, NYA, CCC, or local relief work, were coded the same as other workers for their occupation entries. For their industry entries, such persons were also coded the same as workers in private employment when an industry was reported. When the return merely
[8] For a discussion of this issue and, in particular, the issue of coding momen in "unusual" occupations that is discussed below, see Margo Conk, "Accuracy, Efficiency, and Bias: The Interpretation of Women's Work in the U.S. Census Statistics of Occupations, 1890-1940, ' Historical Methods 14(May 1981):65-72.
indicated the program, such as "WPA,' the industry code was given as government. When a person reported two jobs, the first return was coded.

When the coders received portfolios for coding, they first checked the portfolio memorandum to see if the portfolio was to be examined for industrial home workers. An industrial home worker was defined as one who worked in his or her home for a commercial employer who furnished the materials or products on which the person worked. A proper return for an industrial home worker included the words 'at home' following the occupational entry in column 28. The kind of business or factory by which the person was employed was entered in column 29. The coders were instructed to distinguish carefully between industrial home workers, who were working for commercial employers, and persons who worked in their own homes for themselves. Each person identified as an industrial home worker was recorded on a line on the 'Industriai Home Worker Transcription Sheet (Form P-358).

When the coding of a portfolio was complete, the coders made the proper entries on the portfolio memorandum and noted that the data for industrial home workers, if any, had been transcribed. The portfolios were returned to the control desk.

Verification of the occupation, industry, and class of worker coding was done by clerks in Operation 10. Not all of the coding was verified. Instead, sample verification was used. The proportion verified was determined by the section chief, based upon the experience and efficiency of the coding clerks. As coders became experienced, the amount of verification of their work was determined by the percentage of error in their previously verified work.

When portfolios were given to the verifiers, they went over several sheets and verified the accuracy of the occupation, industry, and class of worker symbols assigned by the coders. When an incorrect symbol was found, the verifiers changed it to the correct symbol and made an entry on a "Verification Slip" (Form P-355). This slip entry included the sheet and line of the E.D. on which the error was found and the occupation, industry, and, if involved, class of worker entries on the schedule, the symbol the coder assigned, and the corrected symbol. The clerks also verified any symbols entered in column $J$ of the 'Supplementary Questions' section of the schedule and checked to see that the $t$ ranscription of symbols from column $F$ to column $U$ had been properly made.

## Coding and Verification of the Housing Census

The coding of housing schedules was performed in Operation 11. This operation involved three main processes: completion of entries for added dwelling units, examination of specified items for completeness and consistency, and provision of code symbols for entries not precoded.

The housing schedules were contained in separate portfolios after operation 6 . The examination of the housing schedules was made section by section. Corrections were made by cancelling the original entry and writing the correct entry above or beside the old entry, or by checking the correct box.

Entries on the occupied-dwelling schedules were arranged in several parts. Part 1 contained information on the location of the dwelling unit and household data. Specific items included the number of the structure in order of visitation and the
dwelling unit number within the structure, the population line number of the head of the household, the block number (in cities of 50,000 or more), the race of the head, the number of persons in the household, farm residence, home tenure (owned or rented), the value of the home or the amount of monthly rent paid. Part II contained data on the characteristics of the structure, such as number of dwelling units, the presence of a business within the structure, the year and purpose for which the structure was originally built, and the exterior material and need for major repairs. Information on the characteristics of the dwelling units, such as the number of rooms and the equipment present, was contained in part III. Part IV consisted of utility data, including any furniture that was included in the rent. Finally, financial data for each owner-occupied nonfarm unit was present in part $V$ of the occupied-dwelling schedule. This information consisted of the value of the property, the total mortgage debt, the first mortgage debt, the regular payments, the interest charged, and the holder of the first mortgage or land contract.

The vacant-dwelling schedules contained information in three parts. The location and general data in part $I$ included the visitation and dwelling unit numbers, the block number, farm location, occupancy status, and the monthly rental (or an estimate). Part 11, the characteristics of the structure, and part 111 , the characteristics of the dwelling unit, were the same as on the occupied-dwelling schedule. The details of the coding process for the housing census are provided in the 'Coding Instructions for Housing Census' (Form HC-15).

Verification of the housing census was performed in Operation 12 according to the same basic procedures used to verify the general population coding. This procedure included an initial verification of all work by each coder. As the coders became experienced and met established error rates, the verification of a coder's work was done on a sampling basis. Throughout the verification operation, clerks were required to fill out the verifier's report of errors found for each coder whose work was checked, for each day of verification. When verification was finished, the portfolio memorandum was marked and the portfolio was returned to the control desk.

## TABULATION

The first tabulation of the census data was the count made in the field by the district supervisor. This count was made by totaling the number of persons on the population schedule and served as the basis for both the enumerators' pay wouchers and the preliminary population announcements. A similar process was performed by the clerks in Operation 4. In this operation, the clerks produced a hand count of the population by counting the number of persons and dwelling units enumerated on population schedules. This hand count served as the official population count used in the apportionment process and was the basis for the first series of state bulletins on population and the first volume of the final population report. [9]

While these counts were tabulations they were not classifications of the data according to detailed characteristics of the population. To present the data

[^2]obtained from the census schedules in detailed form, the data were transformed into a format permitting machine processing. The conversion of the data on punch cards into tabular form represented the final step in the processing of census returns.

## Card Punching and the Sample Verification of Punch Cards

The use of punch cards in the processing of census returns began in the 1890 Census of Population. Punch cards used in processing this census were blank and required reading boards in order to show the proper positions for making punches. Throughout the next 40 years, substantial developments occurred in the technology of card punching.[10] By 1930, commercial key punches had replaced the reading boards. A standardized punch card of 24 columns had been developed for use on the commercial key punches. Between 1930 and 1940, the Bureau adopted a 45-column punch card and altered its machines to handle these new cards. This change was significant because it allowed extra fields on which to punch information from the census schedules.

In the processing of census returns in 1940, card punching was done by operators working in groups of 20. Each section of punch operators was supervised by a section chief and an assistant section chief. The operators transferred information appearing on the schedules to the cards by punching designated keys on hand-operated punch machines. Detailed instructions explained the translation of schedule entries into codes to be punched in designated columns, or fields, on the punch cards. Codes and editorial changes had been made on the schedules in previous operations. There were eight different types of cards punched. A complete description of these cards is given in Appendix $V$. An additional card (Card W) containing 1910 Census fertility information was produced as a WPA project and used by the Bureau for comparative fertility analysis.

As noted above, one of the innovations in the 1940 processing of census returns was the use of sample inspection in the verification of different operations. The sample verification of card punching was central to the card punching operation.

Initially, a verification clerk examined all of a card puncher's work. Error rates of the card punchers were recorded on the verifier's report of errors found on a daily basis and plotted on a weekly basis. When the work of a puncher met predetermined criteria, the work of the puncher became subject to sample verification. To qualify for sample inspection, the punchers had to show for a 4 -week period an average error rate of not more than one wrong card per 100 cards punched and no week of an average of 2 wrong cards per 100 punched. Additionally, only one of those four weeks could include a portfolio for which there were more than 3 wrong cards per 100 cards punched. A puncher was disqualified from sample verification when the average error rate for any week, determined on a sample basis, exceeded 3 wrong cards per 100 cards punched, or if it exceeded 2 wrong cards per 100 cards punched for two weeks out of a 4-week period.

The sample verification lasted 7 months. During this period, 51,000,000 (29 percent) of the $175,600,000$ cards punched were subjected to sample verification.
[10] See Truesdell, The Development of Punch Card Tabulation.

During the peak of activity, records were being kept on 1,265 punchers and 498 verifiers. The maximum number of punchers who qualified for sample verification at any one time was 473 ( 39 percent). Only 13 of the punchers who qualified for sample verification were later disqualified. Additional staff included seven people in record maintenance, three in training and supervision of verifiers, two doing studies of the error records and special problems, and one supervisor under the direction of the mathematical advisor (Dr. Deming).[11]

The sample verification operation involved the selection of 5 percent of the cards in each portfolio punched by a "qualified" puncher. This averaged about one card per 8 minutes of work by the punchers. The selection of cards for sample verification was done through systematic sampling of the cards. A random starting point was used and changed daily for each verifier. Any errors found by the verifier in the sample were corrected. In addition, the verifier was instructed to verify all cards in a portfolio whenever the error rate of the sample exceeded 3 wrong cards per 100. About 2 percent of the work of qualified punchers was reverified in this manner. Visual verification of certain columns was also performed by holding together cards for which holes were to be punched in the same place on each card. An additional 7 percent of the work of qualified punchers was verified in this manner. The sorting and tabulating machinery was also set to reject cards with certain inconsistent punches. These cards were then corrected.

Five 5,000-card samples of incorrectly punched a cards were studied to learn about the nature of the errors made in card punching.[12] The study showed that when sample verification was used, the net effects of incorrect punches were often negligible. In many fields, errors tended to compensate for each other. It was also found that the units column of a field was more often incorrectly punched than earlier columns in the field; thus, errors in numerical fields were mostly of small magnitude. As an example, age was incorrectly punched on 3,210 cards of the sampled 25,000 cards. Still, 41.8 percent of these 3,210 cards were punched within the correct 5 -year age group and 40 percent of the remaining cards were punched in adjoining 5 -year age groups. The study found that the pattern of incorrect punches in other fields analyzed-wage income, farm residence, race, citizenship, and marital status-was essentially the same for all. Errors tended to compensate for one another, i.e., the distribution of the errors was not greatly different from the distribution without the errors.

The study also determined factors associated with the occurrence of incorrect punches. The clustering of incorrect punches on cards having more than one incorrect punch was examined. It was found that 86 percent of the incorrect cards had only one error, while 9 percent had two errors and only 5 percent had three or more errors. An investigation of the 3,535 cards with two or more errors showed that the multiple incorrect punches were related, as when a column was skipped, thereby making the punches for subsequent columns incorrect.
[11] Deming and Ceoffrey, "On Sample Inspection," p. 359.
[12] The results of this study are presented in W. Edwards Deming, Benjamin J. Tepping, and Leon Geoffrey, 'Errors in Card Punching,' Journal of the American Statistical Association 36:525-536.

The distribution of incorrectly punched cards according to the schedule line number was also examined. It was found that there was a gradual decrease in the number of incorrect cards for successive lines of the population schedule. This was expected since earlier lines were filled out more often than later lines. In addition, the number of incorrect cards for certain lines was considerably greater than for others. The four lines designated for supplementary questions and the first line of the schedule showed a prominence over the other lines. The study concluded that source of the errors on the lines designated for supplementary questions was in the column on the card which indicated that the schedule line was designated as a supplementary line. Lines not so designated had substantially fewer errors in this column. The greater error rate on the first line of a schedule was attributed to breaks in the puncher's rhythm caused by the removing of a completed schedule and insertion of a new in the schedule holder behind the card punch machine. In particular, it was found that the longer interval before the first line of the first sheet of a portfolio was associated with the greater number of incorrect punches.

The frequency of certain codes in relation to incorrect punches was also analyzed. it was found that for certain fields of the $A$ card, there occurred punches which were far more frequent than any other punch in the field. For instance, the punch of "Native" in the citizenship field was far more frequent than any other of the possible punches in the field.

Machine Processing
Central to the processing of census data has been the incorporation of changes in machine technology. These changes were designed to increase both the efficiency and the accuracy with which the data from individual returns could be tabulated. By 1940, the Census Bureau was using census-built sorting machines, unit counters with 60-column recording sheets, and reproducers-used to transfer punched items on one to any position on another card. [13]

The sorting machine was used to sort punch cards according the values punched in a column on the cards. The sorters could only sort on one column at a time. A multicolumn sorter was not developed in the Bureau until 1947. Thus, any complicated sort required several passes through the sorter.

After preliminary sorting, punch cards were passed through a unit counter. The unit counter kept counts of the number of individuals with specific characteristics. This machine was capable of counting up to 7 separate fields, or columns, on each card. Through a system of relays these columns could be combined, thus eliminating some preliminary card sorting. The number of separate characteristics that could be counted was limited when the oodes for characteristics occupied more than one field on a card. The results of a run through the unit counter were printed on 60-column recording sheet or result slip.

Runs through the unit counter were made for relatively small areas. In order to obtain county or state totals, the figures for these small areas had to be consolidated. To do this, consolidation data from the unit counter result slips were first transferred to summary cards through the use of manually operated key
[13] See Truesdell, The Development of Punch Card Tabulation, pp. 195-197.
punches. These summary cards were 45 -column cards onto which were punched the small-area totals. Then printer-tabulator machines developed by IBM accumulated information from consecutive summary cards. These machines could also add items punched in different fields of the same card to provide needed totals and subtotals. The results were then printed approximately as they were needed for publication. This machine replaced an earlier process of copying the unit-counter result slips onto consolidation sheets, from which totals and subtotals were obtained by using manually operated adding machines.

An initial count was made from the tabulation of the 'Preliminary Sample Cards' ( $S$ cards). These cards had been punched from information on the preliminary sample transcription sheet. The information on these sheets had been obtained in Operation 5 for those persons whose line entry on the population schedule had fallen in the 5 -percent sample, i.e., on a line marked 'Suppl. Ques.' Both the transcription sheet and the $S$ card contained information on an individual's work status, age, race, sex, and place of residence. There was space on each $S$ card for information on all four sample individuals on a particular population schedule. Tabulations of these cards yielded the number of persons in each work status classified by race, sex, farm residence, and several age intervals. For each state, tabulations were made separately for (1) the rural farm and rural nonfarm areas, (2) towns and cities between 2,500 and 100,000 persons, and (3) each city of over 100,000 persons.

In order to rapidly obtain statistics on employment and unemployment, the punching and tabulating of $S$ cards occurred before the schedules had been edited. The tabulations made from the $S$ cards were, therefore, preliminary releases and were adjusted to the hand count of the total population for the areas for which tabulations were made.[14] The results of these tabulations were released almost one year ahead of the tabulations based upon the other punch cards.

All cards other than the preliminary sample card were punched after editing had been performed. Statistics based on the remaining punch cards differed from the statistics based upon the $S$ card. The magnitudes of changes in statistics after editing usually were not great. However, for state tables with small cell sizes preliminary figures were sometimes changed by 20 to 25 percent. The tabulations from the later sample cards had closer controls since they were adjusted to the totals of various population classes, such as age, sex, or employment status, counted in the complete enumeration.

The first through seventh counts were made from tabulations of "Individual Cards" (A cards), a card punched for each individual enumerated on the population schedule. The A card included personal characteristics, educational information, birth and residence data, and data on labor force participation and income (see Appendix IV).

The first count was a tabulation by each enumeration district. The second through sixth counts were tabulated by different geographical areas: for tracted cities by census tracts; by each ward in untracted cities of 100,000 or more; by each
[14] U.S. Department of Commerce, Bureau of the Census, On the Sampling Methods in the 1940 Population Census, prepared by Frederick F. Stephan and W. Edwards Deming, March 1941.
city of 2,500 to 100,000 ; by that part of the balance of each county which was included in a metropolitan district, divided by farm and nonfarm; and by that part of the balance of each county which was not in a metropolitan district, divided by farm and nonfarm.

The characteristics of the population that were tabulated varied from count to count. The first count tabulated farm residence, race and nativity by sex, and age by sex. The second count tabulated age and school attendance, education, and work status by sex, race, and nativity. The third count tabulated foreignborn Whites by country of birth and citizenship by sex and age. The fourth count tabulated for foreignborn Negroes, citizenship by sex and age, and for 'minor races, ' race by nativity, age, and sex. The fifth count of employed workers was broad occupation and industry group by sex and race for those states where a significant proportion of the population was not White. The sixth count was the age, marital status, and citizenship of the institutionalized population that was 14 years of age and over, and education for persons 25 years and over, by color, sex and type of institution. Finally, the seventh count was for intemal migration and consisted of two parts. Part one was the migrant's place of residence, April 1, 1940, by the place of residence, April 1, 1935. Part two consisted of migrant characteristics of work status, relationship to household head, education, citizenship, broad occupation group, age and color, crosstabulated with sex.

The tabulations produced by the first through fifth counts were published initially as the Second, Third, and Fourth Series of State and United States Summary Bulletins. These series bulletins were later edited, assembled, and bound together as sections of published volumes. The tabulations from the sixth count served as the basis for a special report on the institutional population. Similarly, a series of reports on migration were issued based upon the seventh count tabulations.[15]

In addition to the $S$ card there were several other punch cards made from the 5 -percent sample. The 'Supplementary Individual Card' (B card) was prepared for each individual in the sample. This card included the coded responses for the supplementary (sample) items, as well as a number of items from the complete enumeration for that person. The "Fertility Card" (C card) was completed for ever married women in the sample. The C card contained items from the B Card pertaining specifically to the noman (such as age at first marriage, number of children ever born, number of children living in the household, etc.), and also items pertaining to the woman's husband (age, education, and employment and occupational information). A 'Sample Family Card' (D card) was prepared for each household for which the head fell on a sample line. The items on card D included some items reproduced from card $B$ for the head and other items pertaining to other members of the family and to the entire family.

The results of sample tabulations were presented in a manner similar to the presentation of results based on regular tabulations. Additionally, each sample frequency was multiplied by an adjustment factor based upon known class totals of the population. This adjustment factor was close to the reciprocal of the sampling ratio, but varied somewhat due to the differential presence of blank lines among classifications. Almost all tabulations of the sample were published in a series of special reports.
[15] These publications are detailed in Chapter Five.

There was a similar program for tabulation of the housing census. Tabulations were made from the three housing cards--cards E, F, and G. The 'Dwelling Card (card E) included information on the persons living in the dwelling unit, in addition to information on the occupancy status of the dwelling. The $F$ card, called the "Household Card,' included information on household items from the population schedule in addition to information from the housing schedule. Finally, the C card, or "Mortgage Card," had information on the nature of the dwelling structure and on the mortgage debt. Due to other demands for available funds, few of these data were tabulated or published. [16]

Since there was widespread interest in the economic situation in the country, extensive tabulations were made of the labor force and income data. The 1940 tabulation also increased the emphasis on metropolitan districts as the areal unit. The metropolitan district was deemed a more significant unit of analysis than the central city for the purpose of labor market analyses, since the larger area of the metropolitan district was seen as a more appropriate delineation of the labor market.

## the effect of world war II ON the 1940 Census

The entry of the United States into World War II had a substantial impact on the operations of the Bureau of the Census and its work on the 1940 Census. Prior to the War, the Bureau was involved in the compilation of the census data and the preparation of final reports. All schedules had been edited and coded, punching of cards for population and housing was substantially completed, tabulations were under way, and preliminary reports for all major fields had been issued. Figure 1 in Appendix VI reports the completion dates of the major processing steps.

The Bureau had already begun activities in the area of national defense. A new Assistant Director had been appointed with the responsibility of planning and facilitating the defense activities of the Bureau. These activities centered around the preparation of information needed by agencies engaged in national defense projects. Priority was given to tabulations of 1940 Census data most needed by these agencies and a number of special tabulations were also prepared.[17]

With U.S. entry into the War, the preparation of needed statistics for defense and war agencies became the chief function of the Bureau. The Bureau was converted to a war program by the Second War Powers Act of 1942. This act authorized the Secretary of Commerce to make information on census schedules for individual respondents available to war agencies, to defer or dispense with any regular census or statistical work of the Commerce Department, and to make needed special investigations and reports of census or statistical matters that were necessary for the conduct of the War.
[16] Truesdell, The Development of Punch Card Tabulation, p. 206.
[17] U.S. Department of Commerce, 29th Annual Report of the Secretary of Commerce, June 30, 1941 (Washington, D.C.: Covernment Printing Office, 1941), PP. 42-43.

Since most of the information collected in the 1940 Census was needed for some aspect of war planning, the essential features of the program for completion of the census were retained. However, certain aspects of the program had to be abandoned.

A list of titles and tentative outlines of contemplated analytic studies had been circulated among consumers of census materials. The responses of these consumers had been reviewed, but this program of special reports had to be curtailed with the outbreak of war. The publication of a statistical atlas was also abandoned. The program for the compilation of certain population statistics was also modified. For example, family data were tabulated only on a sample basis instead of on a complete count basis as originally planned.

The results of tabulations of the population data were made available as quickly as possible through the use of sample tabulations and advance reports. War agencies received information, particularly labor force data, in advance of publication. Advance releases were issued on foreign-born Germans and Italians in the United States and on Japanese in the U.S. and Hawaii. Special releases were prepared on the potential labor supply in the nation, the reserve labor supply among women, the education level of men of military age, and the estimated number of males required to register under the Selective Service System. Data from the housing census were used to measure the fuel requirements of the country and the supply and characteristics of housing in critical defense areas.[18]

The additional demands made upon the Bureau by the War led the end of the Sixteenth Decennial Census period to be extended from December 37, 1942 to June 30, 1943. By this latter date, most of the final reports had been printed. The costs of the Sixteenth Decennial Census are presented in Appendix VI, Figure 2.

[^3]
## Chapter Five

## PUBLICATIONS FROM THE 1940 CENSUS

The publication program for the results of the Sixteenth Decennial Census was organized with tabulations first published as series of preliminary bulletins, many of which later became incorporated into final reports. This procedure was used both for the Population Census and for the Housing Census.

The War led to the curtailment of original plans for the distribution of 1940 Census publications. Some 150,000 groups and individuals had requested inclusion on mailing lists for census bulletins. These lists were discontinued during the War and free bulletins were sent only when deemed justified. Pressures to curtail the use of paper, shortages of printing and processing capacity, and the increased costs of materials and labor made such actions necessary. To make information more readily available, some 1,600 libraries throughout the nation were designated as depository centers for Census publications.[1]

The preliminary population results were first published in a series of state bulletins (including the District of Columbia), entitled 'Sixteenth Census of the United States: 1940, Population, First Series, Number of Inhabitants." A United States Summary Bulletin and separate bulletins for the territories and possessions were also published. These bulletins were completed between August 1940 and April 1941. They provided population counts by counties and minor civil divisions (such as townships, districts, and precincts), with separate figures for cities, towns, villages, and other incorporated places, for wards of incorporated places of 5,000 or more persons, and for metropolitan districts and census tracts. The Luilet̂iñs wére later edited and assemoled together in a bound volume, Sixteenth Census of the United States: 1940, Population, Volume 1--Number of Inhabitants, which was published in 1942 and constituted a final report of the 1940 Census of Population.

The second series of population bulletins, "Population, Second Series, Characteristics of the Population," was produced between September 1941 and April 1942. Similar to the first series bulletins, the second series of bulletins was composed of separate bulletins for each state and the summary bulletin for the United States. These second series bulletins were also edited and assembled in a bound volume for publication. Published in 1943, this final report was entitled Sixteenth Census. . . Population, Volume 11--Characteristics of the Population and it was composed of seven parts, one part devoted to a U.S. summary and the other six parts presenting data on states. Included in this volume were statistics for each state, by counties and, in varying degrees of detail, for other areas such as incorporated places with 1,000 inhabitants or more, townships or minor civil divisions, wards of cities of 50,000 or more, and metropolitan districts. The characteristics reported included residence (urban, rural-nonfarm, and rural-farm), sex, age, race, nativity, citizenship, country of birth, school attendance, highest grade completed, employment status, class of worker, major occupation group, and industry group.
[1] U.S. Department of Commerce, 30th Annual Report of the Secretary of Commerce, June 30, 1942 (Washington, D.C.: Covernment Printing Office, 1942). P. 27.

In a similar manner, the third series population bulletins, "Population, Third Series, The Labor Force," were completed between July and November 1942. This series was edited, assembled and published as Sixteenth Census - . Population, Volume 111--The Labor Force, in 1943. This volume was composed of 5 parts, of which one part was devoted to the U.S. summary and the remaining parts presented data by state. The data in both the bulletins and the final report included employment status, class of worker, occupation, industry, wage or salary income in 1939, hours worked in the census week of March 24 to 30, 1940, months worked in 1939, duration of unemployment, and certain personal characteristics (age, sex, race, and marital status).

Finally, there was a fourth series of population bulletins, "Population, Fourth Series, Characteristics by Age," which was prepared in the period from December 1942 to April 1943. This series was also assembled and published in 1943, as Sixteenth Census . . . Population, Volume IV--Characteristics by Age. This volume was composed of one part devoted to the U.S. summary and three parts of state data. The data presented were general characteristics of the population: citizenship, marital status, relationship to the head of household, school attendance, highest grade of school completed, and employment status. Each population characteristic was cross-classified by age. The data were presented for states, residence (urban, rural-nonfarm, rural-farm) within states, and urban places of 50,000 persons or more.

The results of the Census of Housing were published in a manner corresponding to the publication of population results. The first series of housing tabulations was completed between June 1941 and June 1942, and was published as a U.S. summary bulletin and a series of state bulletins, entitled "Housing, First Series, Data for Small Areas." These bulletins were edited, bound and published in 1943, as Sixteenth Census of the United States:1940, Housing, Volume 1--Data for Small Areas. There were two parts to this volume-one part for the U.S. summary and several states and the other part for the remainder of the states. This volume presented data for the U.S., regions of the U.S., each state, and within states for residence (urban, rural-nonfarm, rural-farm), counties, incorporated of 1,000 inhabitants or more, for wards of cities of 10,000 or more, for minor civil divisions, and for metropolitan districts. The data presented were total number of dwelling units classified by occupancy and tenure, race of occupants, number of units having more than 1.5 persons per room, state of repair, and plumbing equipment. Also, for urban and rural-nonfarm areas information was presented on number of residential structures, average monthly rent or rental value of dwelling units, and mortgage status of owner-occupied nonfarm units. Additional data presented for rural-farm areas related to electric lighting, running water, and toilet facilities.

Also published in 1943 was Sixteenth Census - . Housing, Volume II--Ceneral Characteristics. Like the other published volumes, it was an edited compilation of a series of state bulletins and a U.S. summary bulletin, in particular, 'Housing, Second Series, General Characteristics. " The reports in the second series had been compiled between January and November 1942. This volume contained a part devoted to a U.S. summary and four additional parts containing data for states. The data presented in this volume encompassed most of the subjects for which information was taken in the housing census. The published subjects included occupancy and tenure status, value of home or monthly rent, size of household and race of head, type of structure, exterior material, year built, conversion,
state of repair, number of rooms, housing facilities and equipment, and mortgage status. These general characteristics were presented for states; within states for area (urban, rural-nonfarm, rural-farm), cities of 50,000 inhabitants or more, metropolitan districts, and counties; and within counties for urban places and rural areas.

The third series of housing bulletins, "Housing, Third Series, Characteristics by Monthly Rent or Value,' was completed between October 1942 and March 1943. After editing and assembling, the series was released in 1943, as Sixteenth Census - - Housing, Volume 111 --Characteristics by Monthly Rent or Value, consisting of 3 parts--a U.S. summary and two parts devoted to state data. The statistics presented in this volume were cross-classifications of monthly rent or value of homes by type and age of structure, state of repair, number of rooms, size of household and race of head, persons per room, housing facilities and equipment, and mortgage status. The data were presented for states and within states by area (urban, rural-nonfarm, rural-farm), cities of 50,000 or more inhabitants, and larger metropolitan districts.

The final series of housing data, "Housing, Fourth Series, Mortgages on Owner-Occupied Nonfarm Homes, " was also completed between October 1942 and March 1943. Under the title, Sixteenth Census • . Housing, Volume IV--Mortgages on Owner-Occupied Nonfarm Homes, this series was also edited and published in 1943. it also consisted of three parts, a U.S. summary and two parts of data by state. Also included in the published volume were two supplements to the fourth series of bulletins: 'Supplement A, Homes Built in 1935-1940,' and, 'Supplement B, Homes Occupied by Nonwhite Owners.' The data presented on first mortgages included the amount of outstanding indebtedness, type of payment, frequency and amount of payment, interest rate, and holder of mortgage; data on all mortgages included value of the property, estimated rental value, year built, and race of occupants. Also shown are data on properties with junior mortgages and the outstanding indebtedness on first and junior mortgages. The data are presented for the United States, each state, and within states for cities of 50,000 inhabitants or more and large metropolitan districts.

In addition to these bulletins which were incorporated into the final reports, there was a bulletin which was not incorporated into the final reports, 'Population and Housing, Statistics for Census Tracts. This bulletin consisted of 58 pamphlets, issued between 1941 and 1943, which covered 60 tracted cities. The data presented in this bulletin included such population data as sex, age, race, nativity, citizenship, country of birth, education, employment status, class of worker, and major occupational group; housing data included occupancy status, tenure, value or rent, type of structure, state of repair and plumbing equipment, size of household, race of household head, persons per room, radio, refrigeration equipment, and heating fuel by type of heating equipment.

The Census Bureau also published the results of the first tabulations of the 1940 census data in several series of preliminary releases. Most of these preliminary releases were later incorporated into bulletins and final reports. Provided below are lists of (1) those preliminary releases for which the data was not presented
in other reports, and (2) final reports of the 1940 Censuses of Population and Housing, other than the volumes described above.[2]
[2] These lists were compiled from U.S. Department of Commerce, Bureau of the Census, Catalog of Publications 1790-1972 (Washington, Covernment Printing Office, 1974), pp. 84-113, 125-126.

## Preliminary Releases

Sixteenth Census of the United States: 1940. Series P-3:
No. 23. Population. Japanese population of the United States and its territories and possessions. December 9, 1941. 3 p.

No. 24. Population. Japanese population by nativity or citizenship in selected cities in the United States: 1940. December 10, 1941. 1 p.

No. 25. Population. Japanese population in the Pacific Coast States by sex and nativity or citizenship, by counties: 1940. December 11, 1941. 5 p .

-     - Series P-9:

No. 1. Population. Foreign-born Cermans and Italians in selected cities of the United States. December 12, 1941. 2 p.

No. 4. Population. Citizenship of the foreign-bom white population in selected cities of the United States. December 16, 1941. 3 p.

No. 5. Japanese population in selected counties and cities of the United States by sex and nativity or citizenship: 1940. December 19, 1941. 49 p.

No. 8. Population. Preliminary figures on employment status, occupation, and industry for the Japanese population of the Territory of Hawaii: 1940. February 2, 1942. 3 p .

No. 9. Population. Characteristics of the Japanese population of the Territory of Hawaii: 1940. February 2, 1942. 3 p.

No. 11. Population. Trends in the proportion of the nation's labor force engaged in agriculture: 1820 to 1940. March 28, 1942. 2 p.

No. 13. Population. Reserve labor supply among women in the United States. May 11, 1942. 4 p.

- . Series P-10:

No. 20. Population. Racial composition of the urban and rural population of the United States, by regions, divisions, and States: 1940. November 14, 1942. 6 .

No. 21. Population. Age, color, and sex composition of the population in urban places classified by size and in rural areas, for the United States, by regions: 1940. March 5, 1943. 8 p.

-     - Series P-14:

No. 13. Population. All experienced persons in the labor force by occupation and industry, for the United States: 1940. October 29, 1943. 10 p.

- . Series P-15:

No. 5. Population. Foreign white stock of German and Italian origin: 1940. September 30, 1942. 6 p.

- . Series $\mathrm{H}-3$ :

No. 2. Housing. Urban vacancy in the United States by county: 1940. May 23, 1941. 1 p. and map.

No. 3. Housing. Housing figures for urban places classified by size of place, for the United States and geographic divisions: 1940. September 8, 1941. 4 p.

## Final Reports

Sixteenth Census of the United States: 1940. Population. Characteristics of persons not in the labor force, 14 years old and over. Age, sex, color, household relationship, months worked in 1939, and usual major occupation group. 1943. vi, 117 p .

- . Population. Characteristics of the nonwhite population by race. 1943. vi, 112 p.
- . Population. Comparative occupation statistics for the United States, 1870 to 1940. A comparison of the 1930 and 1940 census occupation and industry classifications and statistics; a comparable series of occupation statistics, 1870 to 1930; and a social-economic grouping of the labor force, 1910 to 1940, by Dr. Alba M. Edwards. 1943. xii, 206 p.
- . Population. Differential fertility, 1940 and 1910. . . 1943-1947. 5 v.

The reports in this series are based on tabulations of samples of the census returns for 1940 and 1910.

Fertility by duration of marriage, based upon tabulations from the Sixteenth and Thirteenth Censuses of the United States: 1940 and 1910. 1947. vi, 338 p. (Running title, Sixteenth Census of the United States: 1940, omitted.)

Fertility for States and large cities. 1943. vii, 281 p.
Standardized fertility rates and reproduction rates. A supplement to the report designated Fertility for States and large cities. 1944. vi, 40 p.

Women by number of children ever born. 1945. ix, 410 p.
Women by number of children under 5 years old. 1945. ix, 265 p.
-. . Population. Education . . . 1943-1947. 3 v.
Educational attainment by economic characteristics and marital status based upon tabulations from the Sixteenth Census of the United States: 1940.
1947. vi, 226 p. (Running title, Sixteenth Census of the United States: 1940, omitted.)

Educational attainment of children by rental value of home. 1945. iv, 50 p.

Education, occupation and household relationship of males 18 to 44 years old. Prepared by the Division of Population, Bureau of the Census, of the Department of Commerce, in cooperation with the Special Services Division of the War Department. 1943. vi, 23 p.

-     - Population. Estimates of labor force, employment, and unemployment in the United States, 1940 and 1930. 1944. vi, 18 p.
-. . Population. Internal migration, 1935 to 1940 . . . 4 v. 1943-1946.
Age of migrants. 1946. iv, 382 p.
Color and sex of migrants. 1943. viii, 490 p.
Economic characteristics of migrants. 1946. v, 223 p.
Social characteristics of migrants. 1946. vi, 270 p.
- . Population. The labor force (sample statistics). . . 1943. 6 v.

The reports in this series are based on tabulations of samples of the 1940 census returns.

Employment and family characteristics of nomen. vi, 212 p.
Employment and personal characteristics. vi, 177 p.
Industrial characteristics. iv, 174 p .
Occupational characteristics. vi, 256 p.
Usual occupation. iv, 63 p.
Wage or salary income in 1939. vi, 194 p.

- . Population. Nativity and parentage of the white population . . .1943. 3 v .

The reports in this series are based in whole or in part on tabulations of samples of the population returns of the 1940 census.

Country of origin of the foreign stock by nativity, citizenship, age, and value or rent of home, for States and large cities. iv, 122 p .

General characteristics, age, marital status, and education, for States and large cities. iv, 279 p.

Mother tongue, by nativity, parentage, country of origin, and age, for States and large cities. $v, 58 \mathrm{p}$.

-     - Population. Special report on institutional population 14 years old and over, characteristics of inmates in penal institutions and in institutions for the delinquent, defective, and dependent. $1943 \mathrm{iv}, 361 \mathrm{p}$.
- . Population. State of birth of the native population. 1944. viii, 78 p.
-     - Population. Unincorporated communities, United States, by States. Total population of unincorporated communities having 500 or more inhabitants for which separate figures could be compiled. 1943. iv, 32 p.
- . Population. Families . . . 1943-1944. 4 v.

Employment status; regions and cities of $1,000,000$ or more. 1943. $v$, 110 p.

Family wage or salary income in 1939; regions and cities of 1,000,000 or more. 1943. iv, 156 p.

Size of family and age of head; regions and cities of 1,000,000 or more. 1944. iv, 127 p .

Types of families; regions and cities of $1,000,000$ or more. 1943. vi, 221 p.

-     - Population and housing. Families. Characteristics of rural-farm families. Regions and divisions. 1943. iv, 82 p.
-     - Population and housing. Families. General characteristics. States, cities of 100,000 or more, and metropolitan districts of 200,000 or more. 1943. vi, 332 p.
-     - Population and housing. Families. Income and rent. Regions, cities of $1,000,000$ or more, and metropolitan districts of $1,000,000$ or more. 1943. v, 237 p. (Subtitle should read: For regions and for metropolitan districts of $1,000,000$ or more . . . -Slip attached to title page.)
-     - Population and housing. Families. Tenure and rent. Regions, cities of $1,000,000$ or more, and metropolitan districts of 500,000 or more. 1943. iv, 141 p.


## Territories and Possessions

The following final reports were to have been published in a single bound volume entitled 'Sixteenth Census of the United States: 1940. Territories and Possessions," but such volume was never issued.

Alaska

-     - Population. Characteristics of the population (with limited data on housing). Alaska. 1943. iv, 20 p.


## Hawaii

- . Population. Second series. Characteristics of the population. Hawaii. 1943. iv, 35 p.
- . Housing. Ceneral characteristics. Hawaii. 1943. v, 27 p.

American Samoa

- . American Samoa. Population, agriculture. 1941. iv, 12 p.

Guam
-. . Guam. Population, agriculture. 1941. iv, 18 p.
Panama Canal Zone

- . Panama Canal Zone. Population. 1941. iv, 28 p.


## Puerto Rico

-. Puerto Rico. Population. Bulletin no. 1-4. 1942-1946. 4 pts.

- . . . . Puerto Rico. Housing. General characteristics. 1943. vii, 121 p.

Virgin Islands (U.S.)

- . Population and housing. Ceneral characteristics. Virgin Islands of the United States. 1943. iv, 22 p.


## Chapter Six

## EVALUATION OF THE 1940 CENSUS

Available documents indicate that the Census Bureau conducted a post-census evaluation of the questions and procedures used in conducting the 1940 Censuses of Population and Housing. [1] While the evaluation covered the entire schedule and procedures, the available documents emphasize the questions which obtained information on labor force participation and income.

## Analysis of Employment Status Questions

The evaluation documents noted a "considerable amount of error" in the employment status questions. Due to this error, coding clerks had been required to check schedules for consistency among the employment status items. In addition, the Census Bureau hired a special group of editors to check the returns. Based upon analysis of the 1940 procedures, it was recommended that future censuses have fewer and more simple questions, with correspondingly shorter instructions. Recommendations were also made to improve the data presented in tabulations.

A common error was found to be the failure of enumerators to record employment status answers for scattered individuals within an enumeration district (E. D.). In these cases, a code of 'employment status not reported" was assigned. Cost considerations prevented the imputation of such missing data. However, when there were entries omitted for large groups of persons, the specially trained editors provided imputed codes. The final count for the category employment status not reported" was 1,987,140. The evaluation noted that the Bureau had come under criticism for this large number. Critics suggested that it included many unemployed persons. The evaluation provided some suggestions for reducing the size of the unknown group, including extending the imputation procedure to the scattered instances of omissions and making a category to the effect of 'presumed to be in the labor force, but particular category unknown."

Among particular items, there was large-scale misreporting of public emergency workers. The number of these workers reported on. census returns was 2,400,000, while the number indicated by records of emergency work agencies was $3,500,000$. It was found that many public emergency workers were reported as having nonemergency work, seeking work, or in school. Special coders reexamined the data returns, raising the final census total of public emergency workers to $2,529,606$. This corrected figure still represented a large undercount when compared with the agency figures. These errors of misclassification caused error in the total number of employed and unemployed workers for each area and errors in the relation between employment status and other characteristics.
[1] U.S. Department of Commerce, Bureau of the Census, "A Critical Analysis of the Questions Used in the Sixteenth Decennial Census of Population and Housing. ${ }^{\text {- }}$ These documents, most of which are unsigned, were obtained from the library of the Census History Staff.

Corrected data on employment status by age and sex based upon estimates were published in a final report.[2]

Additional errors were found in the reports of seasonal workers, who were reported as not in the labor force if they were not at work or seeking work during the census week. It was recommended that future censuses make it possible to identify such workers.

There were also difficulties in obtaining correct reports of unpaid family workers due to discrepancies in enumerator interpretations. These problems were considered to be particularly acute in rural areas where there was a lack of any clear distinction in the typical farm household between workers in the family enterprise and homemakers or dependents.

Coding difficulties were also found in the returns of persons who had jobs but who were not at work during the census week. Persons in this category could have been temporarily out of work for up to four weeks and still have been considered to be in the labor force. A large number of the persons retumed in this category had in fact been out of work for a longer period of time. About 300,000 persons were reassigned by the special coders into other categories, producing a corrected total for the category of 1,120,000.

Another problem identified in the evaluation of the employment status questions was the status of those persons identified as "not in the labor force." Persons in this category were determined by successive elimination on the basis of answers to the employment status questions (see Appendix 1, questions 21-26 on the population schedule). The evaluation argued that this procedure introduced uncertainty into the determination of the "not in the labor force" category. Difficulties with this category included enumerators returning children who performed chores at home and housewives as "at work." In addition, the evaluation found that the some of the codes used to classify those not in the labor force were ambiguous. Recommendations were made to eliminate ambiguity in future censuses.

The category of "inmates of institutions" also provided difficulties. It was found that enumerators' entries for institutional inmates were not reliable. Many enumerators failed to distinguish between employees of institutions and their families, on the one hand, and residents of institutions, on the other hand. Institutions were often not identified and frequently quasi-households, such as monasteries, convents, and other homes, were identified as institutions. it was also found that there was inconsistency in the exclusion of inmates of various types of institutions from the labor force. Several recommendations were made to correct these problems.
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[2] U.S. Department of Commerce, Bureau of the Census, 16th Census of the United States. Population. Estimates of Labor Force, Employment, and Unemployment, in the United States, 1940 and 1930. Washington, D.C.:Covernment Printing Office, 1944.

While class of morker data had been collected since 1910, the first attempt at publishing these data was made in 1940. Efforts were made to improve the 1940 data by giving more extensive instructions to enumerators and spending more time editing the data. One of the central reasons for collecting these data was to be able to distinguish among wage or salary workers, employers, own-account workers, and unpaid family workers. Unfortunately, the evaluation indicated that most enumerators had not clearly understood these distinctions. Recommendations were made to change the terminology used on the schedules and to instruct enume rators.

Other problems found in the class of worker data included the failure of enumerators to distinguish clearly between govemment and private workers. There was also confusion over the distinction between employers and own-account workers, resulting in a combination of these categories in the published reports.

Omitted entries were also a problem for the class of worker question. In a large number of E. D.'s, no reports were made for this question. Moreover, in many E. D.'s, the column had been left blank for a large proportion of workers. Such omissions were most common in E. D.'s made up almost entirely of one or another class of worker groups. In these cases, the enumerators apparently only filled in the class of worker column for the exceptional groups. In cases for which the class of worker data were missing, coders were instructed to determine the most probable entry on the basis of the occupation and industry codes, the wage or salary income entry, and personal characteristics. When no definite indication was obtainable, coders were instructed to classify the person eprivate wage or salary worker.' Only in cases in which neither occupation nor industry was reported was the category 'class of worker not reported' entered in the column.

Analysis of Occupation and Industry Questions
Based upon the problems which occurred in the coding of 1940 returns, the evaluation made various recommendations related to occupation and industry coding. These suggestions included specific recommendations for developing the alphabetical index of occupations and industries, for providing instructions to enumerators, for operating the research center, for special coding problems, and for occupation and industry classification.

The suggestions for developing the alphabetical index of occupations and industries were oriented toward obtaining maximum consistency between the two indices and cbtaining in advance information necessary for specific codes, in particular codes for various types of govemmental activities. The suggestions for providing instructions to enumerators largely concemed specific distinctions the enumerators needed to make in coding and occupations and industries which needed special instructions to the enumerators.

The research center contained directories and other materials used in the editing and coding of occupations and industries. Six clerks from the coding operations worked in the research center, with one acting as the section chief. These clerks were responsible for obtaining the information necessary to resolve problems in editing and coding. The evaluation made suggestions about directories, lists,
and other materials that would be useful in future operations of the research center.

Suggestions for the occupation and industry classifications generally were recommendations that specific items be given more attention. These recommendations usually attempted to reduce the ambiguity of categories. In addition, one general recommendation was made that there should be a determination of the characteristics (age, sex, education, income, etc.) to be used in the elimination of persons from certain occupations. It was argued that the criteria for restriction be made on the basis of information on the requirements in effect at that time for an individual occupation.[3]

## Analysis of Income Questions

In 1940, the first attempt was made to obtain income data in the population census. Difficulties in obtaining this information were anticipated, and attempts were made to reduce these difficulties and minimize any opposition.[4] One concession which had been made in order to minimize opposition had been to ask only if the amount of income from sources other than wages or salary had exceeded $\$ 50$ rather than asking the exact amount. The evaluation noted that failure to obtain the amount of other income limited the value of the census data as an indicator of economic well-being. It was further argued that this lack of information limited the analysis of the relationship between economic status and personal characteristics. As a result, the evaluation maintained that the data on value or rental of home provided a better indication of economic status than did the income data. It was recommended that future income inquiries should be directed toward obtaining data on total income rather than just wage and salary income.

Despite concerns over public reluctance to report income data, the evaluation indicated a general completeness in reporting for those groups for whom wage or salary income was most significant. On the wage or salary income question, the incidence of no report among wage and salary workers was 2.3 percent; among other persons in the labor force, 14.1 percent failed to report; and, among persons not in the labor force, 17.9 percent failed to report. On the "other income" question, the only category for which the evaluation was able to determine the incidence of no report was wage or salary workers, of whom 2.1 percent had no report.

In the coding operations, no attempt was made to determine the proper entries for persons with missing income data. However, in the transcription of family income data, certain missing income reports were eliminated in order to avoid having a
[3] It is possible that this is a reference to the problems encountered in coding children and women in "unusual' occupations; see above, p. 77, and Margo Conk, 'Accuracy, Efficiency, and Bias: The Interpretation of Women's Work in the U.S. Census Statistics of Occupations, 1890-1940, " Historical Methods 14(May 1981): 65-72.
[4] Problems with the inclusion of income questions and the attempts by the Census Bureau to overcome opposition are described more fully above, see pp. 17-18.
family income listed as unknown when members who were housewives or students failed to report income. Families were only classified as wage or salary income not reported if a report on wage or salary income was missing for one or more members who were in the labor force and classified as a wage or salary norker or who were not in the labor force but worked one or more weeks in 1939. In cases in which the question on wage or salary income was not answered for employers, own-account workers, unpaid family workers, new workers, or persons not in the labor force (except housewives and students), the coders assumed the person had no wage or salary income. The evaluation maintained that many enumerators had assumed that the question was inappropriate or the answer was obvious for such persons and, therefore, left the wage or salary income column blank.

Errors in the income data were often difficult to detect. However, some were recurrent and could be readily detected and eliminated by the group of special editors. The evaluation provided three examples of such easily detected errors:
(1) There frequently occurred a combination of entries of a report of wage or salary income and "no" in the other income column for the majority of employers and own-account workers in particular E. D.'s. The presumption was made that the enumerators had considered profits as wage income in these cases. Some 240,885 such combinations were cancelled in special editing.
(2) There were retums for which there was a consistent "yes" in the other income column for unpaid family norkers, housewives, and students living at home. In these cases it was assumed that the enumerator or respondent considered housing and board supplied to the family member by the head as other incorm. The specia! editors sance!!ed 73,807 such entries.
(3) In institutional households, such as convents, monasteries, labor camps, etc., there was often a failure on the part of workers to report nonwage income. It was assumed that enumerators or respondents did not regard room and board furnished to employees as other income. In 5,247 cases, the other income column was edited to "yes."

The evaluation made some recommendations with regard to the tabulations of the income data. First, on the assumption that the income questions remained the same in future censuses, it recommended that counts of persons with no report of "other income" be made separately for all groups in the labor force and for persons not in the labor force. The 1940 tabulation program had only made such a count for the category of wage or salary workers. Second, it was recommended that a special code be assigned to persons with no income. It was argued that such a code would facilitate tabulations and the presentation of data on such persons. Third, it was urged that future censuses utilize common intervals in income tabulations for all subdivisions of the population in order to facilitate the presentation of summary data. Finally, it was urged that future censuses tabulate family income distributions for areas as small as possible, i.e., if not individual cities, at least city-size groups. Such tabulations had been planned for 1940. However, a shortage of funds restricted the family tabulations to the five-percent sample and, thus, made it impossible to provide data for small areas.

## Analysis of Other Labor Force Questions

The evaluation indicated that the question concerning number of hours worked during the week prior to the census provided little difficulty, except for nonwage workers who did not follow regular schedules. However, it was noted that the instructions for such workers seemed clear and concise and required no modifications. It was suggested that these data might have been put to greater use in distinguishing part-time workers from both the fully employed and those completely idle.

There were greater problems with the question concerning the duration of unemployment. Responses to this question were frequently not reported, especially for emergency workers, new workers, and persons seeking work who had last been employed as nonwage workers. The non-response rate was also significant for wage or salary norkers. Furthermore, the evaluation suggested that the reports were largely approximations and that the duration of unemployment was often exaggerated.

Despite these weaknesses, the evaluation concluded that the data on duration of unemployment were valuable when related to characteristics that allowed the determination of differences in the severity of unemployment by various types of workers. Thus, the evaluation urged inclusion of the question in amy future censuses taken at times when unemployment presented serious problems. The evaluation further argued that a sample question would probably be sufficient for the purposes. It was also recommended that in the future the instructions to enumerators be shortened and simplified.

An additional problem with the data on duration of unemployment was also shared by the data on number of weeks worked in 1939. There was a marked tendency for returns to concentrate on multiples of four weeks. The evaluation felt that this concentration indicated that enumerators had determined the number of months unemployed or worked and multiplied by four. The use of four, rather than four and one-third, weeks per month introduced a bias for which an allowance had to be made. In the published tables, the data were presented in terms of months rather than weeks. The evaluation recommended that in the future these questions be asked in terms of months rather than weeks.

There were also difficulties with non-response for the question on weeks worked. Of about $10,000,000$ persons not in the labor force, over 20 percent of the class failed to report on this question. Of those who did report, only $2,600,000$ indicated that they had worked one week or more in 1939. The evaluation argued that there was evidence which indicated this latter number should have been considerably larger. Among those persons in the labor force, reliable data was obtained only on wage or salary workers and detailed statistics were tabulated on a 100 -percent basis only for this group. The evaluation recommended that this question be asked in the future only if the wage or salary income question were also asked, since the main purpose of the weeks worked question was to provide data for cross-classification for wage or salary income. If the question were asked, it was recommended that it be changed to months worked and that the instructions to enumerators be simplified.

## Analysis of General Population Questions

The document pertaining to the evaluation of the general population questions did not review all the questions on the population schedule. Questions which had appeared consistently on the schedule in past censuses do not appear to have been evaluated. Whether these were deliberate omissions rather than a result of different criteria for evaluation is impossible to determine.

The evaluation indicated that there were problems with age bias in the 1940 returns. It was suggested that there had been a 'large scale over-statement of age by persons 55 to 64 years old, particularly Negroes and Southern whites." Details of this over-statement were not provided in the evaluation document. It was suggested that the problem of age bias be made the subject of a complete investigation. It was also recommended that future censuses supplement the question on age at last birthday with a question on date of birth.

The evaluation only briefly examined the question of country of birth. Recommendations were made with regard to a few coding difficulties, and a classification used in publication. The evaluation also noted that the results obtained for the mother tongue questions were not the same for the second generation in 1940 as they had been for that generation in 1920 and 1910. In the 1940 census, many native white persons of foreign or mixed parentage reported their mother tongue to be English. It was thought that many persons of foreign mother tongue were being missed. Coding procedures used in 1920 and 1910 had assigned the mother tongue of the parents to the children. The evaluation stressed that this method probably over-stated the existence of some foreign mother tongues. The evaluation thought it was necessary to resolve the discrepancy between the earlier procedure and the 1940 responses and recommended that suggestions be solicited on the proper system to use in future censuses.

With regard to the 1935 place of, residence questions, the evaluation maintained that the term 'same place" had been confusing to the enumerators. In particular, it had been confused with 'same house' and 'same farm." As a result, problems of distinguishing among the various types of non-migrants--same house, same farm, and same county--arose in the special editing operation. It was suggested that if these questions were used in the next census, the term "same city or town" be substituted for "same place."

The evaluation also indicated that there was bias in the migration data. As an example, it was maintained that the number of out-migrants was always too large for urban areas and for cities. It was also argued that there were some difficulties with reports on urban or rural residence of origin. The evaluation maintained that while the absolute numbers on origin were not right, there would still be a correlation with various characteristics, making some generalizations worthwhile. It was suggested that in order to obtain a good classification on the question, it would be necessary for the enumerator to return the exact place where the informant was found or to have precisely worded questions which stress the limits of incorporated places. An alternative raised by the evaluation suggested that if there was only need to know the county of origin, there would be no need to ask for the city of origin, and the problems with classifying the place of origin would be reduced.

Recommendations on the organization of special editing for the migration questions were also made. These suggestions concerned the use of roving editors to assist the editing process. It was also suggested that migration coding be arranged so that sorting could be done on the basis of a single column rather than the two columns required in 1940.

The 1940 census had included a question on the sample line asking each person 14 years of age and over questions about social security coverage. Comparison of the tabulations on these questions with estimates of the total number of persons living with account numbers indicated that the census reports for social security account number holders were seriously deficient. Social Security Board estimates indicated that there were about $47,000,000$ persons with social security or railroad retirement numbers at the time of the census. However, only $33,500,000$ persons were reported in the census as having account numbers. In addition, about $20,000,000$ persons falled to report on the questions. Enumerators were reported to have had difficulty obtaining accurate reports from persons no longer in the labor force and from those who had received account numbers at one time but were no longer engaged in employment covered by the social security law. The serious deficiencies in the data prohibited publication of the tabulations on social security status, except for persons not in the labor force--cases for which the presence of an account number was used as an indication of previous labor market participation. The evaluation concluded that it would be unwise to attempt a similar inquiry in future censuses.

Underenumeration
The evaluation document indicated that attempts were made to estimate underenumeration by using the preliminary sample data (S-card). These estimates were made for the total population by age. However, the results were called 'rather approximate" and were not reported. A suggestion was made that the subject, along with a closely related problem of age bias, be given thorough examination. It was also suggested that particular attention should be given to underenumeration of children under 5 years of age.

One attempt to estimate the extent of underenumeration in 1940 was made by Daniel O. Price.[5] He compared adjusted 1940 census figures with records from Selective Service registration to obtain the underenumeration estimate. The Selective Service Registration figures of June 30,1941 , showed the number of males 21-35 years old on October 16, 1940. Price assumed that this registration had been 100 percent complete. For comparison, he adjusted the census figures by "aging" the population by 6.5 months and by eliminating the number of deaths in the period. Comparisons were then made for both the total population and the Negro population in the age-sex group.

Price found that census figures for the total population in the age-sex group had an undercount of 2.8 percent. This figure rose slightly, to 3.1 percent, when adjusted for those in the armed forces (who were not subject to the compulsory registration). He maintained that this figure did not cause 'great concern." However, the figures for the Negro age-sex group indicated an adjusted estimate
[5] Price, "A Check on Underenumeration in the 1940 Census,' American Sociological Review, 12(1947):44-49.
for underenumeration of 13 percent, a number which was cause for concern. Additionally, he noted that there were significant variations in underenumeration of Negroes by state. While his analysis indicated that migration between the Census date and the Selective Service date accounted for much of the variation by state, this cause could not be separated from an assumption that Negroes in urban areas were less completely enumerated than were Negroes in rural areas.

In addition to these estimates of underenumeration, Price also calculated correlations between the discrepancies and population characteristics, such as density, percent urban, education, and telephones per 1,000 population. He reported that the correlation between the discrepancies and education was on the borderline of significance. However, statistically significant correlations were found between the discrepancies and net male migration, 1935-1940 ( $R=.50$ ), and between the discrepancies and the percentage population change, 1940-1941 ( $R=.59$ ). Price concluded that the variations by state in the discrepancies for the total population were made of two components: (1) the actual underenumeration, and (2) migration between the two periods. However, since these effects could not be separated, it was not possible to obtain accurate estimates of underenumeration by states.

Batschelet, C. E.
1942 "General Principles of Tract Delimitation." Journal of the American Statistical Association 37 (June): 245-246.

Brunsman, Howard C.
1941 'The Housing Census of 1940." Journal of the American Statistical Association 36(September):393-400.

Brunsman, Howard C., and Dave Lowery
1943 'Facts from the 1940 Census of Housing." Journal of Land and Public Utility Economics 19(February):89-93.

Committee on Covermment Statistics and Information Services
1937 Covemment Statistics. New York: Social Science Research Council. Conk, Margo

1978 'Occupational Classification in the United States Census: 187-1940, Journal of Interdisciplinary History 9(Summer):111-130.

1981 'Accuracy, Efficiency, and Bias: The Interpretation of Women's Work in the U.S. Census Statistics of Occupations, 1890-1940,' Historical Methods 14 (May):65-72.

Deming, W. Edwards
1940 'Sampling Problems of the 1940 Census,' in Cowles Commission for Research in Economics, Report of Sixth Annual Research Conference on Economics and Statistics. Chicago: UC Press.

Deming, W. Edwards, and Leon Ceoffrey
1941 'On Sample Inspection in the Processsing of Census Returns." Journal of the American Statistical Association 36 (September):351-360.

Deming, W. Edwards, and Frederick F. Stephan
1941 "On the Interpretation of Censuses as Samples." Lournal of the American Statistical Association 36 (March):45-50.

Deming, W. Edwards, et al.
1942 'Errors in Card Punching." Journal of the American Statistical Association 37 (December):525-536.

Eckler, A. Ross
1941 Employment and Income Statistics.' Journal of the American Statistical Association 36(September):381-386.

1972 The Bureau of the Census. New York: Praeger Publishers.
Edwards, Alba M.
1940 Alphabetic Index of Occupations and Industries. Washington, D.C.: Government Printing Office.

1941 "Occupation and Industry Statistics:" Journal of the American Statistical Association 36(September):387-392.

Givens, Meredith B.
1934 'An Experiment in Advisory Service: The Committee on Covernment Statistics and Information Services, ${ }^{\text {: }}$ Journal of the American Statistical Association 29 (December):396.

Coldfield, Edwin D.
1958 'Decennial Census and Current Population Survey Data on Income," in Conference on Research in Income and Wealth of the National Bureau of Economic Research, Studies in Income and Wealth, Volume 23, An Appraisal of the 1950 Census Income Data. Princeton: Princeton University Press.

Hansen, Morris H., and W. Edwards Deming,
1943 'On Some Census Aids to Sampling." Journal of the American Statistical Association 38(September):353-357.

Hauser, Philip M.
1941 a "Research Possibilities in the 1940 Census." American Sociological Review 6(August):463-470.

1941 b "The Use of Sampling in the Census." Journal of the American Statistical Association 36(September):369-375.

1942 "Proposed Annual Sample Census of Population." Journal of the American Statistical Association 37 (February):81-88.

1945 "Wartime Developments in Census Statistics." American Sociological Review 10(April):160-169.

1947 "The Statistical Program of the Census Bureau." Journal of the American Statistical Association 42(March):24-30.

1949 "The Labor Force and Gainful Workers-Concept, Measurement, and Comparability. American Journal of Sociology 54 (January):338-355.

Price, Daniel O.
1947 "A Check on Underenumeration in the 1940 Census." American Sociological Review 12(February):44-49.

Proudfoot, Malcolm J.
1940a "New Inquiries for the Census of 1940." Journal of Land and Public Utility Economics 16(February):102-104.

1940b "The United States Census of 1940." Geographical Review 30(April): 301-303.

Reed, Vergil D.
1942 "Business Uses of Data by Census Tracts." Journal of the American Statistical Association 37 (June): 238-244.

Scott, Ann Herbert
1968 Census, U.S.A.: Fact Finding for the American People, 1790-1970. New York: Seabury Press.

Shryock, Henry S., Jr.
1941 "Ceneral Population Statistics." Journal of the American Statistical Association 36(September): 376-380.

1957 'The Quality of the 1940 Census Data on Migration." Pp. 30-36 in Donald J. Bogue, Henry S. Shryock, Jr., and Siegfried A Hoermann, eds., Scripps Foundation Studies in Population Distribution, No. 5, Subregional Migration in the United States, 1935-1940, Vol. I, Streams of Migration. Oxford, OH : Scripps Foundation.

Stephan, Frederick F., W. Edwards Deming, and Morris H. Hansen
1940 "The Sampling Procedure of the 1940 Population Census." Journal of the American Statistical Association 35 (December): 615-630.

Struve, A. W. von
1940 "Ceography in the Census Bureau." Economic Ceography 16(July): 275-280.

Truesdell, Leon E.

1935 "The Mechanics of the Tabulation of the Population Census." Journal of the American Statistical Association 30 (March):89-94.

1941 "New Features of the 1940 Population Census." Journal of the American Statistical Association 36(September): 361-368.

1965 The Development of Punch Card Tabulation in the Bureau of the Census 1890-1940, Washington, D.C.: U.S. Government Printing Office.
U.S. Department of Commerce

1936 24th Annual Report of the Secretary of Commerce: June 30, 1936. Washington, D.C.: Government Printing Office.

1938 26th Annual Report of the Secretary of Commerce, June 30, 1938.
1939 27th Annual Report of the Secretary of Commerce: June 30, 1939. Washington, D.C.: Covernment Printing Office.

1940 28th Annual Report of the Secretary of Commerce: June 30, 1940. Washington, D.C.: Government Printing Office.

1941 29th Annual Report of the Secretary of Commerce: June 30, 1941. Washington, D.C.: Covernment Printing Office.

1942 30th Annual Report of the Secretary of Commerce: June 30, 1942. Washington, D.C.: Covernment Printing Office.

## U.S. Department of Commerce, Bureau of the Census

1939 "General Memorandum on Changes Under Consideration for the 1940 Census of Population," prepared by Leon E. Truesdell. Washington, D.C.: Bureau of the Census

1940 'The Origin of the Wage Income Question on the 1940 Population Schedule, prepared by Leon E. Truesdell. Washington, D.C.: Bureau of the Census.

1941 "On the Sampling Methods in the 1940 Population Census," prepared by Frederick F. Stephen and W. Edwards Deming. Washington, D.C.: Bureau of the Census.

1942 "The Elimination of Unknown Ages in the 1940 Population Census," prepared by W. Edwards Deming. Washington, D.C.: Bureau of the Census.

1974 Bureau of the Census Catalog of Publications, 1790-1972. Washington, D.C.: Government Printing Office.
U.S. Department of Commerce, Office of Federal Statistical Policy and Standards

1978 Revolution in Covernment Statistics, 1926-1976, prepared by Joseph W. Duncan and William C. Shelton. Washington, D.C.: Covernment Printing Office.

## SOURCES OF MATERIALS AT THE NATIONAL ARCHIVES

Record Group 29 (Bureau of the Census) Acquisition Numbers and File Descriptions:

NN364-101; Series A-Boxes 1-2, Series C-Boxes 1-4.
(Miscellaneous forms)
NN367-1; 7 Boxes-With Numbered Files.
(Includes files of Alba M. Edwards)

## NN36958; Looseleaf volumes:

1939 Trial Census (2 volumes)
1940 Census of Population ( 7 volumes)
(Includes forms used in enumeration and processing)
NN370-128;Box 21-File Series 2500.
(Files of the Chief Clerk, Bureau of the Census)

## Appendix 1 <br> 1940 CENSUS POPULATION AND HOUSINC SOHEDULES

Figure 1: Population Schedule
Figure 2: Heading Information Section of Population Schedule
Figure 3: 'Basic Line' Section of Population Schedule
Figure 4: 'Supplementary Lines" Section of Population Schedule
Figure 5: Housing (Occupied Dwelling) Schedule


Figure 1

|  | LOCATION |  | HOUSEHOLD DATA |  |  |  | NAMB | RELATION | PERSONAL DESCRIPTIOA |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\begin{aligned} & d \\ & 0 \\ & 0.0 \end{aligned}$ |  |  | Xamber of baquepold in order of |  |  |  | Name of each person whose usual pince of rosidence on April 1, 1840, was in this household. <br> ES BURE TO TMCLODE: <br> 1. Peranne Lemporarily sheme from beacobold. Withe "A $b$ " ather na men of auch parsone. <br> 2. Chlidran inder 1 ymar of arro. Wille "Topant" chid hes mod brea glrena arod asmo. <br>  | Relallonalip ot then par. eon in thi boad or the honerpmid, 20 vifo, dauthor, faltinf: min, bodere. loderis's wilf, Dervint, birod hand, ele. |  | 8 8 8 8 8 | 3 3 3 3 3 3 3 4 | 合 |
|  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | $8 \quad 1$ | 8 | 10 | 11 | 12 |
| 1 |  |  |  |  |  |  |  |  |  |  |  |  |



$\qquad$Incorporated place
$\qquad$Ward of city
$\qquad$Township or otherdivision of county ............................................................ Nock
$\qquad$Institution

$\qquad$

DEPARTMENT OF COMMERCE-BUREAU OF THE CENSUS SIXTEENTH CENSUS OF THE UNITED STATES: 1940 POPULATION SCHEDULE


Figure 2



 1

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 － 21 人 －


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## Appendix 11

ORICINAL INSTRUCTIONS AND ADOENDA FOR CENERAL POPULATION COOINC (OPERATION 7)

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    Torn Y-327A
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だロアミミエ D DTIC！
JULT 31． 1940

## OPERATICT 7

## INSTRIJCTIONS FOR GEREPRL POPYLATTOI：COII：：E

CEAERAI IITETRUCTIC：TS

2．The purpous of the gencral coding of the Populetion Schedules is two－fold：（1）to translate specified gon－bunerical untries on the Population Schedules inco aumber codes，and（2） to odit apecified lreas for conaistemey．Mthough a careful examigation of earies for la－ dividual persons or bouscholds any revesi a auber of inconsisiancles，you are not to apand time 1n either findigg or corfecting any laconsistedelea other than those specified la the lastrico tions that follow．Other inconsistencies can be corrected more eccurately and efficiently in later mechanical operations．

2．Before you begin the work of coding the shedules，atudy cerefuliy the questior keedinge and the agmols and explagerory motes that are printed in the bottom eargin of the achedule，and read carefully the＂Inatruesions to mueratori，with parcicular attertion to pars． 413 to 627. which will ladicate tow the schedules ghould bave beed filled oit．Note，howover，that jou are pot to corsect any of the alstakea che emuarator may have ande because he did got follow the printed and oral ingeructions，except those specifled below．

3．Read also the＂Instructions for Phnching Population Iodividual Cerds $A$ and D，which Fill stow how the puncher wil use the various code aumers and correctiong that fou are to plece on the echedule．

4．Make all eorrections and code flgures with rcd pencil．

5．Cancelationg．Where it is necessary to cancel coepletely any item on she schedule，

 neoessary．Superfluous Earyizg of the schedules ls to be avolded．For examplo，if the eaus－ erator bas written＂Na＂in col． 16 for a person reported in col． 15 as born in the United States，draw a lide through the＂sia．＂Col． 16 will then be read as blank by the puacher．

6．Corfections．Vhere corroction is requirad in any column，first draw a sizgle hor－ lzontal lime throuzh the origianl entry．plecing tho line somewhe below the center of the apace between the lizes on the schedule，ajd anke the correct entry in the upper part of inis space．Since the correction will always be ande in red，it eay，in part，be written orer the orlejal entry made in black．Vake the $x$ ew entry as legible as passible for the puncter． These correotions aust be eade wthin the space between the lines，since the scbedule bolder used by the puncter peraita only one line to be visible at atme．

7．Thers ay entry 1s，at first glance，illefible or difficult to fead，cross it out and rewsite it，as indlcated abore．For example．if the ajo in col．il is written so poorly that at


8．Codes in coluris with entries．Special coluna have been provided for most of the code numbers required，but occasionaliy it le ascessary to write a code number in fhe same columala the enueretoris exify．For example，the entry m＂in col． 12 （Larital status）is sometimes to be coded＂7．＂Handle all rhese cases as correcilozs．that ls．first draw a horizontal line through the original entry and then write the code flgure in the ame apace，at one side of the arigisal entry if passible，otherwle above or below 18.

9．Befor beginaing the editing and coding，check the shet aumber in the upper right－hand cormer of each actedule to make sure that the ahoets aro arranget in consecutive order and that the＂A＂side of each sheet is up．Thero may be four sories or obeet numbers：
a. Hos. 2. 2. 3. to. Sor houjobolar eaurarased 1aregular order.
 opernelen 3.
 regulas order.

 no sheota numbered 100 or nore. If jou find a sheot number alasiag in any one of tho ocrios, or a abeet nubored 100 or noro, rofer zbe portfollo to your Soction Ctiof. on some shoota you any
 Population amd Houling matoblag olerk. Accopt auch changes an corroot. Do not change any sheat numbers.
13. do ooding is to be doae at-ixe presant elme on cols. 1 to 5, 7, 28 to 30, 34, 35, or 45 to 50. You are 20 zake no entrios in code cola. T. J. and O. "In ioze cases a Problem Reforral silp fill have bean attachod to the portfollo and will coatain additional instructions pa whioh oolune are not to be coded. Follow the instruetions given on this Referral silp."
12. Fach line of ontries that has not boon cancilod must bo ooded in the coluans specified, and in accordance mith the laatructions wheh follow. Canceled lines are those on which the line number in the extreze left-Eand colum of the sethedule has been canceled in elther red or
 be oiolicied: such linos are to bo codsd as if they were uncenceled. fina whole site of a gohodule is blank, cals. 1 to 34 ara not to be coded. "Yomever, cols. 36 to hb, even though bldak, are alway to be coded amd the proper codes eatered in code cols. I to $T$ and $V$ to $I$ unleas the aupleantary line has actually bean cancoled. $A$ ay uncanceled lize which you figd it jmposifble to code, such as one beariag the aotation 'Here ends block $\qquad$ ,' should be ratarrad 60 jour Section Chiof."
13. Confidential Rosort on Tags or Salary Incose. Bofore prooeeding whth the general codiag of the Population ScEodulea, arragge the Confldential Roports on Wege or Salary Incoea (Yorm P-16) in sbect and line numbor order, and tansfer the inforation to col. 32 ("Amount of manor wages or salery recolvede) and col. 33 (nDid this peraon reoelve lacome of $\$ 50$ or more from saries other than goney wegen or salarfin). These reports will be in the portfolio.
 sohodule. If the exswer to question 33 la "Tca," or an anount equal to or greater than $\$ 50$,
 emount less than $\$ 50$, enter - 0 ": 15 question 33 is usanswered, leave ool. 33 blank.

## Yant Residence

14. Col. 6, Does this household live on a rara? mbare the enurerator has antared "Yese in ool. 6 for the bead, to indicato that the bousehold lives on a ram, anter "l" in inda colum for all other members of tho hourchold, since fara residence must be punched on the carda for ail rambars of the housohold (not merely on the card for the head). Do not change a
 enumarator's entry for the head ia "No," as blanks in tals column will be puncted as "No."
15. In the oase of a eity dintrlet where the emanorator has made a ataterant on the aghedule that there are no farms in the district, be ahould bere ande no entries in col. 6. if there are nose, do go ooding in col. 6 ; but if the enumerator has made the generel statement that thore are no raras and hat thon ontered "Yos" in col. 6 for ore or nore housobolds, diarogard the general etaterent and code the oolunas directed in fir. it.
16. If the enumorator hes mado no ontries whatover in col. 6 for a housobold nor indioatod thero are no far=s in his.distriot, wite "1" in col. 6 for oach nomber of the bouse-
 if for any nember of the housenold. Othernisa leare ool. 6 blank.
17. If the enuarator has entered olther "Yoan or "No" in col. 6 for the bead of a bousonold, fou are got to otange hatentry, rogardiaas of what eay be entored in col. 36.
18. You muat be particularly careful whon you are cealing ool. 6 for persona onuaerated on sbeota nusbered 61. 62, eto. (Trose were ujod by tae onumarator ror tousehoida and porgona enuzaratcd out of order.l If ool. 6 hat beea lert blank for a porzon enturated out of orser, fou guat rofor (by eeana of the mousebold vialtation number ahmm ia ool. 3) to the entry in col. 6 for tie head of the houedtold of theh the peraon in a zeaber to deter=ine whether you atould write al" ia col. 6. But if the onumerator tao onterod elithur "Yos" or "No" opposite the aame of a pereon enumerated out of order, jou noed not rofer to the entry for the head of the bousohold. Mon whole housebold ls egumereted out of order, ool. 6 ehould, or course, be coded as if the housebold had been enumerated in regular order.

## Relationstip

19. Col. 8. Relation of this porson to the head of the houschold. There should be at entry in thas coluan for every person, dealenatiag lis relationship to the tead of the housem hold. If the entry has been omitted, determize the probable relatioaship on che danle of the
 22. Witer is col. A the code sybol for. the rolationarip as followa:
Relationship
Code for col. 1
Eead, elther male or fomie, ezeapt head of botel; lnstitution, etc.................... 0
W18. (of bead)................................................................................................................. 1

Parant (lneluding father-in-iaw, nother-in-iaw, stopiathar, and stepzother)............ )

Other relative of bead (inciuding son-in-law, brother-in-iaw, gophew,

Lodgir, roon=r, toarder, or parizer, (wife, son, or daughier of a lodger, brarder, eto.l.......................................................................................................

Servantin wlfe, son, daugher; hired band's wif, son, daugher; ey other employed's wfa, son, or dauzhter; or any other person not corered by. other codes.8

Hirod hand or other employee who is not domestic serrant.
I
Resldent in a hotel, institution, prison, school, housohold with 11 or zore lodgers, etc. (except an exployec and the meabers of his family who oceupy a detached bouse or structure and are returaed as a separate houschold in accordance with par. 427. Instructions to Enumeratora):
Hoad fthat $1 s$, masager, offlcer, superintendent, or wardeal of botel. institution, eto.--usually the first person Ilsted 7
Any other person in e hotel, inatitution, sto ..... 9
20. You will encoumer casoa where the relationship eatry in col. 8 bes beon edited in a previour operation. If an entry of head" mas been cancoled, code tap pergon and all following porsons in the household as morbers of the preoeding bousohold, deteralalng their rolationsinf to the boad of the prooeding housobold an bost you can on the basis of the entries in cols. 7. 9. 10, 11. and 22. If the entry in col. 8 bas bean cancolod and aheada hav been ontered in eltaer red or groen penoll, code "on in ool. A on tho line on whioh the
 orestod by she editor's eatry of "Hoad") on the basis of the entriea in oola. 7, 9, 10, 11, aze

 is arfooted by the editor'a change, bofore you procood with the oodizg of other columa.
21. Whonever it ie nocespary for you to detormine tho rolationahlp oode for col. A on tye baels of entrien other than those in col. B, do not cancel or correot the entry in eol. B. gliphy eater ste proper acte in ool. $A_{0}$
22. If the person enumoratod as the hoad of hougobola is a feanle whogo husband is onumerated an a nezber of the same housobold, again do not chango the enuzorator's entrios, but code the huaband as the head (code 0), and his wife (whoz the onuzerator has enterod as nhead") as wife (oode li. Hote that this procodure 1 a not to be followed in hoteln ade fustitutiona (see par. 23 below).
23. Tor persoas in inatitutions and hotele for when the enurerator has gade entrios in col. An eocordance with the instructions in pari. 449 and 450 of the Inatruatioas to Enizerators, the code "T" is to be antored in col. A for the porzon who is most probabiy the head of the hounehold (axagor, supariateadent, prinelpal, ete.) and the oode mgi is to be ontered for all other peraona, whether they be lametes, eplofees, or giesta, of the latitution or kotel.
24. Nso mener the code "F" in col. A for the bad of any housohold in whioh there are il or mare lodgers. hasizn the code "g" to all other ambers of suoh a bousohold whether ther are related to the head or not.
25. Enmeratora ware ingtruated to return as a aparate housotold an officer or emplojeo
 ture, odntalalag no i=atea) on the grounds of an lastitution. (Seo par. 427 in Ingtructiona to Rnu-orators.) The aembers of housoholds so returred should be coded in the same canger as the mebers of housoholda aot lifing on lastitu:ion groinda. If all of the resident ejployees of an institution lire in apparate quartora and are roturaed as aparato boustholds, you zust
 to all of the ottar lisatos, the code "9." Likowis, if a housshold comtains 11 or =ore lodjors asd all gezbors of the housohold are lodgory, code the first lodgor opm agd all of the otzer lodgors "g."
26. Note that the code n7" (aerfant) is to ba used for eaplojess who perfory persocal aertices for the household or some of its Eebors, and the code "C" (hirod hard, etc.) is to bo usod for ofplojees whoso labors costribute in sc=e zenner to the fa=ily ince=0. Ftis, a child's nurae stould be ooded "7" alnee ber dueles are nos parforaed in concection with the operation of the family business or agricultural enterpisea; a fara band la hired band, or fara holper) should bo codod "r" slooe hata dutios are perforead in oonesction with the operation of the family farm.
27. Porsons who hare the ontry or "sorfant," "housokoepor," or othor domestio sorvant in 001. © of the Population Schedule should bave en entry of "Yes" in col. 21 or 24. If a person with euch a relationstip has tee entry of "No, No, No, No, H" in cols. 21 to 25, code "l" in col. E. If thore are no eatries in cols. 28 and 29 , enter the occupation "sarvant," "Eousekeoper," etc., as the cane may be, in col. 28 , and "private ramily" in col. 29.
28. Note also that porsons returnod as relativa (wifo, son, daughtor, ote.) of servanty, of hired hands, or of other employoes of the head ara to be coded ngn in col. 1 , although the domestic sorvante the colves are to be ooded "7" and the hired hands aro to be ooced "x."
29. Whenever you oode "6" or "9" in 001. $A$ sor e lodger, you zust doternine the total number of lodgerg in tio hounohold. If there aro $s$ or =oro lodgera:
A. Inspeot ool. 33 and 15 thero la no entey of "Yos" in tela ooluan for sole ro-
lated =ezber or the bousobold, cancol the ontry in col. 33 and ontor "Yos" ror the hoad
of the housohole.
b. Inspect cols. 28 and 29 and if no rolated acrbor of tte houootold is roporiod as - Lotifichouse proprietor or housokeoper:
(1) Enter "l" 1ncol. E, and "Lodelnghouse keeper" and "Lodelnatouse" in cols. 28 and 29, reapecifely, for that ono related Eeaber, 15 asy, for whor ano" appeara. 1n cols. 21 to 24 and mun has boen antored in col. 25.
(2) If there are two or more related persons for whos thore is mom in cola. 21 to 24 and " $H^{\prime \prime}$ has bean writton in col. 25. enter "I" in col. I, "Lodgingtouge keeper" 1n ool. 28, and "Lodginghouse" in col. 29. for the related porson who, it appeara, has the major bousckeeplug reapoasibility in the lodglaghouse.
(3) If there is no related mesber of the housebold for whom "Non has been
 2n cols. 2,28 , not 29.

## Porsoral Descripeton

30. Col. 2. Sex. In col. 9 there must be an entry of men for every male person edumere ated, and an eatry of per for every female porson emeorated. If col. 9 has been loft bleak for any person, an entry must be supplied. Deternine the sex of the person from the gane in 002. 7 ard the relatioaship in col. 8, and eake the proper entry. Hetch for possible lacoagiat-
 wife, Kary, the second entry is obriously wrong and should be corrected.
31. Col. 10, Color or race. Thure must be an entry 1n col. 20 for orery person enumer. eted. If no entry has been zade for a porson, deteralne the rece frem the entrien made for other persons in the eane household. If col. 10 is blatic for a whole bousebold, enter for every person the color abbreviation of the head of tho precedize moustiold.
32. Ho codicg of tho entry in ool. 10 will be required when $1 t$ is "T" or "Neg." Any other antrian in col. 10 are to be kanceled asd a code entared an fallows:

| Entry 1n Cot. 10 | Code |
| :---: | :---: |
| Mex | - 2 (white) |
| Col or C. | - 2 (Negro) |
| In | - 3 |
| CH1 | - 4 |
| Jp of Jap | - 5 |
| 111 | -6 |
| H20 | - 7 |
| Kor ............. | -8. |
| day other entry ... | ction Chiel |

33. Col. 11, des. There should be an entry of a whole number or araction in col. 12 for
 try of णa, " you must immediately make the required eatries oi form P-306 (Persons of Unknown Agol. This fora mat be securely fastaned in the upper right-hand correr on rbe outside of the portfollo, when you retura it to the control desk. lio codise in aecesary, in this operation, for persong who are 100 yeara old or orer.
34. Pay partioular attention to the enumerator's entries in col. 11 for children under one year of age. these entries are fractiong (twelfins of year; seo footaoto on sehedulel and must be written withln the space between the llaes. There atould be no possibility that the juncter will sea only the amerator or dencelnator of the fraction and, for example, punch wil" ingtead of " $11 / 12 .{ }^{*}$ (Should this happen, the infant who wes actueliy only 11 monthe old would be oounted at an li-year-old person.l If you find any fraction that if not within the space botween the lines, cancel the fraotion, and code as follows:

## rwors

| Praetion | Code |
| :---: | :---: |
| 0/12 | 80 |
| 1/12 | 71 |
| 2/12 | $\nabla 2$ |
| -te., |  |
| 9/12 | 79 |
| 10/12 | $\sqrt{1}$ |
| 11/12 | V7 |

Note that you are to code the agot of infants under one year of agoconly whan the fraction Coos not appoar mithin the space betweon the lines in col. 11.
35. Col. 12, Marital status. Theremust be an entry in col. 12 for overy person enumereted. If no entry bas been made, supply the abbrovintion for carital atatua faceording to the meadiag of col. 12 of the actedule), on the basis of the other iaforation on the achodule, eapecially col. B (Relationship) and ool. 11 ( $\lambda g$ ). If it is impossible to deteraine whet the marital code should bo, enter "S" for "Single."
36. Tor overy parson whose marizal statua is reportod an m" (for earried) but whose tuaband or wife was not eauarated as a aember of the housebold, cancol the min in ool. 12 and oode "7" to indicato married, buabard or wife not present."

## EAucation

37. Col. 13, detocdod achool. If "Yos" or "No" has beon eatered in col. 13 by the enu-
 firat inspoct col. 25. If "S" (Studant) in entered in col. 25, anter fean in col. 13. If thare is rot ar eatry of "S" in ool. 25, inspect the age given in col. 11 and enter "Yes" in col. 13 if the peraon is within the compisisory school ages of the Staie in question, and "llo" for perzons outsido the compulsory gchool ages. Tha compulsory school ages in the various Stater are abown at the ord of these ingtructione.
38. Col. 1h, Highest fredo of echool completed. The entry in col. 14 is to be coded 12 col. B as follows:
Entry incol. 14 Codo 12 col. B
0 or "Noze" ..... leavo blank
1 ..... 1
2 ..... 2
3 ..... 3
4 ..... 4
5 ..... 5
6 ..... 6
7 ..... 7
8 ..... 8
B-1 or 9 . ..... 9
H-2 or 10 ..... -・ー
E-3 or 11 ..... 20
日-4 or 12 ..... 30
C-1 or 13 ..... 40
C-2 or 14 ..... 50
c-3 or 25 ..... 60
c-4 or 16 ..... 70
C-s or over, or 27 or ovor ..... 80
Blank or Un:
For a paryon undor 6 years of ago ...... loavo. blank For a jorson 6 yea.s oll or orer............... 90

## Plooe of B1rth and Clitizenshlp

39. Col. 15, Placo of blrth. The place of bleth enterod la ool. 15 is to be coded in col. C, aocordiag to the oode acbemes for States and countrios glven on the attactiod pages. men
 "ron (Amorican oftizan born abrodel in col. C, rather than the eode for the roralgo oountry.
40. There muat be code oybol ontored in col. C for every porson. If the plaoe of birth
 nambera of the same bousehold. (Do not write the name of the place of birth in col. is in auch oasea; aimply onter the code in col. C.l. If the onumerator could not find out with oertality
 the name of the propince, state, or city in mion tbe person ma born. In cases, therefore, where such place names are eaterad in the "Country of blrin" coluan, rofor to pages lesf on whoh are listod forelge provinces, cleles, and ataten with the correct code. If ool. 15 is blank. and the code can not be datermined from eatrles for other meabers of the household, proceed as sollowe:
a. If the entry in col. 16 (Citizonshlph ia "An Cit" or is blank, code "99" (for

Oalted States, State, Territory, or poseseaion unkomi):

farelge born; country of birth .unknown).
h. If the entry "Indian Ferritors" appears on sehodules for Oklahomand adjacent States codelit with the afmbol for oxlahean (86).
42. For a person born at aen ("lt gea"entared in col. 15), it the entry in col. 16 (citizenship) is "ha cit," or if this colum is blank, code 19 ia col. $C_{i}$ if the entry in col. 16 is "Ma," or "人1." code V9 in col. C.
43. The codes for persons of unknown or undetarinable blrtaplace and for persons born at ase can be aumarizod as followa:

| C01. 15 | Col. 16 | Code for col. C | Keaning or codo |
| :---: | :---: | :---: | :---: |
| Blank | Blayk | 99 | (United States, State unkaoma) |
| Blank | Am C1t | 99 | (Vaited States, State unkoma) |
| Blank | Na | 78 | (Yoraige born, country unknown) |
| Blank | Pa | 78 | (Torelen born, country unknown) |
| Blank | 4 | 78 | (Yoreign born, country unkzown) |
| lt sem | Heank | 59 | (Born at sea, f=erican ci:1zae) |
| Lt sea | Aliclt | 59 | (Bora at soa, deerican citizan) |
| 16 mes | Ma | 79 | (Born at sen, foralga) |
| lt lem | Pa | 79 | (Born at ana, foreigr) |
| Lt sea | 4 | 79 | (Born at ase, roreign) |

4. Col. 16, Cltizonship of tee foroign bora. Thare ahould be an entry of oNa," "Pa," "Al," or "an cit" in col. 16 for evory porion born in a roroiga country. 1 ill entries of "lm cit" are to be canoelod, but if "AN. Cit." appeara frequently for foroigr-bora porsons, refar the acbedule to jour Soction Chiof.
5. Czeok the oorrectaese of the catrien in ool. 16, and, if posaible, supply the alasing oatries. TEO two following rules will assist jou in both of these frocesses: a. Yor all forelga-born children under the age of 18 both of whose parents elther aro allen (Al) or hare cheir flrat papera (Pa), the entry ahould be "Al" (for Alien). b. Tor all forelgn-born chlldron undor the $\mathrm{g}_{\mathrm{o}}$ of 21 , one of whose parents has bean geturalized (Na), the entry mould be "Na" (for Naturalized).

If gou are unable to aupply a miaslag entry for a foro!gn-bora porson, enter ma" (for unknown) in col. 16. (The cod me should aevor be entered in ool. 16 ror a porson roportod in col. 15 as born "at sea." see par. 43 abovo.)
46. If an eatry has bean made in col. 16 for a person bora in the Ualted States or one of


Coln. 17-20, Rogidonce April 1,1935

47. Genoral. Erory combiagtion of ontries in ools. 17-20 zust be given a four-digit oode in col. D exeopt the sollewins:
a. An eatry of "Same house," whioh la not to be coded.
b. A cash in ood. 17 for a chlld under 5 gears old for which a dain (-) la to be enterod in col. D.
Each of the four-digit codes representa a apooifleally named plece of residenoe in 1935 exeopt for the genoral coden that are asigaed the following clasees of persona:
a. Thoso having an acceptable elitry of "Sace placo," which is coded XOXO.
D. Those who lired in the abme county in 1935 as in 2940 but not in the same house or the sare place. Entries for such persoas, undoss they lavolve a city of 100,000 or aore, art coded XOV for the first 3 diglia and given a fourta digit lodicating the population group. such as "rural fara" or "eity of 10,000 to 25,000."
Persone with accoptablu ontriss of the categorios listed above are clasalfiad an normizragts. The conditiona under which such ontriea are acooptod are givan in paragrapta 49 to 57. Codea for specificalif gamed places of residence in 1935 are given in code lista l-7. thoae codes have been constructed on the following general prineiples:
a. For cities of 100,000 or more thare is a aiple four-digit code, always begianing with 4, and endira with 7 as 4147 for Cizelanati.
b. In all other codes, the first 2 alaits represegt the state, the third digit the aubregion within the State, and tho fourth digit the populailon group within the subregion. Parsong far whaceoptable atries lrdicate a apocifically named place or residance in 1935 are called alprantst frat la, if cities of 100,000 or zore and Izdependent citien are considared as equivalent to counties, mgrants are all persocs who are now lifing in a differant "county" from that in whech they lived 121935.
48. In wat follows it is assured that entries are ande in the proper order on the schedule. Whare there are transpositicns (such as stato in col. 18 and county in col. 19), be goveraed by the nature of the eatry and not by the nubber of the schedule coluan. vhen the placa in col. 17 ls not locatod in the county in col. 18 or the counir in col. 18 is aot located in the state in col. 29, you are to call the case to the artention of your Section Chiof. Do not correct the eguerator's eatrios in cols. 17-20 unjess elrected to do so by your Section Chiof.
49. Samo houso. Leave col. D blank for all entries of "Sa=e bouso."
50. CElldren urder 5 years old. Por enlldren ueder 5 years old tharo should be a dash in col. 17 and cols. $18-20$ should be black. If thare are oair blacks or dashea la cols. 1720, check the age of the person as eatered la col. 11:
a. If the parson $1=$ raported as under 5 , eatar a dash ( - ) fin col. D.
b. If the porson 13 reported as 5 years old or orer, doteraline ingaccordanee with
the instructions in paragraph 70 whether he should be giren the same code as the head or should be coded $\mathrm{DXO9}$ for "unknown."
51. Entriea or "Saze placo" in col. 17. "Same place" is to be aceopted only for persons whose resldanco in 1940 was in an incorporated plaoe. No anumaration district conslats partiy of incorporated and partly of unincorporated targitory. Tou neod laspect the heading or oaly the .rirat sheet to see if the namo or an incorporated place has beva entored.
e. If it has, whto xoro for all antries of "Seme place."
bo If it has not, treat all antrios or "Samo'place" as if they ropresanted an "R" in col. 17 with an entry of tho semo county in col. 18 as in the hoading of the schodule. The prooedure for coding is givan bolow in paragraphs 55 to 57 . Do not aocept entrios of "Same place" when the camo of an unincorporated place la.ontered in tho heading of the sobodule.
52. A sow alnor offll dirlalonowore claselfied as urban in 1930 under a spocial rulo. Before you recolvo portiollos sran such aroas, they wll bo atamped murban--1930: Noto in
 bears thlo notation, dioregart the instrietions in paragrupt $5 l$ and todo ald antrios or "Eamo placo" xoxo.
53. Ahore tee oci=erasor should bave witten "Ease placo, ha =ay oeeasionally havo entores the an=e of tho city, tom, or vlllage. Thorofore you should keep la $=1 \mathrm{na}$ the rame of toe place in whioh the onumuration distrlet on which you are working le locatod and code yoto any cases whero stale lacorporated place la reporeod 1a col. 17.

## Resideace in Saze County in 1935 as in 1920

 100,000 or zore ere considered as distlact from countles. Therefore persons who now live in a elty of 100,000 or more must never be coded xov for "Same oounty." Likowlae, persona who ia 1935 lived in a ofty of 100,000 or more muat aerer be coded yov for "Same county." (If the persor lived in the metelty of 200,000 or more in 2940 an in 1935 , he would, of course, be given zite code roxo for "Same plece.") citien of 100,000 or nore are hown in Lat 4 .
55. Procodurs for codifg same county. Whan ool. 17 contalas an antry other than mane housew or other than an eccaptable entry of "Sane placen, compare the county and State reported in cols. 18 and 19 with the county and state atown in the headiag of the achedule, that is, the county in which the enumeration district on mhiob you are working la loceted. If the courty of
 of the code in col. D. Note that, as atated in paragiaph 5l, an eniry of "Saze placen fora peraon not now lifing in an incorporated place is to be treated as if there were an "R" in col. 17 and the sene county in col. 18.
26. Dotopian te fourin algit as follows: If a place teat (ajpeara in the Lat of Jrban places (Lfat 1 ), is entered in col. 17 diaregard the ontry in col. ap and eater an the fourth digit of the code, the fourth dight of the code for that place as given in this list. geace the oomplete code will be XOVL, XOV5, or XOT6. Por axample, 15 the place in col. 27 were frederick, Frederfek County, Karyland, it would ba sean from the Llst of Urben flaces that the uaval code woule be 7225. Therafore, if the enumeration district ca walch jou are woski=5 is an area
 o1ty 1n. 1935.
57. If the oniry in col. 17 is "R" or a place not in tea List of Orban Places ftbat is, a place that tad a population of lesa than 2.500 in 1930), the fourth digit of the oode should be detereized by the exty in col. 20 as folfows:

If ano" in col. 20, ciode 1 (rural nonfarm)
If "Yes" in col. 20, code 2 (rurad farm)
If col. 20 is blank:.
a. Codo "1" (rural noafera) if an incorporated place of lesa than 2,500 in 1930 is

of 1,000-2,500 inerbitants in 1930 are given in List 2, end those of less than 1,000 are
ciren in State table 5, of Population, Volu=0 I, 1930.
b. Code "3" (rural, serm residonee unknown) is the eatry in col. 27 is "R" or a
place not on any of the liste of incorporated places.
The copplete code will ther be XOF1, XOV2, or. XOV3.

## Procodure for Megrante

38. Gonorel procectura. -The above instructione corer entries representing noralgrants (lncluding persona who noved slaply from one location to anoizor witala the same county). The realaing ontrios in cols. 17-20 are to be given coden repriseating geographio locations as indleated below. The first two digits, whoh represent the state, are usually the sare as the codes for col. 25 (place of blrth). The telrd dielt represeata the subregion of the State. Theat subregions are composed of groups of counties woso populations had siallar charaotaristices in 1930. When chere are more than 9 aubreglons in a State, an additional State gode is used with the extra aubregioas. For exazple, the flrst two digita for a local1ty in Onolde County, Now York, outside Uelce elty (when wes e efty of 100,000 or more) are not 56 but 5 V . The proser state code le given fa congection with the aubregion occe for oad oounty in the Lest of Councles (Llst 3).

## -10.

59. If the alty or other place atown in 002. 17 anpeurs in tho liat or Urban Places (List l), disrogard the eatry in col. 20 and eater tho ccce jiven in tho list oxeopt that if the elty reportod in col. 17 bappens to be tho elty in whica sie person now livis, as shown in the headigg of the achedule, the code ghould be xOXO for "Eaze plact." (Soo paragraph 5) above.) Thus, a ratura of 2935 residence ab Frederick, Yrederlek County, laryland, found in any enumeration distriet outside Frederick County, would recelre teo ecto shown for Yroderick in Latat. (See paragraph 56 above for the exceptional proceduro of uslag oaly the last figure of the city's code in coding novaa from a city to other perts of tho coungy in which the city la located.)
60. If the entry in col. 17 is $\mathrm{m}_{\mathrm{n}}$ or a place not in the List of Urban Places, get the tirst three diglte of the oode srom the County Llat and aupply the fourth digit on the basis of the entries in col. 20 as follows:

If "No" in col. 20, code 1 (rural nonfarm)
If "Yea" in col. 20, code 2 (rural farm)
If col. 20 is blank:
a. Code in (fural nompara) if an incorporated place of less than 2,500 in 1930 is
entered in col. 17, juat as 15 "Mo" were ontered in col. 20. phral incorporated places of 2,000-2,500 inhabirante in 1930 are given in List 2 , ard tasese of leas than 1,000 are given in State table 5, of Population, Volvan I, 1930.
b. Code "3" (rural, faiz residence uncema) if the eatry in col. 17 is "R" or a
place not on any of the lists of incorporated places.
61. Clties or 100,000 or =0re. Clties of 100,000 or more $1 a^{\circ} 1930$ have codes walch alwaje begin with 4 and end with 7 and hecee are in a differor: serion froc those for other places in the same Stare. Such cities are given alphoberically in a apecial list illat 4) as wall as in the complete list of urban places. Yor a peraon liviag la one of these cities in 1935, siaply write the code for the eity. Disregard the entry in col. 20.
62. The iadependene olties in Firginia, given both in tho County List and in the List of Orban places, aro not a part of any councy. The enveratar, Eowerer, oceasionelly aay bere onterod in col. 18 the rame of tie county that sumpoundec tho ifueperdeat city. Regard a mora between an lndeperdent eity acd a ccunty that sursourds it as a ctane of rosideace from one councy to another. Hence, follow the procodicre in paragiapta 58 to 60 abovo and not the procedure in paragraphs 55 to 57.
63. Places in ta States or in two or $=0$ eo counties. Soco places ara located partiy in one State or county and partiy la anotzer. The codo lists ahow a separate code for each part of such places. The codo to be aupplied wlll tharofore be based on the earyy for the State or county as well as the zane of the place. Tha parta of places locstet iz two or aore areas will be followod by a single naterisk (F) or a double asterigk ("e). If ito ldectirying information on State or county is glasigs, write the ocde for tho gar: -aziked with a doublo asierlgk (*e). This part lacluded a plurallty of tae population of the flaco in i930: The procedure just deacribad affocts not only the detaraieation of State or subregion but also the dateraicailor of whether or not the person lived in the sare ocunty in 1935 is in 19LO. If the place entered in col. 17 is located boin in the coanty of 1920 resideaco ard in an adjacent county and if col. 18 la blank, you must make use of the dojble asterisk ("e) designation to determine the oounty of residence in 1935. If the double asterisk (ee) fadicatea that a plurelity of the population of the place in col. 17 lived in tes county of the person'a 1960 rasidence, you muat adopt the procedura or paragrapha 55 to 57. If, however, the double antoriak (**) indicates that a plurallty of tee population of this place lived in the adgacent county, you must adopt the procedure of farantapks 98 to 60.
64. 1935 resicence in forelen countries or outlyiez possosalons. If the person lived In 1935 in a forelgn country or an outlying posession of the Unlted statea, ithere should be an entry of the name or the country or possoasion in col. 29. Dlaregard ontriea 2 a other. colungs, rofer to the Code Llat for Forelga Countries and Outlying Posassalons (Lhat 5), and enter the code given there for the country or posseadon reported.

## -21-

## Inoceplote Emerios

65. Is a place of less than 2,500 in 1930 (and teace one not in the List of Urban Places) Ls enterod la col. 17 end there is no county given in col. 18 , you maj tiad the county with the flret throe digits of the oode by foferriag to tto Liat of Incorporated plades of 1,000 to 2,500 (Llat 2). If the place is not la this list, refer the oase to jour Soction chiof. Yor a 1935 residence in a Now England State, the name of a tom (not an incorporated place but a minor civil dirlaion) may be entered id 001. 27. If the county. is not entared in col. 18, determine the flrat three diglte of the code from the Lat of Now Englard Town got Clasililed es Urban (List 7). With ouch a minor oivil division eatered in ool. 17. the fourth digit of the oode must almeys be one ror a rural population group, never 4,5, or 6.
66. If the oounty but not the Siate is given, assuat that the State is tae one in the headlag of the echodule if there la a county of this game in the State. (Seo County list.) if there la not auch a county in the gtate, refer the case to jour Soction Chlef.
67. If oaly the county and state are given with no entry in col. 17 or 20, deteralae the flrst three diglts by reforeve to the County Code List. To deterzine the fourth digit, get if the county is marked with an asterisk in the County Code List. Counties so anyked contaiaed go urban places in 1930. If the courty contaiaed no urban places (1. e., wae puroly rural), jou will know thet the entry 1n ool. 17 should bave been "R". In such e case, write "3" for the fourth afsit to indieste rursi, faril residenee unicnown. If the county was not purely rural,
 the achedule and the county was puroly rural, code yoys. If the county was not purily rafal, code IOVE.
68. Where col. 17 is blank, with county and State, State aloge, or county alone given, and there is an entry of "Tes" in col. 20 write " $2^{\prime \prime}$ for the fourth digit (regardiess of whethar the county is pursiy raral or not). For a "No" in col. 20 with the courty giren in col. 28, write
 67.) Othorwise, Write "B" for the fourth digit, just as if col. 20 wero blabk.
69. If there is no county in col. 18, an "R" in col. 17, and a State in col. 19, deteralie the flrat two diglts of the code from the State oodes given for col. 15 (Place of blrth) and writa 0 " for the thira diglt. (dn eatry of "On for the iniri digit ladicates that the aubregion ia unknomal Write 1,2 , or 3 for the fourth diglt according to the eatry in col. 20. If 001. 17 is blank and there is an entry in col. 20, deteralae the fourth digit accogiteg to the procodure in paragraph 68. If col. 17 and col. 20 are both blank, wite "B" for the fourth digit-
70. Scae emumaratore ajstematically left blanke or entered dastes in cols. 17-20 for nembars of the tousethold other than the head if thelf 1935 realdence wes the agee es that of the head. Give these persons the sare code as the head. fhes these columa art only oceasionally loft blank, give onfy related persons the ane code as the head, and for unralated persons write Ireq for moicnown." If the entries for a releted person are only parially complete and those for the bead are nore conplete and 15 all the entries made by the enuzarator for tee related person egree with those for the head, glve the saed code to the entries for the other namber of the samily as was given to the hoad.
 gid or ovar and the code cannot be dotermined on the basis of the ontries ande for the toad of
 ontries the state in which the porson was living.
71. Illustrativo ooding or lnosmplote entrien.

| Col. 17 | Col. 18 | Col. 12 | Col. 20 | Codo | Paragraph |
| :---: | :---: | :---: | :---: | :---: | :---: |
| R | Sarbour | Alaba=a | --- | 8273 | 60 |
| Clayton | Barbour | Alabaa | --- | 8271 | 60 |
| Blue Springa | Barbour | Alaboas | --- | 8271 | 60 |
| --- | Autauga | Mabasa | --- | 8233 | 67 |
| --- | Barbour | Alabaea | -- | 8278 | 67 |
| -- | Barbour | Alabaman | Yes | 8272 | 68 |
| --- | --s | Alabama | Yos | 8202 | 68 |
| --* | Autauga | Alabama | No | 8231 | 68 |
| --- | Bartour | Alabama | No | 8278 | 68 |
| --- | -- | Alabasa | No | 8208 | 68 |
| --- | - | Mabama | --* | 8208 | 69 |
| a | --- | Alabasa | No | 8201 | 69 |
| 8 | $\cdots$ | Alabasa | Yes | 8202 | 69 |
| E | -- | Alabara | -- | 8203 | 69 |
| R | - | -- | Tes | 209 | 71 |

73. Sunary or Mleration Codo. Some of the more importazt garts of tho Migration Code schome may be sumearized as follows:

Blank Saẹ house
-- Caildren under 5
y0XO Same place
XOV First threc digita of the oode for "Saze county."
DXO9 No entry
Fourth digit indicates population group, thus:
Rural nomfara
Rural farm
Rural, farm residence unknown
Urban piace or 2,500 to 10,000
Urban place of 10,000 to 25,000
Urban place of 25,000 to 200,000
City of 100,000 or zore
Inco=plote entriea: soreign country or outlying possassion
No ostry
MIGRATICN CCDE IISTS
List 1. Urbea places in 1930.
Lat 2. Izcorporated places of 1,000-2,500 in 1930.
Lut 3. Countlos.
Llst 4. Cizies or 100,000 or more in 1930.
Lest 5. Yorelgi oountries and outlyizg possesaloms.
List 6. States. (Cities of 200,000 or Eore bave soparato oodes. See Liat 4.)
List 7. Now England towns not classifiod as urban in 1930.

## Enplormen: S:a:us

74. Cola. 21 to 25, Fiork Status, woek Minceh 2L-30. The antrios in cola. 21-25 are to be
 of the nüber of the coluan la which the flrst "Yas" appaara (that la, "1" for col. 2h, "2" ror 001. 22, ©te.) whte the rollowlaz oxeption: when chare is a "fes" la both cols. 21 azd 22, disregard the "Yos" in ool. 21, and code "2" in col. E for the "Yog" in col. 22 . If the ontry "Inst." appoara la col. 2l, disrbgard all othor antries in ools. 2i-25, and code the onery agn 1n col. 2 . If "Yos" does not appear in cols. 2l-2h, the code for ool. E it to be based on the entry in col. 25 in accordance with the code scboce below. If ayos" fas not bean eatered in cols. 21-25, and 001. 25 la blank, code as followa:
75. If there la a aumer in col. 26, and no entry of 1 or more in col. 27, code
"1" In 001. $E$.
b. If there is an entry of 1 or more in col. 27. and no entry of 1 or more in
col. 26, code "3" 1a col. E.
c. If thers is ac ontey in elther col. 26 or col. 27 , or if there is an entry
of 1 or more in both colunns, leave code col. 2 blank.
If a coda hes been entered in eol. E for a person enumerated on a line marked muppl. Quest.". aocept the entry as correct.
76. The code acheze for col. I can be aumarized as follows:

Schedule Entries Code for Col. E
: If there is ang nYes" ia cols. 21-24:
If the "Yeani is in col. 22 ....................................................... 2
If "Yes" occurs in col. 21 and col. 22 born...................... 2
If the first "yes" is in col. 23 ..................................... 3
If the first "Yes" is in col. 26 ..................................... 4

If there is ao "Yes" in cols. 21-2h and no "Inst." in col. 21, and:
If "H" oceurs in col. 25 .................................................. $s$
If "S" oceurs in col. 25 ................................................ 8
If "y" occurs in col. 25 .................................................... 7
If not" occurs in col. 25 ............................................... 8
If no "H," "S," nU," or "Ot" oceurs in col. 25, add:
If "1" or nore in col. 26 ...................................... 1
If "1" or more in col. 27. ........................................ 3
If "1" or nore in bork cols. 26 and 27 .................... blank
If blank in both cols. 26 and 27 ........................... blank
76. All aen reported as reslding in CCC Campa stould be raturned as ongaged in Publle
 or a "Yes" has bean entered in a colum other than 22. If an E.D. for a CCC Camp contains the names of any woara, refer the portfollo to your Section chler.
77. Bofore you enter the code "g" in col. E Pthet is, wen anst." is ontarod in col. 2l), eee whather you hare coded the head of the household "V" in col. $A$; 15 not, fefer the housohold to your Section Cbier. If you eater the code "g" in col. E, you aust eancol any eatries that appear in cols. 26 and 27 and earer a code in col. 26 to identify the rype of inatitution, as söllows:

Typa of Institution Code 1a Col. 26
State prlaon, penitentiary, prison farm
$\qquad$
Local jall, workhouse. house of correction, county ponal fara or ca:ap02

Lental fastitucion (1aseltution, homa or colony for mentally digeasod or dofective or epllepelc) ............. 03
Home for tho actd, infly, or noddy (inciuding orphangea) .. Of
Oihor and unknown (rufor to Soction chlef) ........................ os

Tho cauzerntors wire listruritu to lde..itify the type of inatifucion in tho teidine of the actipcuia, and in the case of an inmato of a penal lastitution to enter elther his prison numbcr. ur oprile oner," 1n col. B. (Sce purj. LlU and LL9, lnこtructions to Ensmerators.) Refer to your Suction chiof cagos whero the type of lnstituilon ds indefinite or untnown.
78. Col. 25, Houra reried. If thu code in col. E 13 not 1,0 enneal any entry 1.n ool. 25 orber than tho entry you izade in occordance with par. 77. If col. 26 1s blank, leare dt blunk.
 and write "99."
79. Col. 27, Duration of unczployment. If the code in col. 2 is geither min nor min and there is an entry ia col. 27. cancel tacentry in col. 27. If ool. 27 is blank, leave it blank.
 and code accordizs to the followine scheme:

| Entry 13 col. 27 | Code |
| :---: | :---: |
| 100-124 weers | 80 |
| 125-149 weeks. | V1 |
| 250-199 wecks | V2 |
| 200-249 weaks.. | V3 |
| 250 weeks 05 m | 74 |

80. Cols. 29, 29, 30, and col. F. Cols. 28, 29, 30, and col. F are not to be coded at th1s t1天e.
81. Col. 32, Vieeiss worked. If theri is an entry ia this colum of more than 52 weeks, cancel and mizoms2."
82. Col. 32, !ronev rrsees or salary. If col. 32 is blank. leare it blazk, unless the eatry
 been entered in col. 32, cancel the rracilon. If the entry in col. 32 is 6000 or orer, canael the entry and rritie $\quad$ 5000t."
83. Col. 33, otre: tincere. If an amount bas been entered in col. 33, cancal tho amount and eater "I" (Sor "Yes") if ihs anount is fiso or eare, or eater no" (for nito") if the eaurt

 on an lixd resident projeet, you should cross out the reply of "ion and enter "l" (for "Yes") for all perzons report!iE zeven or core weeks of employment in 1939.
84. Col. 34, finter of Eare Schedule. No codiag is to be doae in col. 34.

## Supolamentary Guestions

85. Uncanceled supplemeniary lines are to bo coded in accordance with the instructiona dn pars. Bó to 111, evea when cols. 35 to 50 are cocplerely blaik. Enter the code symol "g" in col. I 1f cols. 36-50 for tale person are coapletely blank, or bave bean completody cameded.
86. Col. 35, Nune. l:o coding is to be done in this caluman.
87. Cols. 3i and 37, Plice of birth or fnther ard rother. The place of birth of father and mother are to be coder in col. C. : Mon cols. 36 and 37 are blank, it eay be trat either or both of tho parenti or the suriltuentary person were enumerated on the main schedulo, in which case the code for col. G rij vo cotcralned froa col. 15. It is noz aocessary to ilil in the entries for coly. 36 and 37. Selcet the counley of birth to be coded, as shown bolow, and supply the symol from the list of countries on the atractied pages.
a. Leave col. $C$ blenk 15 thu cntrics la cols. 36 and 37 indicate that both parents
of tho person ware horn in chu United itates, lis terifiories, posseasions, at sea, or
in a place lhat cunnot be dutcralned.
b. If tho entry in col. 3G Indlcuteg that staperson's tachor was bora in a forelga country, onicr in col. C the codo for tho councry upceified in col. 36, and diarceard the entry for eho rathor.

- If the entries in oola. 36 and 37 indicate that ite person's rather was born in the Uaited States, 1 te tersitorles, possessions, at gea, or in a place that cannot be doteralaod, and that bla =other was born in a foroign cougryy, entar in col. C the code for the country of biftt of the gother.

88. Col. 38, yother renguo (or mative larguagel. Code the extrlea in col. 38 in code col. K in accordance with the symbole for mothar tangue on the coding sckeme artached. If the entry in col. 38 is Eagilsh, leave code ool. H blank. If col. 38 is blafk code 49 in 001 . H.
89. Cols. 29, LO, ard h1, Veterang. Cols. 39 to 41 are to be coded in col. I eceording to the code schere atown below. It will be noticod thet when "S." "R, or oot" is entered in col. 4, it la not necessary ro inspect cols. 39 and 40.

b. If the entry in col. Li is "R" code $\mathrm{m}^{\mathrm{b}} \mathrm{m}$ in col. I.

90. If the entry in ool. W is m" inspect col. 40:
(1) If the entry in col. 40 is "No" or if this colum ia blank, code win 1n col. I.
(2) If the entry in col. LO ia "Yes" code nen in col. I.
-. Is the entry 1a 002. 42 1: "Sn" inapect col. 40:
(1) If the entry in col. 40 1: "No" or 15 this coluzin is blank, code "L" in 001. I.

f. If col. 41 Is blank laspect col. 39:
(1) If the entry in col. 39 is "Yes," code "7" in col. I.
(2). If tie entry in col. 39 is "No" of if this colizen is blank, leave col. I blank.
91. The code for col. I can be sumarized as follows:

| col. 39 | Col. 20 | Col. 21 | Code ror Col. I | Meagize of Coto |
| :---: | :---: | :---: | :---: | :---: |
| Disregara | Distegard | 3 | 3 | Sparish faerican |
| Dlaregard | Disregard | 8 | 5 | Regular Establistment |
| Disregard | D1sregard | Ot | 6 | Other Vateran |
| Diaregara | No or blank | T | 1 | Torld Xar |
| Disregard | Tea | $W$ or ST | 2 | Cbild-Horld-Father dead |
| Disregard | No or blank | 57 | 4 | Spanish and World |
| Yes | Disregard | 3lagk | 7 | Voteram-5ervice Ujicnowa |
| No or blank | D1350gard | Blank | Leare glank | Not reteran |

91. Cols. L2, 63, and 4 L, Social Security. If. Mesn is entered in both cols. 42 and 43

 muat be canceled and the comblation coded in accordance with the following scheme:

## Col. 42 Col. 43 Col. L4 Code for Col. LL Meanigg of Code

| 80 | No or'blank | None or blank | 0 | Does not have S.S.No. |
| :---: | :---: | :---: | :---: | :---: |
| Tos | No | glank | 4 | Hes S.S.No. No Coductions |
| Ten | Tos | Blank | 5 | Elas S.S.No., amount of deducticas unknown |
| Tes | Blank | Blank | 6 | Has S.S.NO., unknown whether doductions |
| Any | cer comblag | 8 | Loare blayk | Unknown S.S. atatus |

92. Cols. 45, L6, 47, and code col. J, Usual occupation, industry, and class of workor. cola. 45. 46, and 47. and codecol. J. are not to bo coded at infs tiae.
93. Cola. 48, 49 , and s0, Yor all women who aro or havo becn earriod. Cols. 43. 49, and 50 are not to be ooded at inde ilas.
94. Col. K. Ten. (L). Coce la ool. X for each person onizaratea on a supplezentary line 48 followa:
-. Code "O" for owned, if -0" appoars in col. L on the line for the head of the mouathole of which the person on the aupplementary liae la a related memer (eode 0,1 . 2 , 3. 4, or 5 in col. A).
b. Code "l" for roated, 15 " $R^{\prime \prime}$ appears in col. fon the line for tye head of the bougehold of whica the person on tre oupplementary line is a related aezber.
o. Code "2" if the person on the supplementary line is a lodger, sorvant, blred hand, ote., or la member of an lastitutional bousohold (codo 6, 7, 8, 9, Y, or $X$ la col. A).
95. Col. L, V-R (5). Tha value of an omed home (nO" in col. X) or the monthly reatal of a ronted hoee ("l" in col. K) aust be coded in col. L for each person enumerated on a supplementary line according to the followng sctene:

| Value | Rental | Code ror Col. I |
| :---: | :---: | :---: |
| Under $\$ 500$ | Undor \$5 | 0 |
| \$500 to \$999 | \$5 to \$9 | 1 |
| \$1,000 20 \$1.499 | \$10'20 \$ 26 | 2 |
| \$1,500 to \$1,999 | \$15 to \$19 | 3 |
| \$2,000 to \$2,999 | \$20 to \$29 | 4 |
| \$3,000 20 \$3,999 | \$30 20 \$39 | 5 |
| \$4,000 20 \$4,999 | \$40 $20 \$ 49$ | 6 |
| \$5,000 to \$7,499 | \$50 to \$74 | 1 |
| \$7,500 50 \$9.999 | \$75 to \$99 | 8 |
| \$10,000 or mors | \$100 or $\mathbf{E c r o}$ | 9 |
| linkeown | Unlenown | Leave blank |

96. The ralue or reatal of the hoce should appear in col. 5 on the line for the head of the househole of which the person is a aezber, but if it appears in col. 5 for soze felated =enber of the household ocher thar ihe head, it may atill bo used. If col. 5 is blanic or "Un" for all related meabori of the household including the head, leave col. I bleak, regardlosa of that may be ontored in col. 5 for anj unrelated mezber of the housohold. Leave col.
 Y , or $I$ in col. A$)$.
97. Col. 4!, Fa. res. agi Sex $(6$ and 9). The antry for col. 1 is to be supplied on tha basis of ecobination of the eniries in cols. 6 and 9 for this person. If there is a "ijon or ablank in col. 6 and the person ls reportad as male (m" in col. 9), anter "n" in col. K. If there is a "No" or blank in col. 6 and the person is reported as remale ("F" in fol. 9), code "2" in eol. K. If there 1s a "Yes" ora "1" in ool. 6 and an "L" in col. 9, code
 code " 4 " 1a col. M. Never laave ool. K blank.
98. The codes for col. I can be sumarized as followa:

| C02. 6 | Col. 9 | Code for Col. 4 | Meandag of Code |
| :---: | :---: | :---: | :---: |
| Ho or blank | $\underline{ }$ | 1 | Nodrame anle |
| Ho or blank | I | 2 | Nonfarm femalo |
| Yes or 1 | K | 3 | Fasm male |
| Yee or 1 | 7 | 4 | Para fomale |

99. Col. N, Color and Natipity. (10, C, 36, and 37). The oode for col. N is to be suppliod from a coblation of the entries for the porson in ools. 10, $C, 36$, and 37. Supply the code for col. $N$ in accortance with tho following soteme:

| C01. 10 | rifet algis of oode in Co1. C | Col. 36 | Col. 37 | Code for <br> Col. 5 | Moagirg or Code |
| :---: | :---: | :---: | :---: | :---: | :---: |
| \% 051 | x,5,6,7. | A siate, | A stare. | Leare | Nailve witio, boin parenta native |
|  | 8, or 9 | territory or | terrltory or | Dlank |  |
|  |  | Doscession | possosilon |  |  |
|  |  | of the $\mathrm{O} .3 . \mathrm{C}$ | of the 0.S.. |  |  |
|  |  | or blank | or blant |  |  |
| T08 1 | $\begin{aligned} & x, 5,6,7, \\ & 8, \quad 059 \end{aligned}$ | 1 forelgen oountry | A forelge oounery | 2 | Mative white, both peronte forelce born |
| - 021 | $\begin{aligned} & 1,5,6,7, \\ & 8, ~ o r ~ \end{aligned}$ | A forelgr country | A atate, territors or | 2 | Native white, father sorelgn born |
|  |  |  | Dosesealon |  |  |
|  |  |  | of the U.S., or blank |  |  |
| T05. 1 | $\begin{aligned} & x, 5,6,7 \\ & 8,059 \end{aligned}$ | A state, territory or posiseselon of the O.S.. or blant | 1 forelsn oountry | 3 | Native mite, mother forsign born |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
| Tor 1 | T, 0, 1,2, | Diaregard | Dlaregara | 4 | Yoralgr-born white |
|  | $\text { ar } 3$ |  |  |  |  |
| Heg | D1aregard | Disregard | Diaregara | 5 | Hegro |
| 3-9 | Dlarogara | Siaragard | Dlaragasa | 6 | Other race |
| 100. Col. 0 , Age (11). Tragacitibe the ago (or the code for age if age tas boen coded) for |  |  |  |  |  |
| person from col. 11 to col. O. If col. 1 l is blank or contaian an entry of oona leave col. ank; the fact that the ag e is unbown is elready recordod on the Porsons of Uaboown hge form. |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| par. 33 abore.) |  |  |  |  |  |
| 101. Col. P, Mar. at. (12). Erter a oode in col. P for the earital status of the person |  |  |  |  |  |
| rding to | ontry 10 | 12 as rollow |  |  |  |


102. Col. Q, Gr. ooz. (B). Transcribe the code welleh appeara in col. B for the peraon to col. Q. If col. i le blank, leave ool. Q blank.
103. Col. R, Cit. (16). Fater a oode in ool. R for the oifizenship atatue of a persoz ecoordige to the entry in col. 16 as follows:

Emery in Col. 16 Code in Col. R
If blank or aancoled.....Leave blank

```
Nn................. l
Pm.................. }
|s ................ 3
    & ................. &
```

 col. B. If ool. I ds blank, leare col. S blatk.
105. Col. T, Hes. MxA. or Dur. Ca. ( 26 or 27). As eatry is to bo eade in ool. T only when
 blankl leave ool. T blank. code the eatrien in cols. 26 and 27 in eccordance with the followifg sobemes. Note that where the orlgiral entry in cole. 26 or 27 was 200 or mora, the ontry bas bear ooded, ent the code for col. I la besed on ri.in oode and not the original entry.

| Entry 18 | 1n Col. 26 | Code for COL. I |
| :---: | :---: | :---: |
| 0 | 20 23. | 0 |
| 44 | to 29 | 2 |
| 30 | to 36 | ... 2 |
| 35 | to 39 | ...... 3 |
|  | 40. | ........ |
| 42 | to 4 | .. 5 |
| 45 | to 47 | ....... |
|  | 48. | ....... 7 |
| 49 | to 59 | ........ 8 |
| 60 | to 69 | .... 9 |
| 70 | to $99 \therefore$. | .... V |
| Blank | or canceled | .. Leare blank |

If 2 or 31 COL Col .
Entry in Col. 27 Code for Col. I Uader 3 ............. 0 3 to 6 ............... 1 7 to 10 ............. 2
is to 14 .............. 3 15 to 23 ............. 4
26 ro 35 .............. 5
36 to 49 ............. 6 50 to 99 ............. 7
下0, $\boldsymbol{n}$............... 8
V2, 73 ............... 9
74 ......................
Blank or canesiad ... Loare blank
106. Col. O, Occupation, Industry, and Class. of Morkgr (F). No entry in to be eade Ia col. U at this tiae.
207. Col. F, mas wixd. (32). 2nter a ode in col. Faccording to the eatry 1n col. 32 for the person an follow:

| $\frac{\text { Disy in col. } 31}{0 \ldots \ldots . .}$ | $\frac{\operatorname{Code} \text { in Col. }}{\ldots \ldots .0}$ |
| :---: | :---: |
| 1 to 6 ... | ..... 1 |
| 7 10 10 . | . . . . 2 |
| 115014. | .... 3 |
| 158023 | ..... 4 |
| 24.4031 | ..... 5 |
| 32 to 35 | ..... 6 |
| 368047 | ...... 7 |
| 48 to 49 | ...... 8 |
| 50 to 52 | ..... 9 |
| Blank ... | - Leare blank |

208. Col. Whapes (32). If cal. 32 is blank (or if the entry in col. 32 bas bean canoelodl rar the porsan, leave col. W blank. If there is en entry of 1000 or more in col. 32 for the person, trangoribe the first two digits of the entry to eol. W. If there is an entry of any nuber from 100 to 999 transoribe the first digit of the number and precede by an 0 in col. W. If any aumer from 1 to 99 is entered in col. 32 code $0 \gamma 1 \mathrm{incol}$. W. If the eatry in col. 32 is "on writo 000 in col. .
209. Col. $\pi_{1}$ Ot. ine. (331. Transeribe the entry for the person fram ool. 33 to col. I as followne

210. Col. Y. Franscribe the ode for the rolationship ontored in ool. A.
211. Whon you have completed the coding for all of the sohedules in that porifollo, make the rropor notation an line 6 "Cenoral coding" of the Portsolio Lomorundua to lndicato that


## GEOCRUYIICLL COEF I.ETT FCR STAJES

| Code | OOLO | cose |
| :---: | :---: | :---: |
| NEX ETOUND: | soutil AILENTIC: | nosirain (contea.) |
| Maino......................... so | Deluware..................... 71 | Liow Moxdco................... 92 |
| Now Hzapantre............... 51 | Haryland..................... 72 | Arix.cna...................... 93 |
| Vermont...................... S2 | District of Columbla....... 73 | Utan........................... 9\% |
| Massaohusetta............... 5) | T1r6tnie..................... 76 | Nevada....................... 98 |
| Rhode Laland................ S6 | Weat Vitrinic............... 75 |  |
| Conneotlout................. 35 | Horit Caralina............... 76 | Pactic: |
|  | South Carolira............... 77 | Washington................... 96 |
| MIDDEL ATHTTIE: | Ceorgla...................... 78 | Orecon........................ 97 |
| Hev York...................... 56 | Florlda..................... 79 | callfornla................... 98 |
| Mow Jorsey................... 57 |  |  |
| Pennaylvania................ ${ }^{\text {s }}$ | LEST SOUTH CEITRALS | Onited Stares, state not |
|  | Kentucxy.................... 80 | reported..................... 99 |
| ELST MORTH CEITRAL: | Tonnessec.................... 82 | Amarican citizen bom abroad |
| Ohlo.......................... 59 | Mabara...................... 82 | (da.cit. in eol. 26)........ 20 |
| Indianm..................... 60 | M1asissippl.................. ${ }^{\text {d }}$ | Outlying peasessions: |
| Inilno1s..................... 61 |  | دlask....................... |
| Michigan..................... 62 | HEST SOUTH CERTRAL: | Eawall....................... 72 |
| W1sconsin.................... 63 | Arkansas................. ... 86 | Puerto Rlco.................. |
|  |  | prilippla Islands.......... If |
| NEST NORTE CEITRAL: | Oxlabown...................... 86 | 71.8in Islandm.............. IS |
| Mınesote.................... 66 | Toxas......................... 87 | Preare Caral Lone........... 86 |
| Lown.......................... 6 6 |  |  |
| M1ssour1.................... 66 | nounters: | Sarou (hericar)............ |
| North Dakota................. 67 | Montana...................... 88 | At esa (blank or Am. alt. |
| South Lakota................ 68 | Itaro......................... 89 | in col. 161.................. 19 |
| Nobraske..................... 69 |  |  |
| Kansas....................... 70 | Colarado...................... 91 |  |
|  | ARTH3ETICAL CODE LIST YOQ 3T1.23 (Includes outlying possessiona) |  |
| Coso | Code | Code |
| M^Ватп....................... 82 | Maryland..................... 72 | Rhode Island.................. 56 |
| Maska........................ | Kassactusatta................. 53 | Bamoa (d=erican)............. IS |
| drizona........................ 93 | Michigan...................... 62 | Soutr Caroliza............... 77 |
| Arkansag...................... 86 | MUnnesota.................... 64 | South Dekota................. 68 |
| California.................... 98 | Mısissippi................... 83 | Тenresser..................... 81 |
| colorato...................... $\frac{1}{}$ | Missour1...................... 66 | Toras.......................... 87 |
| Connearicut................... 55 | Yontana....................... 88 | Utah........................... 96 |
| Delamere...................... 71 | Nebraska...................... 68 | Vermort....................... 52 |
| Dlatrlar or Colubia........ 73 | Siorada........................ 95 | V1rginia...................... 76 |
| Norlde....................... 79 | Now Hampshire................ 51 | Virgin Isiends................ ${ }^{\text {I }}$ |
| Georsta....................... 78 | Now Jersey.................... 57 | Washington.................... 96 |
| Cuem........................... 57 | New Yaxio0................... 92 | Hest Virginle................. 75 |
| Hawnil........................ 8 | Now York....................... 56 | W1s00nsin...................... 63 |
| Idaho.......................... 89 | North Caroliza................ 76 | Troming........................ 90 |
| rilinois...................... 61 | North Dakotn.................. 67 |  |
| Indians....................... 60 | 0nso........................... 59 | Ualted States, State not re- |
| Iown............................ 65 | Oxiaboma...................... 86 | portod....................... 99 |
| Kansas........................ 7 | Oregon........................ 97 | Arerioan alsizon born abroal |
| Kantuoxy...................... 80 | Panama Сanal zone............ | (An. alt. in ool. 16)....... |
| Loulaiana...................... 85 | Peanaylvanda.................. 58 | di sea (tayk or An. oit. |
| Matac......................... 50 | Phillppine Inlande........... If | is o01. 16).................. ${ }^{\text {r9 }}$ |
| 8181 | Phorto R100.................. ${ }^{\text {J }}$ |  |

## GEORRUPIL：COEF IIST FCA zCRICA COJITRIES： 1940

| Coun：5y | Country | Country |
| :---: | :---: | :---: |
| Codo | Coce | Coto |
| HORTHMESTISN 2UROER： | EMSTERI EתROPE： | 15Lh（Contadis |
| Ingianc．．．．．．．．．．．．．．．．．．．．．．． 00 | Russia（Sovier Republio－ | Jcyan．．．．．．．．．．．．．．．．．．．．．．．．．．． 33 |
| Scotland．．．．．．．．．．．．．．．．．．．．． 01 | 0．S．S．R．）．．．．．．．．．．．．．．．．．．． 18 | India．．．．．．．．．．．．．．．．．．．．．．．．．． 3 リ |
| Weles．．．．．．．．．．．．．．．．．．．．．．．．． 02 | Intruenla．．．．．．．．．．．．．．．．．．．． 19 | Other dsia．．．．．．．．．．．．．．．．．．．． 3 I |
| Borthorn $I_{\text {reiand．．．．．．．．．．．．} 03}$ | Latria．．．．．．．．．．．．．．．．．．．．．．．． 1 II |  |
| Irish Free state（zire）．．．．Of | Earonla．．．．．．．．．．．．．．．．．．．．．．． 20 | dumica： |
| Horwey．．．．．．．．．．．．．．．．．．．．．．．．．． 05 | Yinderd．．．．．．．．．．．．．．．．．．．．．．． 21 | Carada－Fronch．．．．．．．．．．．．．．． 36 |
| 8wreden．．．．．．．．．．．．．．．．．．．．．．．． 06 | Humanla．．．．．．．．．．．．．．．．．．．．．． 22 | Cazada－English．．．．．．．．．．．．．．． 35 |
| Donmark．．．．．．．．．．．．．．．．．．．．．．．．． 07 | Burgaria．．．．．．．．．．．．．．．．．．．．．．： 23 | Newtourdlend．．．．．．．．．．．．．．．．． 36 |
| Iceland．．．．．．．．．．．．．．．．．．．．．．． 07 | Turker in Europe．．．．．．．．．．．．． 27 | Kerico．．．．．．．．．．．．．．．．．．．．．．．．． 37 |
| Hetherlands（Holland）．．．．．．． 08 |  | Cuba．．．．．．．．．．．．．．．．．．．．．．．．．．． 38 |
| Erigium．．．．．．．．．．．．．．．．．．．．．． 09 | SCJTFERA EURORE： | Other West Indiesl／．．．．．．．． 39 |
| Luxemburg．．．．．．．．．．．．．．．．．．．．Or | Greeoe．．．．．．．．．．．．．．．．．．．．．．．． 26 | Ceatral drerica．．．．．．．．．．．．． 70 |
| Swtizerland．．．．．．．．．．．．．．．．．．． 10 | 12bania．．．．．．．．．．．．．．．．．．．．．．． 25 | South Anerica．．．．．．．．．．．．．．．． 71 |
| Trance．．．．．．．．．．．．．．．．．．．．．．．． 4 | Italy．．．．．．．．．．．．．．．．．．．．．．．．．．． 26 |  |
|  | Spain．．．．．．．．．．．．．．．．．．．．．．．．．．${ }^{\text {a }}$ | 151 OTEM： |
| CETTRAI LUROPE： | Portugel．．．．．．．．．．．．．．．．．．．．．． 28 | メrエica．．．．．．．．．．．．．．．．．．．．．．．．．． 72 |
| Cormany．．．．．．．．．．．．．．．．．．． 12 |  | durradia．．．．．．．．．．．．．．．．．．．． 8 |
| Poland．．．．．．．．．．．．．．．．．．．．．．．．． 13 | EnOPS（not specified）．．．．．．． 21 | drores．．．．．．．．．．．．．．．．．．．．．．．． 76 |
| Denz18．．．．．．．．．．．．．．．．．．．．．．． 17 |  | Orhar Atlantic Islands．．．．． 75 |
| Czochoslovaksa．．．．．．．．．．．．．．．以 | ASIA： | Pacific Isiands．．．．．．．．．．．．． 76 |
| Austria．．．．．．．．．．．．．．．．．．．．．．．． 15 | Pedeatize．．．．．．．．．．．．．．．．．．．．． 29 | Country not specifled（lia， |
| Hungary．．．．．．．．．．．．．．．．．．．．．．．． 16 | Syris．．．．．．．．．．．．．．．．．．．．．．．．．． 30 | Pa，or A1 in col．161．．．．．Fi |
| Tugoslavia．．．．．．．．．．．．．．．．．．．． 17 | Turxoy in dala．．．．．．．．．．．．．．．． 31 <br> Chfar．．．．．．．．．．．．．．．．．．．．．．．．．．．．． 32 | le sat（Na，Pa，or M in col．16）． $\qquad$ |
| $1 / 2$ erept possesaicas of the O | d States：Puerto Elco acd Fizg | Islerta． |
| 15 | CIICAI CODE IIST FOR TORETCX COS： | 205 |
| Code | Code | Coda |
| Arriot．．．．．．．．．．．．．．．．．．．．．．．．．． 72 | Grsane．．．．．．．．．．．．．．．．．．．．．．．． 26 | South inortca．．．．．．．．．．．．．．．．．V1 |
| Mrania．．．．．．．．．．．．．．．．．．．．．．．．． 25 | Holland．．．．．．．．．．．．．．．．．．．．．．． 0 O8 | Spain．．．．．．．．．．．．．．．．．．．．．．．．．．． 27 |
| Lela（not speciried）．．．．．．．．． 3 I | Eungary．．．．．．．．．．．．．．．．．．．．．．． 16 | Sweder．．．．．．．．．．．．．．．．．．．．．．．．．． 06 |
| dustralla．．．．．．．．．．．．．．．．．．．．．${ }^{\text {V }}$ | Iosland．．．．．．．．．．．．．．．．．．．．．．． Or | Switzerland．．．．．．．．．．．．．．．．．．． 10 |
| dustria．．．．．．．．．．．．．．．．．．．．．．．．． 15 | India．．．．．．．．．．．．．．．．．．．．．．．．． 3 S | Syria．．．．．．．．．．．．．．．．．．．．．．．．．．． 30 |
| droroz．．．．．．．．．．．．．．．．．．．．．．．．． 7 仡 | Irimh Free State（Eire）．．．．． 04 | Thricy in dsia．．．．．．．．．．．．．．．．． 32 |
| Belgiv．．．．．．．．．．．．．．．．．．．．．．．． 09 | Italy．．．．．．．．．．．．．．．．．．．．．．．．．． 26 | Turxey in Europe．．．．．．．．．．．．．． 27 |
| Bulgaria．．．．．．．．．．．．．．．．．．．．．．． 23 | Japan．．．．．．．．．．．．．．．．．．．．．．．．． 33 | U．S．3．R．．．．．．．．．．．．．．．．．．．． 18 |
| Canada－Prench．．．．．．．．．．．．．．．．． 34 | Latria．．．．．．．．．．．．．．．．．．．．．．．． 1 I | Keles．．．．．．．．．．．．．．．．．．．．．．．．． 02 |
| Ganade－Kngl1ah．．．．．．．．．．．．．．．． 35 | Lľbuanim．．．．．．．．．．．．．．．．．．．．． 19 | Vest Indies（excapt Cuba， |
| Contrai denrios．．．．．．．．．．．．．．．Vo | Luxamburg．．．．．．．．．．．．．．．．．．．．．． 0 Ox | Prerio Rioo，and Virglin |
| crina．．．．．．．．．．．．．．．．．．．．．．．．．．． 32 | Mexioo．．．．．．．．．．．．．．．．．．．．．．．．． 37 | Inlands）．．．．．．．．．．．．．．．．．．．．．． 39 |
| Cuba．．．．．．．．．．．．．．．．．．．．．．．．．．．．． 38 | Notterlanda．．．．．．．．．．．．．．．．．．．． 08 | Yugoslavia．．．．．．．．．．．．．．．．．．．．． 27 |
| Czeohoslovekis．．．．．．．．．．．．．．．．． 2 | Newroundland．．．．．．．．．．．．．．．．．． 36 |  |
| Danzig．．．．．．．．．．．．．．．．．．．．．．．．． 17 | Northera Ireland．．．．．．．．．．．．．． 03 | Atlantio Islends（erope |
| Dermark．．．．．．．．．．．．．．．．．．．．．．．．．．． 07 | Normay．．．．．．．．．．．．．．．．．．．．．．．．． 05 | dzores，Iesland，and |
| Insland．．．．．．．．．．．．．．．．．．．．．．．．．${ }^{\infty}$ | Palestine．．．．．．．．．．．．．．．．．．．．．． 29 | West Indies）．．．．．．．．．．．．．．．．．． 75 |
| \atmia．．．．．．．．．．．．．．．．．．．．．．． 20 | Poland．．．．．．．．．．．．．．．．．．．．．．．． 13 | Pactifo Islands．．．．．．．．．．．．．．．V6 |
| Xurope fnot mpoolfiedi．．．．．．． 2 | Portugal．．．．．．．．．．．．．．．．．．．．．．． 28 | Country not spoolried（Na， |
| Finland．．．．．．．．．．．．．．．．．．．．．．．．． 21 | Rumania．．．．．．．．．．．．．．．．．．．．．．．． 22 | Pa，or Al in coi．161．．．．．．． 78 |
| Trance．．．．．．．．．．．．．．．．．．．．．．．．．． 11 | Rusaia．．．．．．．．．．．．．．．．．．．．．．．．．． 18 | At soa（Na，Pa，or al in |
| 0．r：ลппу．．．．．．．．．．．．．．．．．．．．．．．．．．． 12 | Sootland．．．．．．．．．．．．．．．．．．．．．．． 02 | col．16）．．．．．．．．．．．．．．．．．．．．．${ }^{\text {P }}$ 9 |
| $88^{51}$ |  |  |


(Thls tuble Is based on both the ocopulaory sothood attandacoe laws and the chile labor lans permiting exemptlone for o=ployment

|  |  | 8tateAse <br> (both years <br> inalusivo) |
| :---: | :---: | :---: |
| Alabemi.................. 78013 | ```Loulsfanm: Orleane Parlah......... 8 to 13``` | Morth Dakota.............. 7 to 13 |
| 1x1zaxa.................. 8 to 13 | Bal. of State........... 7 20 13 | Onlo....................... 6 to 25 |
| drkanses................. 7 to 13 | Mane..................... 7 to 16 | Okl aboce................. 7 to 23. |
| Calrarnie.............. to th | Yaryland................. 78023 | Oregon.................... 7 to 13 |
| Colorado................ 8 to 13 | Kassaobusetra........... 7 to 25 | Pennsylvansa............. \$0 25 |
| Conncoticut............. 7 to 15 | Moxisan................. 7 2 4 | Rhode Island............ 7 to 13 |
| Delemere................ 7 to 13 | Mnnesote............... 13 | South caroline.......... 7 to 15 |
| Dlst. Columbla........... 7 to 13 | Masiandppi.............. 7 to 12 | Bouth Dakota............ 8 to 13 |
| Flordda................. 7 to 13 | vessouri.................. 7 to 13 | Tensesese................ 7 20 13 |
| Coorgis.................. 6 to 13 |  | Taxam..................... 7 约 |
| Idabo.................... 8 to 13 | Nobraska.................. 7 to 13 | Drak....................... 8 en 23 |
| I21naim................ 7 \% 13 | Nerada.................... 7 \% 23 | Vermant.................. 8 . 17 |
| Indiann.................. 78013 | Hev Hampstive........... 8 \&o 23 | V1rginia................. 7 to 13 |
| 工rwa........................ 7 to 13 | Eev Jorsey................ 7 \%o 23 | Tasblegton............... 880.13 |
| Kansag.................... 7 to 13 | New Kexio0.............. 6 to 13 | West virginde........... 7 to 25 |
| Sentuckr.................. 7 to 13. | New York.................. 7 to 15 | Wisoonain. ................ 7 to 25 |
|  | North Carollfa.......... 7 to 25 | Hroving. . . . . . . . . . . . . . 7 - No |

Hat 14, 1960
895

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## 


 ulation Coflagh. Rean jou oode an hoad a persen other than the one oflzizelly geturiod an hoad do
 the oausarator) to the preaent head.
 are aceoptable and stould aot be rafarrad for apecisl editing if the eatry in col. 32 la $\{5,000$ e
 e01. 33.
 referred for apecial oditias.

 6 la not to be changed to wyese even though there gay be a farm Sobodule anterod in eol. 36. If
 cher.
5. Co1. S. Paragraph 19. Read cerafuly paragraph 20 of the Geresal Ingtriations for Operation 7. If. the word "head" bea been canceled in an earlier operation, follow the lastactions siren 1a parascajh 20. If chere is a group of persems wheh jou bellere constitutes a aoperate
 sirge person choula be coded "hosd" and the household garkod miz" in the loft-hand margin of the somedule.

 Tor rhese proceod as follown:
(a) If an entire household is enumaratod on the out of order shesty, oode ste satries in the usual way an instructod in jaragraphe 19-29.
(b) Tor a person onumarated out or order, for whan the aumbor of the bousthold of which he 1! a meaber bas been clearly spociriod, code the reletionship of the person to the head do accortance with tho instruetions in paragraphs 19-29.
(a) Yor a person opinerated out of orter, for whon no rolacionship has bean specified, and for whan the housotold risitation aumer la-not given, sif to lind a household at the ane ad.. dresa, and 15 ose la found, code the perion'a relationship to the head ot the cousemold at thet addrasi la acocorance Fith the instructions in parigrapha 19-29.
(d) If there are a numer of persona enurerated on sheot 61 with the same adaress but Whan rolatiogship specisled, the flrst parson in the group should be coded as head and the realaice persons ss meabers of the same housctold in acoordance with the instructions in paragrapes 19-29.
(e) If thare ere a auber of persong listed consecutively for whom nelther the relationship nor the address la specifled, cose the first porsen la the group es head and the remalafag persona as mamera of the same household la accordance with the lastructiona ln. paragraphe 19-29.
 utivelf for whon mo foletivastip and no addzess has beta pocifled, bue oact of wion zes been

 the dastructioas in paracrapha 19-29.
 -9." laclue the soliowng:
(a) A household iscludizg 2 or mora unreleted kepers in lighthouses;



 to your Section celef:
(f) Misters and erow of reasela;
(s) Institutional horsoholde wheh inolude 1 or zore imates.
8. Othar Instruetions for Coolez Col. 1 . In the followig jastances the head of the housi-
 to the heads
(a) A mousehold consistlag of one religloun worker and his family with or xittout serfanss, such as m zlofiser and his fandr, a priest and housokeoper.
(b) A head with a amon law wis. the cogaon law wife ghould be oodod wi."
(c) A related group of persons living on boat or ressel, suoh as a mate lifiag aloze or with ma famiv.
9. In the followng lastances the first perscn in the housebold is always to be coded mov



## The oode "6" in to be assigned to persogs orber thaz the haed in the followizz eases:

(a) Households consistize of ecroup of serfazrs, such es buther, bousekesper, andd, chaurfeur, eto.
(b) Pergona in construction campa.
(c) Parsons ilfige in priface convalescent homes.

## Tho codo "x" 1s to be assigeed to persons oiber than the buad in casen like tso following:

(a) Faitresses ig reataurants, accetaries, or garege attoadants wo ilve in the bouse hald of ehe proprietor.
(b) A מusse or atteadant in c doctor's or deatist's ofilce who lives in his housthold.
(o) Persous 2a buak houses (umulily found on gheop and cattle ganches).
10. An 1astitutiogal samily, erea though the iascitution consists of geveral domitories, stould


 mola 0 , $1_{2} 2,050.1$.
L. To paragraph 29 add she follownag:

Relacionstip to head: Cose in col. A




L. Paragraph 29. Mare the 11rst person 2n a household of il or =ore lodgera was originally Listed me lodgex, paragraph 29 of the Instzuctione for opojation 7 coes not apply.
15. Col. 9. Paragraph 30. An for (wittan through the 11a) mist be chaged to capital 7 between the lines.
 the antry and oode 2.
17. Paragraph 32. If the ent5j 1s Eawnilan, Maley, Slanese (2mian), or Samoan, assien the code "g" la ool. 20. If the rsoe entry 1 a other chan these (and other than those apecio s1ed 1 p paragraph 32), refer the portfollo to the dasdatant operaticig chlefs.

 to be edsted acoordlys to the oolor or rioo of tze macmaite perent arcopt in the case of
 akould not be obanged.
19. Col. 11. Parageaph 33. If age is giren in moths for persoan orer ore far old, oorreat it to the last full jear.




 Beotion chief, wo whl aee that ther are retwred to Operation 6 for tramamisilon to the Dirialon of rital statistion.


22. Col. 12. Pasagrapt 35. inaz "in appeari for widowed, cancol the anjry and write re. Coilag le aot accoprable la this celuan.
23. Ba aure 20 ckeck the out-of-order sheets before chagi=g "x" to 7."

2h. Portsolios containiag aumerous oatries of marriedw with pouse absent (7) a=d without anerlen of "A\&" 2 m col. 12 are to be referrod to your Section chiaf.
25. Hate col. 12 1s blenk for a porson whose relerionship in col. 8 indicates thet be is a jareat do aot eater "S" in col. 12. If the marital gratus camot be deterfined on the basis of ene
 under 33 years ol̉ age, ezter she oode "7."

 Asaistant Operations chieft.
 the ontries. Ealzing of col. 13 1s to be done onfy then it la blank.
 the postiollo for apeoial editing.
 I agd code mecordimelr. $\mathrm{F}-5$ mould be.coded $30 . "$




33. Cols. 15 asd 16. Paragraphs 39-46. 111 paraons born in territories or poaseasiors of


 are to oe canceled.
 "Na," "Pa," "Al," "hs cit," te., are to be reforrod to tre hesistant operatior cmief, who wil
 Section chlef for speciel editing.
35. On page 26 of the index of forsign countries, provinces, cities, eta. with oode gumers, atrike through the anty

Sanea cruz
39 T. Ind.
If the onjy entry in col. 15 la Sante cruz, refer the portiolio to your section chief la order that he may obtaln a spelal fuling on the oode number to bo entored in code columa $C$.
36. When the entry of "Ireland" appears, code for Irfah Free State.
 sEructions so code for turker in zurope.l


37. Kaen she eziry of Canacan appeaza, codo for Canada Eajilsa.


 1098.
 "Sone bouse."
62. E01s. 17-20. Paragraph 51. The reference to wigeorporited placesi in the flrat seateace of paragrapt 51 mears places chat were lacorporated on hpril 1.2960 . Some izeorporaced places have been lecorporated alnoe 1930, and some lacorporated placea ia 1930 hare aigee been dialacorporat IF the enty in the headige of the ohedule disegreen with the Geographeris description, fefer rie Alacrapacy so the Eoadize Revim Seation.
43. Pazactaph 70. Fielated Persons for whou the seme migration code ghould be girep as Ls maiged she head do got include the followlag classes of persoma:
 or ase.
2. Wires, dauztrors-1n-1aw, and mons-1n-1aw wose oldest child is under 5 .
3. Elood relativen of persons in Glasas 1 and 2.
W. In order to essume thet the blazks or deshos in cols. 17-20 were used systematioalif by the equnarator for ditto zarks, the follo should contaln, for gersoan other that tice head, ocennlopal extrien that are different frea the ortries for the head. In mest ceses uncelated persong

 Ceflaite entriea zay be exreaded even to urelated persors. towerer, 15 the enueracor mas lefe
 the head, or 15 he bas zade ontries oaly for the first person or the sheot, fefor the folio to fhe Special zatcors of kernelan.
45. To Pollow Paragraph 71. Ineonsiatagt onteles in col. 17-19. Mmen the enceias in cols.

 taese rulos reaut in an uncessoanble decision, te may fofer the oase to tee statigeleice for Interanl Migration or ais represearetive.
46. In the usunl dismoreemat, the entyy for county is most likely to be wropg. Ther pleae and county do not agee and both ara in the Stara in col. 19, asaum that the place onty is correot.



48. When there are eneries in each of calig. 17-19 and go tro agree accept the state.

4\%. If plaoe ad county diangree and state is aot giren. aceept the place.
50. If place and state disagree and county is not given, aceept the State, and aseme tant tre
 มame in an adacent State.

 as rapresemitaz cte crial part of the county in which the jiren place li located. fraz tyefe are frezuent discrepadodes of this anture, refor the solio sor specisi edieleg.
53. 211t Ln red pencil al laconsistent entries to ledioate the izeerpretation eade.
 be found la tae Pastal Gulde La the I1st begianiag on Page 9hd.


 "Hary of the mane of a ship la the ouly entry. code F908.
 08 the instructions in paragraphs 76 to 76 of the Iasfrotions for ceafral Population Codiag. The entries in cole. 28-30 are not to be used in the detafination of the code for col. E (employment
 $7 ヶ$-76.
57. Occasionally you will figd mean for the aged or lacapacitated operated by private organ-



S8. Stasf members ad employecs of institutiona of any typa are not to be coded m9min ool. 2. If the enwerntor' Operarions chefs.
 Ieare col. $F$ blank.
60. Parggranh 76. Tha parazraph applies only to men enumerated as residing in the cce Campa
 does not apply to a man wo is onumerated with his faisif, evon thouzh an mab" enf be wittan after his an in col. 7.
61. Col. 26. Paragraph 78. in antry of oon in col. 26 is aceoptable wasa she code miv mas bean enterad 1a col. $E$.
62. Fractions of houra morked should be canceled.
 sician, a soldier, a turacer in $c$ jald. etc., cancel the anty and code "g9."
64. Cols. 31 and 32. Paragraph 82. Acd the 101lowifg sentence to thle paragraph:

If the entry in col. 32 is "No" or "Komen cancel the "No" or "Nore" and enter mon in col. 32.


66. If doplar sige appear in col. 32. cancel the doliar aigas.
67. "C" (coafldeatiel report) in col. 32 shoule be cancelad and col. 32 loft blank if a conflcential wege report has not been received.
 thero 1a a zaro 1a ood. 31.


 gowever, thes the Confldential Report is for the proper persoa.
 1s, ise zame of the Cazp tas beor eatorod in the keadicg of the sebedule. Tais paragraph does aot. epply co a zan wo la eaumarated wits bla fanly, oven though an "人b" gay be wiffea after hia geat in ool. 7.
71. Parastazh 83. Add the followhag seatences to thds paragraph:
(a)

(b) If cols. 32 of 33 is blent, or if For hea been conalatently enterod in col. 33 for
 stitutiona, ferer the folla to the lasistart opernelons chiet.
72. If the entry in ool. 33 is not easily read, code the entry.
73. Cols. 36 agd 37. Paracraph 87. If the entrien on theae liane differ from the informetion
 in elther ool. 36 or 37 la for a parant whth an aceaptable oatry of "american citizen born abroct," entar "ro" above the place of birth and rogard that parent as beri=g bean borz in the onited States.
74. Col. 35. Paragraph 38. Yothar Tongue. If col. 38 hes bean left blank by the onumerator, leare it blanc, and code "49" in col. H .
75. "huserian" in col. 38 should be coded "Gesma."
76. "Penasjirania-Duغci" in col. 38 stould be coded "Gefana."
77. . If tye mother tomgue ontered in col. 38 differs froit that urually spoken in the country of Dirit of fatear or mother, aceapt the antry an it appears.
 tro forelgn legragern code the first.
79. zatries of "gwias" or "Balgian" in col. 38 are to be referred to the Asslstant oparasions Chiefs for ceterniaation of the code.
80. Col. I. Zoter af" in coluan I 15:
(a) Cols. 36-50 are completely blank, oxept possibiy for a mon in col. 39.
(b) Cols. 36-50 beve been completely canceled, oven though some larofation hes subsequently been entared in red peacil by special edicors.
(a) Cola. 36-50 tave been loft blank by the anuarator and red percil entries appoer osiy in cols. 36-38. (If entriea are in fed ink or black ink, do not code "8.")
(d) Cols. 45-50 bave beon canceled acd the gase in col. 35 tes been changod in rod peacil.





 घis represanative.
81. Cols. 39, LO, and hi. Paragraph 89. Drerase caution hould be oxerolaed in the 1ater-


 able la cortain, use the code "7" farher gran a apoolal oode.
6. If throughout the portfollo the entries in inese oolvan appoar contraciotory, fefer the portsollo for apecial editiag.
03. Cols. L2, 43, and h6, Sooial Socueity, Djagel parsjraph 91, a
 the eaunarator's entry in col. Wh is tht dode; in these oases, you need aot make any earry. for
 is then to be enterod in col. H, , and at other times no oode will be required.
sh. The entrias (oleher enumerator's or ooderin) thet ahould appoar in col. Whefter coding, are sumarized below

| $\begin{gathered} \text { Col. } \\ 62 \end{gathered}$ | $\begin{gathered} \text { Col. } \\ 43 \end{gathered}$ | Col. $46$ | Code for Col. L | Meanizr or cose |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Yos | Yos or blank | 1 | No ooding to be dore | Les 3.3. No. | Deductions from |
| Yes | Tes or Biank | 2 | No oodicg to be done | Ens 3.3. ${ }^{\text {Po, }}$ | Deduationa-frail onetall or zors |
| Yes | Yas or blank | 3 | No codinc to be dose | प्रes S.5. No | Detuctiona frem less reant |
| Yes | Yes | Yes | Cancel "Yes" and oode " $5 . "$ | Has S.S. Ho | dmount of deductions untrown |
| Tes | Yes | Blank | code "5." | Enas S.S. Mo. | dzount of doductions undana |
| No | No or blagk | Noze or black | Cancel "Nome" and code "0." | Does not hate |  |
|  | If there is an antry of "No" in col. b2, Tean in col. b3, and min in col. th, asd ste pergoz is daplatioly worki=g at an occupation in the fallway iadustry, do not oancel ten exiey in col. Le. |  |  |  |  |
| Yes | Ho | Blank | code "b." | Hes S.3. Ho. | Ko dedustions |
| Yoz | Black | slank | code 6.6 | Eas S.S. No. | Datenown wather coductions |
| Asy orter coablastioas. |  |  | Caneel eatry in col.uh |  | Vabenew 3.3. status |

if there is ane, and
leave blank.
8. Col. K. Paragzaph qh. Corract (a) to fand as follows:
a. Code "O," for owad, 15 mon appears in col. $L$ on the line for the tead (or for a person rolated to the head) of the housotold of which tee persoa on the suppleaentery ilae 1s a related nember (code $0,1,2,3,4$, or 5 in eol. i).
b. Leare col. K blank if thera ls ao eater in col. L for tee bead or any relatad =eter

 as crop" ese., leave col. L blank.
 I blajk area ťociza a jigure any appear in cod. S.
38. C91. if. Pargoraph 99. If the parson to be codod la col. $N$ is an dererican elitizen bora obroad, coasider the person as aative.
89. This adtamdu (No. 2) supersedes all prortous addence to the Instrucions for Geacral 30:ulasion Coding - Operaion 7.

(1) Paragraph 56; 11ne 2 "eol: $17{ }^{\prime \prime}$ should raad "col. 20"
(2) Zaragraph 70a. If any or all of zhe eatriea in cole. 17-20 are lackiag for a ch11d, efe 5-13 laciusive, gire the child the same code as lis nother, or 15 the notter 1 s not a meaber: of tye bousetiold, as lte father.
(3) An aniey of "Long Islead, Now York" with no county or place mentioned ahould be given the code 507 for Neasau County, New York.
(b) Lise 1, page 43 IOTA

Falley Junction eity polk "esfl" Name abaged to West Des Volnee

(6) Llat 2. page 62 Fmistiplivi Horristown
should rend "Norristoms"
(7) Lfat 2, page 72 Drfaitar Delanc*
(8) Llat 2, page 83 NET JRPEI Rivaride

Sussex "712" should read "711"
Berger "574y Naere changed to Rivar Efge

(10) LLat 3, page 100, footnote Coextensive with Now Orlearn eity, "Code 8547" chould read "Code 6547."
 If the name of one of szese two countles appears in col. 18 , code 787, for fultor.

(11) Llat 5, pego 111 | "Canada-Franch 3408" |
| :---: |
| "Carada-Eachish 3508" |

sㄱuld roed manada 3L08"
(12) Lat 7, page 215 (1)

Delete Gardiner Kennebec 502
(13) Lhat 7, pege 117 Hessuchosrits "9riacleld"
atoule read "Brimicle"

atould read "Croydoz"

should reed "Louson"
(16) Lat 7, page 120 Now hutsims "orfora"


Noverber 12, 2950

Hereafter, all oodars whose work is ollgible for sample vorification, that is, those coderis who hape been lastructad to write the latter " $Q^{\prime \prime}$ in the right hacd cargin of the lino for ganoral population ooding on tho Portfolio lemozandum, aro to code colum by colum (in some cases, a group of oolumal rather tean line by line. Gameral fules to bo followed are:

1. Follow the instruations for Operation 7 as now written, makizg only those chacks for consisteney botween oolums specifiod in the instructions.
2. Complete the "d" side of the schedule before beginaing the ${ }^{-10}$ side, ete.

Proceed as follows for the coding of the speoific oodimes:

1. Code Colum 6 in mocordance with the instructions in Paragraphs 16-18.
2. Coda in Colum $A$ the ontrios in Colum 8 in aocordance with the in--structions in Paragraphs 19-29.
3. Check Collwa 9 to be sure there is an entry of $M$ or f for ovary porsc_ and that this is oonsistont with the name and rolationship.
4. Codo the antrios in Colum 10 and supply any missing antries in aceordance with the instriactions in Parazraphs 31-32.
5. Checik the antrias in Colum 11 in accordance With the instructions in Paragraphs 33-34.
6. Procoed in lixo manner to code the entries in Colum 12 in accordance With the instructions 10 Perazraphs 35 and 36 ; tho ontries in Columan 13 in accordance witt the instzuctions in Paragraph 37; the entries in Columa 16 in accordance with tho instructions in Paragraph 38; the eatries in Colum 15 in accordance with the instructions in Paragraphs 39-43; and the entries in Colum 16 in accozdance with the instructions in Paragraphs L-L6.
7. Colums 17-20 will be treated as one section and the code for Colum D suppliod on the basis of the ontries in these columes in accordance with the 1nstructions in Parasrapis 47-73.
8. Colums 21-25 should also be troated as a unit and the ontries in these colums codod in Colum Z in accordance with the instruetiors in Paragraphs 76-77.
9. Proceed to code Colums 26, 27, 31, 32 and 33 columa by colum.
10. Code the supplementary lines, ilne by liee as heretofore, in accordance with the instructions in Paragraphs 85-110.

Approvad:


Novereber 16, 19L0.

Appendix III
ACE ALlocation tables USED in 1940 CENSUS*

## Figure 1: Age-Education Relationship Table <br> Figure 2: Husband-Wife Age Relationship Table <br> Figure 3: Flow Chart of Age-Allocation Process <br> Figure 4: Age-Occupation Relationship Table

- Source: U.S. Department of Cormerce, Bureau of the Census, The Elimination of Unknown Ages in the 1940 Census, prepared by W. Edwards Deming, January 1942. Figure 1: p. 11; Figure 2: p. 12; Figure 3: p. 8; Figure 4: pp. 13, 15.

| SSTDATION OF ACE FROM RIGEST CRAS OF SCBCOL CCMPLETED |  |
| :---: | :---: |
| IIfehost grade of sctool ccmploted | ife to be assloned |
| 0 | 6 |
| 1 | 7 |
| 2 | 8 |
| 3 | 9 |
| 4 | 10 |
| 5 | 11 |
| 6 | 12 |
| 7 or 8 | ${ }^{1} 13$ |
| 7 or 8 | -14 |
| 9 (H-1) | 15 |
| 10 ( $\mathrm{E}-2$ ) | 26 |
| 12 (E-3) | 17 |
| 22 ( $\mathrm{E}-4$ ) | 18 |
| One yoar of college (C-1) | 19 |
| Two jears * (C-2) | 20 |
| Taree * * (C-3) | 21 |
| Poux * (C-4) | 22 |

CRAS OF SCKCOL CCMPIETED

FIGURE 2
 WIYRS. ON TEF BASIS OF SPEGELUN'S FINORES

| To flnd age of husband |  |  |  | To rind ego of wiro |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\begin{aligned} & \text { WLE's } \\ & \text { age } \end{aligned}$ | $\begin{aligned} & \text { Eusband': } \\ & \text { age } \end{aligned}$ | $\begin{gathered} \text { TLSo's } \\ \text { ago } \end{gathered}$ | Husband's ago | $\begin{gathered} \text { Eusband's } \\ \text { age } \end{gathered}$ | $\begin{aligned} & \text { Wireis } \\ & \text { ago } \end{aligned}$ | $\begin{gathered} \text { Eugband's } \\ \text { age } \end{gathered}$ | $\begin{gathered} 715 e^{\circ}= \\ 9 e^{\circ} \end{gathered}$ |
| 15 | 20 | 53 | 55 | 15 | 14 | 57 | 53 |
| 16 | 21 | 54 | 56 | 16 | 15 | 58 | 53 |
| 17 | 22 | 55 | 57 | 27 | 15 | 59 | 54 |
| 18 | 22 | 56 | 58 | 18 | 27 | 80 | 55 |
| 19 | 23 | 57 | 59 | 19 | 18 | 61 | 56 |
| 20 | 24 | 58 | 60 | 20 | 19 | 62 | 57 |
| 21 | 25 | 59 | 61 | 21 | 20 | 63 | 58 |
| 22 | 28 | 80 | 62 | 22 | 21 | 64 | 59 |
| 23 | 27 | 61 | 63 | 23 | 22 | 65 | 60 |
| 24 | 28 | 82 | 64 | 24 | 23 | 86 | 61 |
| 25 | 29 | 53 | 65 | 25 | 23 | 67 | 62 |
| 26 | 30 | 64 | 66 | 26 | 24 | 68 | 62 |
| 27 | 31 | 85 | 67 | 27 | 25 | 69 | 63 |
| 28 | 32 | 66 | 68 | 28 | 26 | 70 | 64 |
| 29 | 33 | 67 | 69 | 29 | 27 | 71 | 65 |
| 30 | 34 | 68 | 70 | 30 | 28 | 72 | 68 |
| 31 | 35 | 69 | 71 | 31 | 29 | 73 | 67 |
| 32 | 36 | 70 | 72 | 32 | 30 | 74 | 68 |
| 33 | 37 | 71 | 72 | 33 | 31 | 75 | 69 |
| 34 | 38 | 72 | 73 | 34 | 32 | 76 | 70 |
| 35 | 39 | 73 | 74 | 35 | 33 | 77 | 7 |
| 35 | 39 | 74 | 75 | 36 | 34 | 78 | 72 |
| 37 | 40 | 75 | 78 | 37 | 34 | 79 | 73 |
| 38 | 41 | 76 | 77 | 38 | 35 | 80 | 73 |
| 39 | 42 | 77 | 78 | 39 | 38 | 81 | 74 |
|  | 43 | 78 | 79 | 40 | 37 | 82 | 75 |
| 41 | 44 | 79 | 80 | 41 | 38 | 83 | 76 |
| 42 | 45 | 80 | 81 | 42 | 39 | 84 | 77 |
| 43 | 48 | 81 | 82 | 43 | 40 | 85 | 78 |
| 44 | 47 | 82 | 83 | 44 | 41 | 86 | 79 |
| 45 | 48 | 83 | B4 | 45 | 42 | 87 |  |
| 46 | 49 | 8.4 | 85 | 46 | 43 | 88 | 81 |
| 47 | 50 | 85 | 98 | 47 | 43 | 89 | 62 |
| 48 | 51 | 86 | 87 | 48 | 4 | 90 | 83 |
| 48 | 52 | 87 | B8 | 49 | 45 | 91 | 83 |
| 50 | 33 | 88 | 89 | 50 | 48 | 92 | 84 |
| 51 | 5 | 29 |  |  | 47 | 33 |  |
| 52 | 55 | 30 | 20 | 52 | 48 | 54 | E5 |
|  |  |  |  | 53 | 19 .8 | 75 75 | 57 -3 |

FIGURE 3
THE MASTER INDICATOR

the 13 bRoad occupational groups and frequeicy distributions of each group (by sex)

- Oecupation

Profosaloand and sealproiossional wortars
a. Profossional workers
b. Senfprofessional workars

Farmers and fara maregera
propriators, manazers, and orficials. oxcopt farm
Clorical, sales, and kiadred workars
a. Clorical and kiadred workers
b. Salesmen and saleswomen

Craftmen, foremen, and kindzod workers
Operstivas and kindrod workers
Domestic sertice workers
Protactivo sertice workers
Serrice wo=kers, oreapt donestic and protective
Farm laborars and forsmen
Laborara, oxeopt fara

| ABe | Code nimber of beoed occuparioral group |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | T and 2b, zelo |  | 3. male |  | $\text { 1, } \operatorname{cosin}$ |  | 20, $=10$ |  |
|  | Perzest | $\begin{array}{r} \text { no. of } \\ c=-12 \end{array}$ | FTreant | :io. of escal: | Fereat | $\begin{array}{\|cc\|} \hline \text { No. of } \\ \text { cacta } \end{array}$ | Farcent | No. o: ca....: |
| 14 and over.. | 200.0 | 250 | 100.0 | 250 | 100.0 | 250 | 100.0 | 250 |
| 14. | 0.2 | 0 | 0.0 | 0 | 0.0 | 0 | 0.1 | 0 |
| 15.......... | 0.2 | 1 | 0.0 | 0 | 0.0 | 0 | 0.6 | 2 |
| 16......... | 0.4 | 1 | 0.0 | 0 | 0.0 | 0 | 1.6 | 4 |
| 17.......... | 0.7 | 2 | 0.2 | 0 | 0.1 | 0 | 2.6 | 6 |
| 18-19...... | 2.4 | 6 | 2.1 | 5 | 0.6 | 2 | 7.3 | 18 |
| 20-24...... | 12.4 | 29 | 20.0 | 23 | 5.0 | 13 | 19.8 | 50 |
| 25-29...... | 14.8 | 37 | 22.6 | 32 | 9.3 | 2 | 15.5 | 39 |
| 30-34....... | 14.3 | 36 | 13.2 | 33 | 22.5 | 31 | 12.7 | 32 |
| 35-39...... | 23.4 | 33 | 14.2 | 35 | 25.1 | 38 | 20.7 | 27 |
| 40-44....... | 12.1 | 28 | 22.8 | 32 | 14.3 | 36 | 8.1 | 20 |
| 5-49. | 9.2 | 25 | 12.0 | 28 | 12.7 | 32 | 6.5 | 16 |
| 50-54...... | 7.7 | 19 | 8.7 | 22 | 10.8 | 27 | 5.3 | 13 |
| 55-59. | 5.7 | 14 | 6.4 | 16 | 8.0 | 20 | 3.9 | 10 |
| 60-64....... | 4.2 | 10 | 4.5 | 12 | 5.7 | 14 | 2.8 | 7 |
| 65-89.. | 2.4 | 6 | 2.6 | 7 | 3.4 | 8 | 1.5 | 4 |
| 70-74...... | 1.3 | 3 | 1.2 | 3 | 1.6 | 4 | 0.7 | 2 |
| 73 ond over | 0.7 | 2 | 0.5 | $1]$ | 0.8 | 2 | 0.3 | 0 | 1alo Laboryra, exeope fara Laborars (1, Yala Operatizes (느)

Ee=ale Crsitsponen and Formeman (F3)
Fe=ale Dozestic Sertice Vorikera (53)
Feal. Sorpice Worxers exespt
LCosestic a ad Protective (I7) Saleyeceon ( $\bar{z} Z 0$ )
Fanale Iera Leborvis, and Laborers exeapt Fara Laborere (F9 and 59) yall ian Labo:0.3 (Y8) Yale Fareara (yo)

| 28* | Cois ai=ber or sroed occupational group |  |  |  |  |  |  |  | Code s:uber o: bioed occtipelagel group |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{gathered} 4 \text { and } 9, \\ =10-5,5, \\ \text { and } 7,50=210 \end{gathered}$ |  | 2b. 20 |  | $\begin{aligned} & 8 \text {, eale - } \\ & 8 \text { and } 9 . \\ & \text { fomale } \end{aligned}$ |  | 0 , ealo |  | V. Foulo |  | 2n, fexale |  | 4, ravel. |  | $\begin{gathered} \text { 5, 6, } \\ 7,=a 10 \end{gathered}$ |  |
|  | $\left\{\begin{array}{l} \text { Per } \\ \text { eeat } \end{array}\right.$ |  | $\begin{aligned} & \text { Par } \\ & \text { eant } \end{aligned}$ | No. of carde | $\left\lvert\, \begin{aligned} & \text { fer } \\ & \operatorname{cent} \end{aligned}\right.$ | $\begin{array}{\|c\|} \text { No. } \\ \text { of } \\ \text { ender } \end{array}$ | $\left\lvert\, \begin{aligned} & \text { Per } \\ & \text { eant } \end{aligned}\right.$ |  | Per | No. 05 casd: | Pryceat | No. 05 cards | $\left\lvert\, \begin{aligned} & \bar{r} \theta \\ & \text { cese } \end{aligned}\right.$ |  | Por |  |
| 16 and over.. | 100.0 | $\geq 0$ | 100.0 | 250 | 100.0 | 230 | 100.0 | 230 | 200.0 | 250 | 100.0 | 250 | 100.0 | z20 | 100.0 | 250 |
|  | 0.2 | 0 |  | $0$ | 2.6 | 7 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.4 | 1 | 0.1 | 0 |
| 13.......... | 0.4 | 2 | 0.4 | 1 | 3.5 | 9 | 0.0 | 0 | 0.0 | 0 | 0.2 | 1 | 1.5 | 3 | 0.15 | 1 |
| 16. | 1.3 | 5 | 1.6 | 4 | 5.5 | 14 | 0.0 | 0 | 0.1 | 0 | 1.2 | 3 | 3.6 | 9 | 0.7 | 2 |
| 17......... | 2.0 | 5 | 3.0 | 8 | 6.6 | 18 | 0.0 | 0 | 0.3 | 1 | 3.2 | 8 | 5.1 | 21 | 1.2 | 3 |
| 18-19....... | 5.7 | 14 | 9.0 | 23 | 23.1 | 35 | 0.8 | 2 | 4.7 | 12 | 13.0 | 32 | 11.5 | 29 | 3.7 | 10 |
| 20-24.. | 15.8 | 40 | 29.5 | 49 | 22.0 | 53 | 5.9 | 15 | 27.7 | 59 | 33.0 | 83 | 20.9 | 52 | 12.8 | 29 |
| 25-29....... | 18.9 | 35 | 13.0 | 33 | 21.2 | 28 | 8.6 | 21 | 19.1 | 48 | 13.7 | 47 | 12.7 | 32 | 12.3 | 31 |
| 30-34....... | 12.7 | 29 | 21.3 | 28 | 7.1 | 18 | 9.9 | 25 | 12.3 | 31 | 12.0 | 23 | 9.8 | 25 | 12.8 | 30 |
| 35-39....... | 12.8 | 29 | 11.7 | 29 | 8.1 | 15 | 11.9 | 30 | 10.3 | 26 | 7.7 | 19 | 9.6 | 24 | 12.1 | 30 |
| 40-4...... | 10.0 | 3 | 9.9 | 23 | 4.9 | 12 | 11.7 | 29 | 7.8 | 20 | 4.9 | 22 | 7.7 | 19 | 10.5 | 25 |
| *-49...... | 8.7 | 22 | 8.0 | 20 | 4.5 | 11 | 11.8 | 30 | 6.1 | 15 | 3.2 | 8 | 6.1 | 15 | 9.3 | 23 |
| ละ-54...... | 6.8 | 17 | 5.7 | 14 | 3.9 | 10 | 12.4 | 29 | 4.9 | 22 | 2.9 | 5 | 4.5 | 12 | 8.1 | 20 |
| s5-59....... | 4.3 | 12 | 3.4 | - 9 | 3.0 | 8 | 9.4 | 24 | 3.2 | 8 | 1.0 | 2 | 3.0 | 8 | 6.3 | 16 |
| 60-64. | 3.6 | 9 | 1.8 | 4 | 2.5 | 6 | 7.6 | 19 | 2.0 | 5 | 0.5 | 1 | 2.0 | 5 | 5.2 | 13 |
| ES-E9. | 2.1 | 5 | 0.9 | 2 | 1.8 | 4 | 5.4 | 11 | 1.0 | 2 | 0.2 | 1 | 1.1 | 3 | 3.6 | 9 |
| 75-74....... | 0.9 | 2 | 0.3 | 2 | 1.1 | 3 | 3.4 | 8 | 0.4 | 2 | 0.2 | 0 | 0.5 | 1 | 2.0 | 5 |
| 75 - - - 0 - | 0.4 | 1 | 0.1 | 0 | 0.7 | 1 | 2.1 | 5. | 0.2 | 0 | 0.2 | 0 | 0.2 | 0 | 0.9 | 2 |

## Appendix IV

INSTRUCTIONS FOR CODINC OCOUPATION, INDUSTRY, AD CLASS OF WORKER (OPERATION 9)

## 

パール1ES
Mre 8－3F9

## OPERTION 2

## 

TH2 OCEUFATIOA ITDEI
2．In proparation for coding the oocupetion，loduatry，ad olass of worker retura in cols．28，29，and 30 of the population Schodule，an ocoupation fidor way preparod．The ooou－ pation lader ia printed in two fores－olessified and alprabetioal－－and a eaparase volume ia devotod to enoh form．In the Classified Index，the 25,000 or more cooupatiogel dealerationg of whot the index is oompoied ere arrunged in olessiriod fora，with vech designation under its propar occupation or oocupation group，and with oach occupation or oocupation group preceded by its oode symbol．In the $\mu$ phaberical Index，the occupational desigetiozs are arrageed alphabeti－ cally，and each desigation is followed by a ambol indicating to whech of tho 451 ooouparlons and oceupation groups of the classification it bolongs．The Mphabetionl Indox also ineludes mpprozimately 9,500 Loduetry cesignations．These denignetions are erranged ajpinberioally and eaob is followed by a smbol indicatiag to which of the 132 tities of the oencua fadustry olassi－ Iloation it belongs．

## CMNRAL CODINC PROCEOUR

2．Zach occupation coding eleck will hate a oopy of the Nphabetical Index of Ocoupatioas and Induatriea and a large oard entitied Thst of Priseipal Occupations and Industries with theis Sycbole＂on wich a nuber of the principal occupation and a numer of ehe priacipal laduatrles oontalaed in the injex beve been priated．In the oase of eech retura of an oocupation in ool． 28 and as lodustry in 001．29，look up the same occupation and industry in the index and anter in the firat two sections of col．I of the schedule the ajobol civen in the index．

3．Following tho instructions relatiag to the class of worker，printed on pagen 7 and 8 of the Mphabotical Index，and the supplimentary instructiona on this topic lsee paragraphe 13 to
 $\bullet$ in col． 30.

4．Code the oceupation，Lodustry，and class of worker antries in cols．45，L6，and 47 of the＂Supplezentary Questions＂section or the sctedule in accordance wit the ins zructiong for coding the corrssponding extriea in cols．28，29，ard 30 of the anin part of the schedule．In cese thers is no ontry in 001s．45， 46 ，and 47 ，or in case Fione＂has bean entered in 001． 45 ， entar the figure 7 in the third aection of col．J．

5．Copy in col．D of the＂Supplementary Questions＂seotion of the schedule the coden，if ary，encered for the ame peraon in col．F of the gain part of the schedule．

## GZAERI INSTIUCTIONS

6．On zeceifing a portiolio for codig，consult the portfolio memorandun on the front cover to aee wether or not the portsolio is to be examined（accordiag to paragraphs 26 to 23） for industrial home workers．

7．Before beginaing the coding，check the beet zumer in the upper fieht－hand coraer of the schedule to make are ther the sheets are arranged in consecutive order and thet the＂A＂ aide of each sheet is up．mere may be four series of sheet mumers：

E．Ros．1，2，3，eto．for households emumarated in regular order．
b．\＆os．51，52，ete．Sor sheeta originally gumbered 100 or rore，but changed in Operation 3.

0．Vos．61，62，etc．Tor hcusobolds and persons（excopt trassienta）not onumerated in reguin order．

6．No：81，82，etc．for transiegrs onumarated as of the night of lpril 8． 10295
8. Tlthin each of theso eories thero should be go ohoot gunbers c=itied. Thero rust be go

 rind that the onumerator's ontry for shoot number bas boon changod in ereon or red pencil ty tho Population and housing matohine olork. Acoopt auct changos as corroct. Do not ohango any abeot numbers.
9. Enter all oodes with red ponell.

## SPECIFIC INSTRUCTIOUS

10. Yost of the speoifio instruations for coding occupation, industry, and olass of workar roturas are contained in the Mphabetioal Inder of Occupations, under the title oInstructions for Using the Occupation Index" (pp. 6-15), under the titio "Instructions for Using the Industry Index" (pp. 16 and 17), and undor tho-titio "Instructions for Using the List of Principal Occupations and Industries" ( $p$. 28) . Io addition to these instructions, there are the followins aupplomentary lastructions:

## Coding Not Spocifiod" Industry Raturas

11. County data have been prepared on the number of eatablishments or wage earners in the nelected industries or types or work listed bolow. These data are to be usod as aida (i) in classifying apocifioaliy cortain tfpes of mot spooified" industry returns that otherwise would havo to be olassifiod in mot speciriod" industrios, and (2) in distiaguishing betwecn raturas for certaln tfpes of establishaents or industries which are difficult to difforentiato. Consult your section chiof berore asaigniag codes to inderinite returns of the industries covered by these data. From thesc data your Section Chief may be able to suggest the codes that are most likely to be oorroct.
12. Tollowing are tue industries, types of astablishmants, or typas of work for which county data have been prepared:
lutamebils Eactorise
Blast furnaces, steel works, and rolling mills
Cloth glote ractories, kentiad elovo factories, and leather glove faciorias
Cut stone and atone produces (manu:acturizg) and stone quarying
Tur goods factorios and fus drossing and dyoing factories
Eat body factorios and hat tringing and \#1111nory factorios
Iron and steel soundrios and noprerious metal foundries (coppor, brass, etc.)
Enitted outerwear (manuracturing)
Leather tanheries and leather product ractories
Lumber 1ndustries (solected)
Mining industries
Nary rards
Nomsorrous metal primary products and miscollanoous nonforrous motal industries
011 and fotrolem industries
Paper and pulp mills
Paper bas ractorios and bag factorisa other than paper
paper box factorios and mooden bor ractories
Rallroad car bulldigs shops and repair shops operated by steam or atreet rallroads
Rayon chemical faotories and rayon tertile mills
nubber boot and shoe raotories
Tertile 펀:
Onderwear keltting mills and other underwar factories
M.P.人. projectz

Wiro mills
Wrought pipo mills
10295

## Chocking and Codisg ciass of Norker" Entrios 1a Col. 20

13. These inatruotions are aupplementary to the baalo lastruations for chocking and oodiag the entry in ool. 30 of the population Sotodule, which are preseated on pages 7 and 8 of the ellphabetioal Indox of Occupations and Induatrios." Tou shotli booome thoroughly familar with the dasio inatruatioas. You should also roviow paragraphs 569-575 of inatructioas to zanorators," whioh explain the eatrios in col. 30 of tho eohodule. The following aupplementary inatruations deal with (a) rulea for codicg "olase of worker" wan the enumerator bas omited the "olasa of worker" entry in ool. 30 of the ochedulea; and (b) rulos for deteotias lacorrect ontries in col. 30 and for supplying tho oorroct codes.for such ontries. Note hat in ease of miseing or incorract ontries in ool. 30 , jou are not to make ontrios or corroctions in that oolume-meroly onter the proper oodes in the ehlrd space in col. .
14. Rulos for codinz "Class of Workor* when thero is no ontry in ool. 30. (Tor any case wioh doos not appear to be coverod by one of the following ruloa, oonsule your soction Chief.)
a. Code as "2" (GN) any person coded "2" (pubile emergonay workor) in col. E .
b. Code as "2" (GN) amy person coded "95" (Postal servico), "96" (Mational dofonso). "97" (Foderal govornment n.e.o.), or "98".(State or local govermont) in the aecoad (1ndustry) apaot in col. $\mathrm{F}^{( }$
c. Code as "2" (GW) any other person who, according to the occupation-industry eatry in cols. 28 and 29, la-amployed by any govarameatal agancy (Federal, State, county, maniaipal, etc.l.
d. 1 faraor for whom a.Farn Schedule is roturnod (a numbor in col. 3b) should be coded as " $3^{\prime \prime}$ ( B ), prorldad that he is the kead of tho household or relpted to the head of the housabold ( $0,1,2,3,4$, or 5 in code col. A) and thore is an uncolated mamber of the housohold ( $6,7,8$, or $I$ in codo col. 1) who 13 a farm worker or fare laborar and is raported as "PM"; 15 go uncolatad zemer of the bousohold is a ram nerker or facm laborer raported as "Mr" the code for the related parson for whoz a Farm Setedule was retureed should be "L" (OA).

- A farm workor or fara laborar for whom a Farm Schedulo was not raturned (mo ontry in ool. 36) should be coded as "1" (PN); oxcept that a related =e=ber of the heusezold, other than the haad ( $1,2,3,4 ;$ or 5 in code col. A) with an antey of "l" or $70: 8$ in 001 . 31 (weoks workod) and "On or blank in col. 32 (wagos) should be coded "5" (irp) if the hoad or another rolated momber is a farmer.
f. Code as "3" (I) the proprletor or onzar of any establishaent or enterprise which usually requires the assistance of eaployeas (e.g., ractory, ill, newspaper, atc.).

6. Code as "L" (OA) the propeiator or omer of any establishenez or entorprise about which thore is coasiderable doubt as to whethar it raquiras the assistance of emplojoes (o.g., ratall grocory stoza, gas fllilag stacion, physician or lawjor with privato practice, etc.).
h. Code as "l" (PH) an officar, suferfisor or any other omployoe of any non-zovernmental establish=ant or eaterprise which is entered as "corporacion" in col. 29.
 ia no-indication that the persoz is omplojed by an outside eczercial emplojor) stould be coded " b" (OA) $^{\prime}$ if an adult, and "5" (NP) if a child under 13 jears old.
7. Code as "1" (PW) all other persons for whom thers is no orldonce in the schedule to tho contrary. 10295
8. Rulog ror dotuctise and coding alnconalstont" oleas or workor entrion in col. 30. (Note that goace of tao rulos listed abova in peragraph if for oodins olasi of morker whon the ontry in col. 30 bas boen omited ara repoated below, mile othora are not. Do not uat ary of the ebove rulea maloh aro not listed bolow to rato corrections in ontriea in ool. 30. If any onse of appareat inevasistency arisea to which the following riles do not apply, oonsult your Section Chios).

Correot Code
Correct
(in 35d apace
Inoonsigtent Entrios in Col. 30
Entry
of col. F1
a. Any entry other than "Gw" for a parson codod "95" (Postal sorvice). "96"(National cefense), "97" (Tadaral government n.e.o.), or "g8" (State or 200 al
goveramont) in the seoond (1ndustry) space in col. Y..............
b. Any entry other than wown for any other person Who, according to the occupation-industry ontry in cols. 28 and 29 , is omployod by any goveramantal agoney (Yedoral, State, county, municlpal, otc.).................................
c. An entry of "Od" for a farmer who is the hoad, or related to the head, of a housohold $(0,1,2,3$. 4, or 5 in code col. A) and for whom a Farm Schodule was roturaed (a numberin col. 3h) if there is a farm laborer or farm worker in the houschold for whom the entry in code col. $A$ is " $I^{\prime \prime}$ and who is roportod as

d. An entry of "OA" for a person working in his own home for a camercial employar (see paragraphs 16 to 19 below) . 7 표
0. Ray ontrif other than "FA" for an officer, supervisor or othor employee of any non-zovaranent establisheant or eaterpise whish is entered as "corforation" in col. 29.................................................................

1. An antry of "RN" or "nP" for the proprietor or owner of any ostabilstmont or enterprise which typically requires the assistanco of amployees (e.s., sactory, Eill, nawspapar, ate.)................................. $x$
g. An entry of "PW" or "NP" for the propelotor or okzar of any establishmeat or entorpriso about which there is coasiderable doubt as to whethor it requiras tho assistanco of emplojeos (a.g., fotail grocery stora, gas fliling station, etc.)...........................os \&

2. lo entry of mis" for the head of the household or for an uncelatod me=ber of the housobold

(Code according to otter orideace on the schedule, especially occupation entries.l

## INSIRUCTIQN YCR INDUSTRIUI HOLE WORKER RRANSCRIPTION SHEET

16. Some portfolios are to bo eramined for indugtial mone workerg, and ocrtaln information for such persons is to bo transcribed from the echodules to apecial industrial Hore Worker Transeription Sheot" (Form P-35B). Each portfolio so be eramined la ldentifled on the portiollo memorandum. There must be Fransoription Sheet for each 0: those portfolios. If no industrial home workor is found in an E.D., 1111 out the hoading of the transoription gheet and write wone" toross the race of the sheet.

## Identlfying Industrial Home Woryors

17. Deflnition. As industrial hoae worker is one wo works in his or her own home for a oomeraial oeployor who, in turn, furalshes the materials or products on which the person works. The exployor usuelly is a manuraoturing concern.
18. Proper form of returas. A proper return for an industrial home worker should include the worde "et home" in the oceupation colum of the sohedule, following the oocupation titie, and should state, in the industry colum, the kind of business or factory by which ehe person wea employed (see Instructions to mumerators, paragraph 566). Eramples follow:

| Docupation | Industry |
| :---: | :---: |
| 28 | 29 |
| Sowar at home | Dress saatory |
| Button oarder at home | Button factory |
| Inoe maker at home | Lace Sactory |

19. Digtiaetion botwen industrial home workers ard other workers at home. care must be exergised in distingulshieg betweon iadustrial home workers, who work for comercial mployers, and persoes who woric in their own hoees for themelves, other members of their familes, or for individual customers (see Instructions so Enumerators, paragraphs 564 and 565). For sare industrial homo workers the words "at homo" may be entered in error in the industry colum lastoad of en industry designation. . Industrial hoze workors stould hare beon returied only an wage woricers (PN) or as unpaid facily woricers (ITP), whereas hoce workars got workiag for conercial employers usually should hare beon returaed as worcias on thair own aceount ( $O A$ ) or as unpaid ranily workors (NP). Tze following procadures should be followed la distinguishing between fadustrial heme workers and other persons workiag in their own homes:
a. dey person woriciag in his own home, for whor the elass of worker returaed is "pim, should be considezed as an industrial home workez if there is eridonct that the porson is worting for a coraserial employer and is not meroly working in some bome enterprise (as a store, dressmaking shop, or f111ing station).
b. day person woriciag iz his own boze, for whom the class of woricer returaad is moin should got be consleered as an incustrial hoee worker umless the occuration or drdustry return indicates that the person is workiag for a comereial employer.
20. dny person reporead as an unpaid family worier (NP) ghould be congicozed as an in-" dustrial hoae workar ony if amother rola:ed mezber of the sang household--particularly a parent--is ocgaged in two same kizd of nork and is returaed or is ciasgified as an industrial ho=e worker. 10295
21. Kost cosion typos of Industrial hceo work. The following list, prosontod as an ald In idontifylag laduserial hoce workors, laoludes one of ito cornon types of industrisi hame work. Incustrlal home workors will be founc la other lines or work, but tbe list suggests the types of returan for waloh to waroh:

| Buncting aarety ping | Uaking collars |
| :---: | :---: |
| carding bobby plas | Nakine doll drasses |
| Carding buttons | Lating glores |
| Crocheting | Laking bandbags and purses |
| Cutting ambroidery | Laking infants' and chil- |
| Cutting laoe | dren's wear |
| Drawing thraede from laoe | Naklug lamp ohades |
| Embroidering | luaking amples of art |
| Hemming handkerchiofs | needlewark |
| Enitting | Sowing gasments |
| Making artiflcial flowers | Stringing greeting cards |
| Kaking bodapreads | Stringing tags |

## Filing out Transcription Shoot (Porm P-358)

21. For each person idantified an an industrial home worker, fill out a 110 on on the Industrial Home Korkor Transcription Shoot (Form P-358), belas ceroful to record each code symbol, abbraviation, or other ontry for which provision is ande on the bheet.
22. 112 ontries on the Transcription Sheot, axeopt the third, are to be transeribed dircotly from the sobedules. For the third entry, Number in housohold," enter "i" for the firat (or only) person in a bousohold engaged in induatrial hoae work, enter $\mathrm{m}^{\mathrm{n}}$ for the aecoad person in the ame household so engaged, eater "3" ror the third persoa, eto. With the exceprion of schedules on which the shest numbers aro 61; 62, ote, the zeabers of a housetold can be ldeatigied by the codes in col. $A$. In this colum, the code mon for head will fopreseat the
 hold on the i=ediately following linex. If you find any industrial bo=e korker for whem eliter Vor 9 is entered in ool. $A$, zefor the portfolio to your Soction chief.
23. Industrial home workars may appear on one of the shects numbered 61, 62, ate. In such cases, rafor, by means of the household risitation aumber eatared in col. 3, to the entries for the other members of the household on the proceding oheots, in order to determine the proper entry for the "Number in household" colum on the Transeription Shest.

## SICNING TME PCRTTYOLIO LMORANTM

24. When you have completed coding a portfolio, make the proper entries on the portfolio memorandur on the frent cover to show that you have done the coding erc that, if celled for, you have made the tranacription of data relating to industrial home voricess.

## Appendix V

DESCRIPTION OF PLNCH CARDS (A-S)
USED IN 1940 CENSUSES OF POPULATION AND HOUSING

The various puach caria being asad in the Population Census and Eousing Congus of 1940 are presented and described bolov．T：e roquirad statistics are obtelaed by evrelig and tablu lating these cardsion machise：which are operated through electrical contacta ande through the holes in the cards．

01 of these eards are of the 45－colum typs．In gezeral，this type of carit in adequate for the mant（person，bouschold，fanlly，or dwelling unit）that tho cara＝epresezte． The use of a Greater cuzber of cards with 45 coluens，rathor than fover carda vith fore colunag， makes possibio eroater floxibility in the tabulation progran．Hiso，special ceasus tabuiating gachiaes called＂unit tabulators＂have beon developed that aake possibie very rapid counts of the characteristics repseseated by the parches in the card．

In genoral，the anbor of the schedule or transcription aheet coluan：froa mich the
 description of the informition across the botton of the card．imea additional fafomation is heloiul，thle is grinted on the card oither in lialics，or is undarscored．The spobols，weh as＂Ed＂for＂Eiead＂，aro printed on the card rather then the number of the josition on the card wich reprasents that cheracteristic．

The folloving panch cards are described in gore detail on the pages that follow．
 that is，each parson oringratod on the line anked＂Suppl．Guast．＂of the Popilation Schecule． Each card provices space for the ontry of laforeztion for 4 such perssas．

Card A．This card is prackod Yor each igdividual emperated on the Forulan tion Schodule．

Card 3．TMis card is panchod for anch indivicual inciuned in the 5y spmple， that 1s，each porson on：aerated on the lize＝arkod＂Suppl．Quest．＂of the Fopula：1on Schodile．

Card C．TEle card la purchod for each woran， 25 years of ase or orer， included in the of sample．

Card D．This card is punchod for each household inclindec in the fr sonple．
 lation Schedule．

Card E．This card is prached for oach dvelli＝e unit onuarated on the Occupied Droliling Sceedule or the Jacant Dusliliac Schodule．

Card F．Thin card is prached for each household onciera：od on the Posulation Schedule．Informa：ion rcenrdirn the dvelling untt occupiod by the housenold is obta！aed from the Occupled Dwolling Schedule．

Card 0 ．Fins card is manched for each mortgnfice ouncr－occupled nonfara property eamaratal on tho Occupled Ivelliag Schodulo．




 as a separate operation．
 was onurarated．

Colunnile Tra resideres．Thatior living on a fare．

 quesi－households（ $(V$ position）；insates of listitutizis and othar maibers of quasi－households．
colvertis．Sex．

 109 or more．
 marided，spouse not enuserated as a parter of the housohold．

Colum 18．Hes this person attended sehool since Harch he 19407 Yes or Ho．
Golums 19 and 20．Hi thest arade of school gucepssfilly comploted single fradee from the first through four years of colleet，five juara of eollaco or more．

Colurns 21 and 32 ．Birinolaces state or country of bleth．
Colum 23．citizenshis of eherorolan－tome xathrallized，ileat papars，allen，unkroms．




Porsens in the labor forces
At-work
Encaged in ammenng mork
Seekiss mork

Persone not in the labor foren
Housemives
Stucanes
Drable to mork
Hot in the Labar force for other receane
Incates of specifiod iastitutiona
Uaknown. work status

 -aplojemt.

Colurns S1-36. Oceupation, industry, and class of workor. The major oceupational sroop; the spoclelo occupation;



Columa 57 and sio The meber of full-tize moke worked eurink 1939.
Columes 30-42. The mount of wepe or allart rocaltod turane 1939.
 Yoa or Yo.




Decumber 18, 1940
e2gor

A Cand 3, like the one shown belor, is panched for cach frivicual included ia the fivo percent sapple, that is, each person ermarated on a 1100 narkod "Suppl. Gucst."


The iteas presented in the various colums of Card 3, and the categories included for each iean, are indieated below.
Colums 1-s. Gang pireh. Desigrates State, cau-t7, zercpolitan region, city size, city or afnor civil civisien,
 us a seperate operation.

Colung 7 agd 8 , Sheet re: was emurarated.

Colums 11 and 12. Parents' binthelace. For a rativo-born person, ona of ahose parents mas born aserad, the


Colums 15 and 14. Yother tonge. The languge spoken in the personts hese during his chilldraod.
Coluni 25 . Feteran. Vaterans, and wives, midows, and uader 18 -year-old children of viterans classifled tr the mar or serfice in which the reteran pa-ticipaced, as Solloxa:

```
Morld Xar
Child of deceased forld \(\bar{n} 2 r\) reteran
Sparish and rorld mar
Spandsh-donericar ïar
Regular establi=tzont (peace-tion eorvice onjr)
Other war or sartice
Mar or seivice untrom.
```

Colum 15. Social Socurity. Part of mages and salary from mich deductions were eade for 01d hge Insurgice or Rallroad rethrommt durane l939:

## Mo Social Seaurity mecount <br> Deductione sroa all wares or salars <br> Doductions from one-half or more of nages or salarf <br> Dectuctions froa less than one-half of wares or salary <br> Has soclal socurity accoust but no deductions <br> Ras Social Security account but amunt of tuductions undenown <br> llas Soctal Securaty account, unirom wisther deductions mata.



 worker, or untenom.

Colum 23. Temury. Hose amed or rented.
Colurn 24. Valie or ronthly pent. If the hoso is rented, the rental in snown as: Urifer 85, is-f9, 810-514,
 Under $\$ 300,8500-5799, \$ 1000-1499$, te.

Colurn 28. Color and natiotit. Mative mite, both parants native; native mate, both parents forelca; aative

 Sallomes

Correspandins

| Gand . colum | Itas | Correspandins cand colvin |
| :---: | :---: | :---: |
| 27-20 |  | 25-16 |
| 2 | Varltal atatua | 17 |
| $50-32$ | HLetest grade of school succesafulir completed | 29-20 |
| 32 | Citizenship of the forelernborn ..................................... | 25 |
| 33 | Work atatua durlas the meek of yareh 24-30 ...................... | 23 |
| 54 |  | 29-30 |
| 35-10 | Oecupation, incustry, ard clasa of worker | 31-36 |
| 41 | The number of full-tion meeka mosiced during 1339 (cJcod)..... | 57-33 |
| 42-45 | The emount of wagen or aulary received during 1939 ............. | 39-40 |
| 4 | Other incose | 43 |
| 45 | gelationkip to the head of the boushhold ......................... | 12 |

## Decwerer 28, 2940

ergol

A Card C, ilke the one ahom below, is puncted for each woan 15 ;ears of ace and over enurarated on a ling andict
 the Fertility Transcription Sheet prepred Sraz the Pcpulation Echecule.

below.
The itean preseated in colums l-20 are sehandeally reprotuced rrsa the various coluzis of card 3 as irdicated
Cand coly=n
$1-6$
$7-8$
9
10
11
$12-13$
$14-15$
18
$17-18$
$19-20$
45 (part)

Iten

## Beproduced 5 ros Cand 3 col:7

Cang pinch Parental blrthplace $1-8$
$11-12$
25
26
25
$27-28$
$30-31$
45
$7-3$
$9-10$

The itens presented in columa 21-45 and the categories ineluded for each ites aro drdicated below. The itess are purebed from the Fertility Iranacription Sheet.

## 

 married sore than oree, tousbard present; aurried ungown tixes, busband fresent; and anrried, husbasd absent.

Colurns 23 and 23, The afe of the monan at first garfisie.
Colunn 21. Tlie nugter of children ever born to the roong.
Colum 25. ت̈other torgue. Enclish, Scandinavian, Franch, Girman, Polish, Yiedish, Southeast Slovak, Italian,
Spanfah, iussian, oclier.


felurns an and 29, Placo of blrih. Sase ascoluns 21-22 of Cnतt $A$.


## Colyn 34. Tiork gentus and coticition of thls wosans

Not in the labor force
Eeployed at hoes
Eeployed away frea homa:
Professional or seniprofessional
Clerk, salespoman, ete.
Grattamen, operative, etc.
Service worker, exeapt procective
Other occupation
On publice emergency work
Seeking work, with experlence
Sembirs mork, now warker.
The iteas prosented in columa $35-42$ rofer to the musband of the wran and correspond to the itens presented in verions coluras of Cand $A$, as followas



#### Abstract

35-36 180 ................................................................................. 25-18 57-38 Himest दride of school successfull cormplete............ 10-20 39 Mork status dusing the zeek of :earen 26-30 24-30 .................... Ocmpation, lodustry, and class of xas::er .......................... The muater of full-time meeks mortred durine 1939 (coded) The asount if maces or suing received duriag 1939 (coded)

Colven 44, Other incozes Thether the mesband, or if not the husband, whether soes othar areber of the household sweeived lacoce aeounting to $\$ 50$ or mare from socrees other than wares or saley is 1939. 


Docember 18, 1940

23901
 ＂Suppl．Guest．＂．Itens presented in columa $1-13^{\circ}$ ne piet of solumi 19 and 35 are ecenaricaliy refrociced fron the Card $B$
 fros the Population Schedule．


The items presented in coluns i－i3， 19 （fart），and 35 （part）are roprocuced froa the card 3 as indicaied belor．

| Cand D colutir | I：03 | Reprochued Card $3=01$ ： |
| :---: | :---: | :---: |
| 1－8 | Gane punch | 1－6 |
| 7 | Veterat ．． | 15 |
| 8 | Social jecaritis | 15 |
| 9 | Talue or conethy rent | 24 |
| 10 | Color and nativity ．．． | 28 |
| 21－12 | dco ．．．．．．．． | －7－3 |
| 13 |  | 33 |
| 14 | Oceupetion，indistry，ard class of rorker | 35 |
| 15－16 | Sheet nu－ber ．．．．．．．．．．． | 7－8 |
| 17－18 | Ifre number | $\bigcirc 10$ |
| 19 （part） | Tartial status | 29 |
| 35 （part） | Tยтй ．．．．．．．．．．． | 23 |


below．
Coluti 19 （nirt）．Persons 65 venrs of am vit orer．：fo persons； 1 ande and 1 femie； 1 rale and no feales；
1 female and no anles； 2 rales and no fceales； 2 ferales and no wales； 3 or nore persons recardiess of sex．

 colvoe\％；unkzom．

Coluars 21 and 22．Aso of the wife of the head of the household．

Colutn 24．：iumber of childrea untor 10 years of ara related to the head of the household．
Colurn 25．liunter of relatad yirule ililldren unkur lu yerarg of nea．

## Colum 26. Nustor of ehlluren 14-17 and whother in ire habor cocen

No children 14 to 17 jears of aso
One or sore entidren 14 to 25 , but no chilidren 16 to 27 : One or more in labor force Mone in labor force
Mo children 14 to 15, but are or more children 10 to 178 On or more in labor forte Hone in isbor force
Oo or more children 14 to 15 and one or more children 16 to 178 One or more 14 to 15 and one or ante 18 to 17 in labor force ane or eore 14 to 15 , but none 28 to 17 in iabor force Nom 14 to 15 , bue one or more 18 to 17 in labor farce Moes in labor foree.


 200-140, 250 or over.

## Colum 20. Class of morker composition of related morkery.

Mo woskers
1 or more wapt workerss
H mage morkera or all wace and aew workeras Hoad mass morker
Elead not a mese worker
Som ware morkers and some morkers other clace of marker Head wace warker
Head not a waso morker
Ho mase morkerss
1 or more emplopera, onn accoant workars, unpald faedif
workers, with or without new warkers or infonom moricers
dI aew workera ard/or undorn class of worker.
Colna 29. Teoks worked by related eamern.
No earners
Head eamer, 50 weeks or more:
Erert eamer 50 reeks or =ore
Som earners 50 weiks or more, ard soce under 50 or unknown
Head carrar, $36-49$ weoks:
Some earte fs 50 meks or zore, and some unde: 50 or unkerw
Every earaer less than 50 weiks or undrown
Head eamer, 24-35 weeks:
Somenmers 50 weeks or =art, and some under 50 or uabromen
Ivert earner leas than $S O$ weeks or unkrome
Head eaner, less than 24 mesiks of undentis
Sooe emaners 50 mecks or :ore, and sose under 50 or undrown Frery earaer lasa tian 50 weeks or unimown
Head not enrmar, but so:m other eamers in the famply
Erery eamer 50 meeks of $=2 r e$
Some earmers 50 woeks or 325 , and som uncer 50 or unjenown
Every iamer less than 50 woiks or uncecwa.
Columa 30 and 31. Teres of flrgt earrer. The arount reported in hundreds of dollars of maga or salary received


Colums 52 and 33 . doount of moner weres or anlat resived by secend earner.
Colun 34. :lunber of rolated enfrers.
Colum 35 (EnTt). Relationship of eamers. No earners; head earner, wife not an eancer; vife earner, head not as earmer; nead and fife both eamers; neitrer nead nor ndfe earner.
 incore of $\$ 50$ or pore $\delta$ rom sources other hinan wagos or salary.

Colum 57. Lodpers and sub-ramilies (a married couple with or atthout ehildren not ineluding the head of the household).

Mo loderes:
No rub-sanliles
1 sub-\{arlly:
Facher as sub-head
Son as sub-road
Othor rulative as دut-head
2 or sore sub-faillias

Colㄹn 37. Ledpars sed sub-rnaliles (cont.).
2 or morv loderers:
llo mb-radiles
2 aub-fandys
Facher or son as rub-head
other relative as mub-haed
Lodaer as sub-hesed
2 or more sub-iandliesi
1 related sub-head
2 or mor releted sub-heads
111 Lodger sub-heads

## Colun 38. Kiubar of rolated perpons.

## Colven 39. Hizebor of rolatod morkers.

Colun 40. Rutar of relatod moriarz at work or with a jot durisg the mook of jarch 2t-30.
Colvan 41. liunber of rehated morkers on eseremer mork.
Coluna 42. Rutor of ralated morkers seokdng morks
 in tundrode of dollars.

Colun 4S. Fart rasicerce and sox. Same as coluan 25 on Card B.

## Denaber 18, 2940

reper

## PRICH CIPD E Houndug-Gzolitic Card

A Cand E, lika sho one show below, is punchet for eceh of the drelling units enurerated men oceuplod-brelling Schedule and on the Vacant-Dwalling Schodule.


beloro.

 as a separste oper=tion.



Colu- 9. Drellizzunit number ュ1:クin zeruciure.
Colu- 10-11. Porilation line numer. Aeprejonte the lino number on the Population Setedile for the bead of the


Colum 12-13. Block nuqber. Shota aly for clties of 50,000 or more

Colig 15. Humer of xerzons in touscholi: 1 perzon, 2 persons, ete,to 10 peryons, 11 or $=0 r$ persons.
Colum 1h (uiper). Live an frara? Ior, Mo.
 Col:Ban 17. 'foge cenure or oceur ney at :us:

## c.acd

Hented
Vacant, for sile or runt, mintinery






 . reat plue utiluty costs) for noafore ranters in fil latervals.

Colun 24. Tre of structurer
2-fanlly derached
2raaly attachod
2-family side-by-side
2-Samlly other
8-ramily, no bualnean
4-ramliy, no busimes:
14 fanily, with busianas
50 razily, with or Eithout buaness
20-19 fanily, fith or without business
20-ravily or sore, with ar ithout busicese
Other drelliag place
Colum 25 (part). Origineliy brillt as:
Rosideatial stracture, saco nubber of dwelleng umits
Resideatial structurs, differezt nubber of dwelileg unlts
Moaresidential structure
Columa 25 (part). Frpor of other drollinz place. Hot uned.
Colum 28. Extarior gararial: Food, brick, atuceo, other.
Colum 27 (part). stineture in asod of anfor regatry Yes, Xo.

## Columa 27 (part). Ststo of segair and plubing esulazeat:

Yot rooding esjor ropals
Klth priveis dath, private flush tollet and runing weter
Tith primete Siah tellet 2ad rientrg water, so privato beth

Yo ruxisg nster is crallicg :mit
Yeedinz zalor repads

Hith private fluni collet and rining witer, no private bath

Eo runing water in diellieg unlt
Onborn asice resair or plu=binz
Colu= 28-29. Year orfoinally tullt: $1350-1340$ by sincle yeara; 1349 ar before.
Colvan 30. Nuaber of roossi 1 roce, 2 rooss, ete., to 10 rooss, 11 or sare roass.
Colum 31. Nater supply
Amplog vater in daelliog unit
Hard punp in dwelliac unit
poming water whehin 50 feet
Othor aupply uthen 50 reat
Io water supply within 50 foet

## Colum 32. Toilat facilitiear

Flush tollet in.gtructure, exclugive use
Mush tollet in strueture, shered
Fo flush toillet in stracture
Outside toilat or privy
Mo tollet or prity

Colum 54. Princip.1 1ishtinpo ulmontz Eloctricity, ges, kerosene or gisollae, other.
Coluzi 3S. Principtil refrircrution onulpernts dochaniesh, lee, otler, nooe.
Colum : S. Rndia In fwollin. rinit! Yes, No.
Colum 57. Hentlig oculpaents
Stana or hot antur systan

Plpeless warm ats fiunnce
Hunclag stovo
Olhar or nans

## Coling is. Helneipal fuol usod for heatings



## Colven 39. Principal rual used for cookdne:

Coel or cobe
Food
Des
Elootricl ty
Feroseat or gecollone
other of ane

Por Hoafara Reator:
Colvin 40-38. Fotal manthy cost of utilitise acd Snel. In dolinez and conte.
Colva 4. Is furaiture included in reaty Tes, Ho.
Yor Moafure Omers
Colvan 40-42. Felue of proparty. In $\$ 200$ intervals.
Colum 43. Nu=ber of drelling unis ineluiged in value.
Colun 44. Mortsage on emopertit Yos, Mo.
Por AIT Drollitar Doalto
Colva 45. Control panch. Code $x$ is puched as a cantrol of pametelne and tabulation.

23901


 the housobold, are pmehed from the housonold tramscription sheet mifeh is prepared froa the fopulatian Schedule.

 the various coliens oi Card $E$, as indicaied solon.

| Cone Col: 3 | Iter |  |
| :---: | :---: | :---: |
| 1-6 | Cang pumen | 1-6 |
| 7-9 | Estantod or rross rent (noriara only) | 21-23 |
| 8 | Kator supply (farz oriy) | \$1 |
| 9 | Tollet facisitice (fara onjo) | 32 |
| 10 | Trpe of structure | 24 |
| 11 (eart) | Strecture in need of eajor raseir? | 27 |
| 11 (part) |  | 27 |
| 12 | Hueber of roons | 30 |
| 23 | Hose tenure | 17 |
| 14-16 | Palue or reat | 28-20 |
| 17 (part) | Hive on a Sars? | 16 |
| 17 (part) | Persoas por roon | 16 |
| 18-13 | Sheet number | 7-8 |
| 20-21 | Populatioa line nutber | 10-12 |
| $22 \text { (part) }$ | Princtial 11 fihttis cquersent | 54 |
| 45 (part) | Puraiture Lacluted in rerit? (nonfsre rentars only) | 44 |
| 45 (part) | jortsi.jo on property: (amfnra omer only) | 44 |


 the bousahold transeription sheot for asch housenold.

## Colivert 22 (rart). Sex of hend of hnugehold,

8121?
Colum ne coice




## Colven 29, C1tizarghip of hand of housgholds

Native born
Foreign born, naturalized citizen
Foreion born, having slrat papers
Forelgh born, allen
Poreien borr, unknown eltisenship


## Sme house <br> Sace country, different bouse <br> outside save countyi <br> Rural-norrasm <br> Bincl-farm <br> Pural-sarm residence unknown <br> Vrtan, 2,500 to 10,000 <br> . Urtan, 10,00 to 25,000 <br> Drtan, 25,000 to 200,000 <br> UTHan, 200,000 or more <br> Bobronas


at rork in private incuaty or monecorceney covestreat mork
at work in public emercency work
Sockine wort
Not at wosk but mith a job
Home houstrork
In sehool
Ureble to work
Other
Vaderoves
Colun 30. Cecspution zroip of hesd of households
Professional or seei-professional work
Parger or faz =arater
Prepritetor, faiager, or official, axcept fara
Geried, sales, or tinced morixar
Graftsen, forrest, or ki.ndred worker
Operative or ki:ariod worker
Dosestic sertice worker
Protective serfice worker
Sordiee worker, oxcept dezastic or protoctive
Farm laborer of forman
Leborer, except farx
Onfromn
Colurn 31-32. Pull-tise meeks worked charing 2939 by hasd of hoischold.

Ho lodseras
No mab-feiviea
1 sub-raxilys
Father or father-in-law as sub-head
Son or son-ln-law as anb-head
Other relative as anb-head
2 or core aub-fatilles
2 uen loderas
Mo sub-facilies
1 nbufacllys
Father, racuer-in-law, son or son-ln-1at as sub-head
Other relativo as sub-heed
Lodger as sub-head
2 or more sub-fanilles:
1 roletod sub-head
2 or eore related sub-heads
UH Iodsar aub-head:
Colum 34. ToLal parsons in hougohold. 1 porsen, 2 persons, etc., to 11 persons, 12 or rore persons.
Colwan 35. Ninber of related persons. 1 person, 2 persoms, te., to 24 persons, 22 or nore persona.


Colum 38. Number of related workers galoved in grivate or nonezergency goremeont woik. No woikerg, $\alpha$ worker, 2 workert, esce, so8 worker3, 9 or zore worreri.

Column 19. itmber of related morkers aplojed in ererfexer goworrient work. Mo workers, 1 worker, 2 morkers, ete., to morkers, 9 or s.ere workers.
 more workera.

Coluen 12. Class of morker. Compostion of rolatad workerte.

## Fo workers

2 or sere mege morkers:
11 wese wotkers of all mage and now morkers
Soe mase morkers and seen morkers of other class
No wace workersi
1 or mot erployerz, own eceount workers, or umpeld faelis wosters
11 nem moixers of class of morkers untions
 or over. Fnsented in JJJ iniarvals.




a491

## 








 15 a sefyrite ogera：ion．


 owner＇s i．caset：ol．1．


$$
\begin{aligned}
& \text { 1-6玉:İ detac:ei }
\end{aligned}
$$

> 2-Éaily ocr.er
> STavilf, no uusliess
> 4-farsif, no businces

Colu：n 11－1z．V11．i of proporty．In 1100 intervals．
Colu＝a 17．i．xiter of 1－ellin undts included in value．
 C：In．－7 ：1－35．Eirst ort．－2．e debr．In 100 incerrsis．
 no rotuer pa-cnts réadred.

Coluan 2s-at. Nroin: of eaci. : ortiarid 3ar.ant. In 'l incervals.
Colizs 29. Do parreats incline an z-ount for rediction of ert.eteal? Tes, lio.
Coluar 35. Do pa:renty leclace real estate eaxas? Yes, tho.
 =ore than $2 / 7.0$ F:02 0 to W?..
 stock and



Cand Coluen
34
$15-3$ ?
38 (part)
34 (part)
39
45
41
$42-48$
44
45

Itan
Color or race of head of nouseciold Sot1=ated sent
StrecAnte in need of :-ajor repair?
Stato ot repair anc plurbins equipent
thaber of roces
ocespation zroup of head of housci:old
Total sergons in housenold
Polatad persons' raze incou
holated persons' raje incoce
ielated parsons other irece:
Lodzers and suio-sa=11ies

Desetber 24, 194'

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 in the socond of the four sec:lons are fursied the lices relating to the seesod i-divisual enusirated on a line aried

 schedule.

 (Ofor coluris $23-35$, the colums in each of the four sections $2=$ lisiod in orfe..)

## Colugis 1 nat 2. State.

Solun 3. Ares. Turif, urban 2,500-93,999, each-eity of 100,000 or more seperatelf.
Colums 4-8. City-Euntic.
Colung 7-10. Enureration distriet mintor.
Coluns 11 and 12. Shect nu=ber.
Colums 13, 19, 25, and 31. Live on a famp Ies or No.
Colutas 14, 20, 25, and 32. Sax.
Colwn: 15, 21, 27, and 33. Color. inite, colorod.
Colurns 16-17, 22-23, 2b-23, 34-35. Aㄴ.
Colums $23,24,30,36$. تiork status.


Decesibar 20, 1940

## Appendix VI

## PROCRESS REPORT AND COSTS OF THE 1940 CENSUS

## Figure 1: Ceneral Progress Report of the 1940 Population and Housing Census by Major Process

Figure 2: Sixteenth Decennial Census 1940 through 1943

| 0.1 |  |
| ---: | ---: |
| 0.6 | 0.1 |
| 4.6 | 0.1 |
| 11.5 | 0.3 |
| 19.0 | 32.4 |
| 28.5 | 100.0 |
|  |  |
| 39.9 |  |
| 49.4 |  |
| 59.7 |  |
| 67.8 |  |
| 74.9 |  |
| 82.3 |  |
| 95.2 |  |
| 100.0 |  |

## Enumerator

evaluation, 25
selection, 22 ، $25,28-30$
training $5,20,26,28-30$

Household (continued)
relation-to-head of coding, 62-63, 70-72, 79 schedule item, 23, 35. 38, 40 tabulations, 84. 88. 92-93

Figure 1
GENERAL PROGRESS REPORT OF THE 1940 POPULATION AND HOUSING CENSUS BY MAJOR PROCESS
(Cumulative Percentage Completion)

| Month | ```Recelpt of Schedules``` | Matching of Housing and Population Schedules | Hand Count and Sample Transcrptn | Separation of Population and Housing Schedules | General <br> Population <br> Coding | ```Occupation and Industry Coding``` | Housing <br> Coding | Individual <br> Population <br> (A) Cards <br> Punched | Housing <br> (E) Cards <br> Punched | General <br> Sample <br> (S) Cards <br> Punched |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1940 |  |  |  |  |  |  |  |  |  |  |
| May | 3.2 |  |  |  |  |  |  |  |  |  |
| June | 48.7 | 6.2 | 3.9 | 0.3 |  |  |  |  |  |  |
| July | 89.6 | 20.8 | 18.8 | 3.9 | 1.3 | 0.6 | 0.6 | 0.1 | 0.1 |  |
| August | 99.3 | 57.1 | 53.2 | 18.8 | 9.7 | 3.2 | 6.5 | 0.5 | 0.6 | 0.1 |
| September | 100.0 | 81.8 | 77.9 | 35.1 | 18.8 | 7.8 | 18.2 | 3.4 | 4.6 | 0.1 |
| October |  | 99.4 | 98.7 | 72.7 | 27.9 | 18.8 | 27.2 | 8.7 | 11.5 | 0.3 |
| November |  | 100.0 | 100.0 | 100.0 | 41.6 | 28.6 | 38.9 | 13.7 | 19.0 | 32.4 |
| December |  |  |  |  | 59.1 | 40.9 | 62.9 | 19.6 | 28.5 | 100.0 |
| 1941 |  |  |  |  |  |  |  |  |  |  |
| January |  |  |  |  | 75.3 | 54.6 | 76.6 | 27.5 | 39.9 |  |
| February |  |  |  |  | 80.7 | 72.7 | 85.7 | 35.9 | 49.4 |  |
| March |  |  |  |  | 85.1 | 81.2 | 90.9 | 47.4 | 59.7 |  |
| April |  |  |  |  | 89.6 | 89.6 | 94.8 | 61.8 | 67.8 |  |
| May |  |  |  |  | 98.7 | 96.1 | 97.4 | 75.0 | 74.9 |  |
| June |  |  |  |  | 100.0 | 99.3 | 100.0 | 87.4 | 82.3 |  |
| July |  |  |  |  |  | 100.0 |  | 97.0 | 95.2 |  |
| August |  |  |  |  |  |  |  | 100.0 | 100.0 |  |

Figure 2
SIXTEENTH DECENNIAL CENSUS COSTS
1940 THROUGH 1943

| Project | Total | $\begin{aligned} & \text { Adminis } \\ & \text { tration } \\ & \hline \end{aligned}$ | Division Cost ${ }^{2}$ | Field | Geography | $\begin{aligned} & \text { Machine } \\ & \text { Tabulation } \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 16th Decennial Census total | \$48,671,533 | 3,627,209 | 14,541,270 | 20,448,620 | 1,427,441 | 8,626,993 |
| Population | 17,798,022 | 1,052,314 | 4,873,517 | 6,905,718 | 991,865 | 3,974,606 |
| Housing | 7,206,310 | 248,612 | 1,983,509 | 3,339,891 | 52,234 | 1,582,062 |
| Vital Statistics (Other) | 284,788 | 69,202 | 213,525 | 10 | -- | 2,052 |
| Marriage and Divorce | 165,307 | 19,144 | 70,523 | 48,205 | -- | 27,432 |
| Agriculture | 10,164,544 | 712,571 | 2,672,750 | 4,395,322 | 272,030 | 2,111,872 |
| Irrigation | 260,054 | 40,392 | 180,669 | -- | 17,824 | 21,168 |
| Drainage | 202,042 | 31,283 | 140,003 | 2,510 | 12,697 | 15,548 |
| Manufactures | 2,721,444 | 449,435 | 1,249,703 | 829,779 | 21,434 | 171,092 |
| Mineral Industries | 470,798 | 149,807 | 275,508 | 12,362 | -- | 33,119 |
| Business | 8,047,406 | 732,661 | 1,725,452 | 4,904,945 | 51,322 | 633,026 |
| Territories and |  |  |  |  |  |  |
| Possessions | 591,883 | 36,565 | 484,338 | 9,828 | 8,000 | 53,152 |
| Publicity | 173,177 | 85,223 | 86,064 | 50 | 35 | 1,805 |
| National Defense | 585,768 | -- | 585,709 | -- | -- | 59 |

[^4]Advisory Committee
asa census, 9, 15, 17
housing census, 23
to the secretary of labor, 3, 4
Age
allocation of missing entries, 61-63, 67-73
at first marriage of women, schedule item, 38
tabulations, 84
coding, 57, 63, 67-73
evaluation of item, 102-103
schedule item, 1, 23, 35
tabulations, 83-84, 87-89, 93-94
Agriculture
census of, 26, 39, 42
Department of,
Secretary of, 3-4
American Statistical Association (ASA), 2-4, 9
Area manager, 13, 24-27, 29-30, 34, 42-44

Bureau of the Census
director, 1-2, 5-7, 9, 14-15, 17, 19, 24-25, 27, 29-30, 37, 43
division of geograptry, 6-7. 11-14, 28, 47
division of machine tabulation, 6-7
division of public relations, 30
division of statistical research, 6-7, 9, 19
division of vital statistics, 58, 73
field division, 6-7, 11, 13, 24-26, 28, 41-43, 46-47
mechanical laboratory, 2, 7, 10
personnel division, 6-7
population division, 5-6, 8, 15, 17, 19, 46-47

Canvass of population and housing, 10-11, 21, 24-26, 30-34, 39-43
Census-Act, 1-2, 14, 29-30, 34
Census tract, 5, 11-12, 14, 83, 87, 89

Central Statistical Board (CSB),
4-5, 7, 15-16
Children ever born
schedule item, 5, 38
tabulations, 84, 92
Citizenship status
coding, 64, 67
schedule item, 5, 23, 35-36
tabulations, 81-82, 84, 87-89,
91, 93
Class of worker
coding, 75-78
evaluation of item, 98
schedule item, 36-37
tabulations, 87-89
Commerce and Labor, Department of, 2
Commerce, Department of, 12
Secretary of, 1, 3-4, 6, 14-15, 17-19
Committee on Covermment Statistics and Information Services
(COCSIS), 4-6
Compensation, rates of, 26, 29, 43-44, 68
Constitution, 1
District supervisor, 11-13, 24-31, 33-34, 39-44, 79

Education
coding, 64
schedule item, 5, 23, 35, 71-72
tabulations, 83-84, 86, 87-89, 93
Emergency work
coding, 77
evaluation of item, 96, 101
schedule items, 36-37
Enumeration
district (e.d.), 7, 11-13, 20-22, 25-29, 31-35, 37, 39-45, 47-49, 52-53, 55-56, 58-61, 65, 68, 74-75, 78, 83, 96, 98, 100
records, 40-43
supervision, 5, 25-26, 39-42
Enumeration procedures, 1-2, 5-6, 24, 31-45
evaluation of, 96-104

Enumerator
evaluation, 25
selection, 22, 25, 2.8-30
training, 5, 20, 26, 28-30
Farm
coding- 56, 62, 64-66, 76-77
schedule item, 22, 35, 37, 39, 79
tabulasions, 42-43, 81, 83-84, 87-89 94
Fertility
schedule item, 5, 20, 23, 38
tabulations, 84, 92
Field inspector, 22
Flophouse, enumeration of, 31-32
Foreign language during childhood coding, 66
evaluation of item, 102
schedule item, 20, 23, 38
tabulations, 93
Ceography
coding, 62, 64-66
evaluation or iterns, 102-104
scheoule ixem, 71-72, 78-79
schedule iterns, 20,.23, 35-36, 38-39
tábulat īñ, 87-89
tabulations, 81. 83-84, 87-89, 91-94
Grade completed
coding , 64 69, 71-72
schedule item 2335
tabulations, 87-88.
Hand count, 42-45 48, 5.2-56, 58-59, 79
Home tenure
coding, 66
schedule ixem, 22, 35, 39, 79
tabulations, 88-89, 94
Hotels
coding, 63
enumeration of, 31 32, 35
Hours worked
coding, 65, 67
evaluation of iters, 10!
schedule item, 16, 36
tabulations, 88
Household, 10, 21-23, 31-35, 39-41, 44, 48-54, 56, 58, 63-64, 66., 75, 78-79, 84-85, 97, 100

Household (continued)
relation-to-head of
coding, 62-63, 70-72, 79
schedule item, 23, 35, 38, 40
tabulations, 84, 88, 92-93
tabulations, 84-85, 88-89
Household head, $21,33,35,39-40$, 51-54, 56, 62-63, 66, 73, 79, 84, 88-89, 94
Housing, census of, 1, 23, 24, 32-33, 38-39, 52, 54-56, 58-59, 78-79, 85-86, 87-90, 96

Income
coding, 62-63, 65, 67
confidential reporting form, 37 . 58, 62, 75
evaluation of item, 99-100
schedule item, 15-18, 23, 37. 62
tabulations, 81, 83, 85, 88, 93-94
Individual census form, 47-49, 59
Industry
coding, 75-78
evaluation of item, 98-99
schedule item, 20, 23, 36-38, 40
tabulations, 84, 87-88, 91-92
Infant card, 35, 40, 43, 47-48, 50-51, 53, 58, 73
Institution
coding, 63, 65-66
enumeration of, $12,31,35,37$, 51
evaluation of item, 97,100
tabulations, 84, 94
Interior, Department of, 2, 12
Secretary of, 2-4
Irrigation, census of, 26
Labor, Department of, Secretary
of, 3-4
Labor force
coding, 65, 67, 74-78
evaluation of items, 96-101, 103
schedule items, 1, 10, 15, 23, 36-38
tabulations, 83-86, 87-89, 91-94
Labor force and gainful worker
comparability of concepts, 16

## Maps

preparation, 12-13
used in enumeration, 11-13, 22, 25, 27-28, 31, 34, 41, 47-48, 52
Marital status
coding, 62-63, 67
schedule item, 23, 35, 70-71
tabulations, 81, 84, 88, 92-93
Metropolitan district, 11, 14, 84-85, 87-89
Migration
coding, 64-65
evaluation of item, 102-104
schedule item, 18, 20, 23, 71-72
tabulations, 84, 93
Multiple marriages of women
schedule item, 38
National Bureau of Economic
Research, 15, 17
Nativity
coding, 64, 66
schedule item 20, 23, 35-36, 38
tabulations, 83-84, 87, 89, 91, 93-94
Nuptiality
coding, 62-63,-67, 70
schedule item, 5, 20, 23, 35, 38, 70-71
tabulations, 81, 84, 88, 92-93
Occupation
coding, 74-78
evaluation of item, 98-99
industrial home workers, 78
peculiar for women and youth, 77, 99
schedule item, 1, 16, 20, 23, 36, 38, 40
tabulations, 5, 84, 87-89, 91-93
Occupational designation, 75-76
Place of birth
coding, 64, 66
schedule item, $23,35,38$
tabulations, 83-84, 87, 89, 94
Plan of division, 11-13, 25
Portfolio 28, 42, 46-48 50-63, 65, 67-69, 72, 75, 78-82,

Preliminary population announcements, 30, 42-43
Production records, 46-47. 59-61, 74, 80-81
Public relations, 17-18, 30, 99
Publications, 11, 13-14, 83-84, 87-95, 97-98, 101-103
Punch cards
procedures, 7, 10-11, 23, 58-59, 74, 80-85
types, 80
verification, 73-75, 80-82
Race
coding, 56, 63, 66
evaluation of trem, 103-104
schedule item, 23, 35, 39, 79
tabulations, $81,83=84,87-89$, 91-92
Rent
coding, 66
evaluation of item, 99
schedule item, 17, 22, 35, 37, 39-40, 79
tabulations, 88-89, 93-94
Residence, 1
coding, 11, 62, 64-66
evaluation of item, 102
place of, 27, 31-33, 35, 44, 64
schedule item, 13, 22-23, 36, 39, 71-72, 79
tabulations, 81, 83-84, 87-88
Rural areas
coding, 64
enumeration of, 11-13, 27, 40-41, 97, 102, 104
tabulations, 83, 87-89, 91, 94
Sample
tabulations, 19-20, 83-84, 86, 92-93, 100, 103
transcription, 54-59
verification, 73-75, 78-81
Sampling
bias, 10, 21
design, 1:9-22, 38, 53
introduction of, 1, 10, 15, 19-20
Schedules
absent household, 13, 47-48, 50, 59
ag riculture, $1,28,37,43-44$

Scheriuies（continued）
design of ，14－10，19－22
evaluation of
examination of roriipleted $4 C 42$
100sing， 32 ，38－39， 45－48，5\％－52，5．8－6，78， 85
nonresident，む゙，3\％，猪 47－4 $3 i, 5 y$
occupied xueiling 70 iVnti 50－54，5f， 5 y 80
populatien， $1,3,12$ ， 7 上， 17－5： $8.428,37-14$ 46－54， $17-72$ 7\％，79． 82－83， 45
e：alua：：－：of，97， 192
preiminary tousingi 32，40， ．${ }^{\text {U }} 59$
pieliminary population，it， 22，33，48－40，5\％
shipment of，7，26，28，A3－44
styles of，21－32
vacant dwelling，39，47－48 50－52，54－56，56，79
School attendance
coding， 64
schedule item，1，5，23，35， 71－ジ2
tabulasions，84，87－88
Sex
coding，56，63， 66
evaluation of ltem， 103
schedule item，23，35， 70
sabulations，83－84，87－89， 91－93 97
Social Science Research Council
（SSRC），3－4
Sccial security
eading， 66
evaluation of item， 103
schedule item， $20,23,38,40$
Special Centus（Indranal．22－23
Squad feader， 13 25，28，30－31 33，40－42

State Deparmerit oi，Secretary of， 2
Supisiementary line 1 ya 21 32－34，38，53－55，66， 76，78，82， 84

Tabulation，79－85
equipment，2，10－11，82－83
evaluation of， $96,100,103$
program，7，13－14，19 evaluation of，5－6，19－20
Transients，enumeration of， 32
Underenumeration，103－104
Unemployment
coding 67
evaluation of item，96－97 101
schedule item，15－16 36
tabulations，83，88， 93
Unemployment census（1937） 9－10
Urban areas
coding of 64
enumeration of，11－12， 2727 $34,40-41,102,104$
tabulations，87－89，91－92
Vacancies
instructions for，32，34， 39
tabulations， 92
Value of home
coding， 66
evaluation of item， 99
schedule tem，17，22，35， 7
tabulations，88－89， 93
Veteran status
coding， 66
schedule item，5，20，23， 38

## Weeks warked

coding，65， 67
evaluation of Item， 101
schedule item，16，23，3．7
tabulations，88， 92


[^0]:    [9] U.S. Department of Commerce, 26th Annual Report, p. 21; 27th Annual

[^1]:    [3] Henry S. Shryock, Jr., 'The Quality of the 1940 Census Data on Migration,' pp. 30-36, in Donald J. Bogue, Henry S. Shryock, Jr., and Siegfried A. Hoermann, eds., Scripps Foundation Studies in Population Distribution, Number 5, Subregional Migration in the United States, 1935-1940, Volume 1, Streams of Migration, Oxford, Ohio: Scripps Foundation, 1957.

[^2]:    [9] Leon E. Truesdell, 'The Mechanics of the Tabulation of the Population Census, ' Journal of the American Statistical Society 30(1935):89-94.

[^3]:    [18] U.S. Department of Commerce, 30th Annual Report of the Secretary of Commerce, June 30, 1941 (Washington, D.C.: Covernment Printing Office,
    1942), pp. 15-18.

[^4]:    $l_{\text {Administration, general }}$ research, and housekeeping functions including printing.
    ${ }^{2}$ Includes planning, editing, coding, analysis, and the writing of the report.
    SOURCE: Administrative Records, u.S. Bureau of the Census

