

THE 1970 CENSUS: DATA PRODUCTS AND DATA DELIVERY

Including:

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Data Products and Services

Census Use Programs and Materials

Data Delivery Facilities

This section describes 1970 census data products and services, user education tools needed to work with the data, and data delivery facilities for obtaining the data. Users should consult the appendices to the Users' Guide for detailed information on selected census data products and tools.

The Concept of the Data Delivery System

Whenever people who produce data are separate from the people who use that data, a rational system for the delivery of data is required. Whether the separation of users and producers is within or between organizations, certain problems invariably exist. Data must be transmitted in an understandable form, with minimum delay, and without excessive cost.

The roles of producer and user of data are actually interdependent. It is obvious that the user of data depends on the producer for data itself, for information about the data, for organization of the data in useful ways, and for techniques of access to the data base. But, it is also true that the producer depends on the user for identification of problems requiring data, specifications of data application, recommendations on delivery media and data organization, analyses which test the suitability of the data produced, and mobilization of support for production activities. Communication between producer and user is mandatory if they are to avoid preoccupation with existing types of data to the neglect of new data requirements.

Throughout the preceding decade, the Bureau of the Census built upon its experience with the 1960 and earlier censuses to develop a more satisfactory data delivery system for the 1970 Census of Population and Housing. Communication on data requirements occurred through extensive contact with data users in other Federal agencies, meetings with advisory committees composed of interested data users outside the Government, and conferences with local data users held in various parts of the country during 1966.

The remainder of the Users' Guide text describes elements of the 1970 data delivery system as developed thus far. Text sections include descriptions of data products and services (the data, media for delivery, and geographic tools); user education materials (sources for information on the meaning of data concepts, the Bureau's data resources, data access techniques, etc.); and data delivery facilities (facilities within and outside the Bureau for users to obtain data and related information, put the information to work, and transmit feedback back to the producer). There is also a section on Uses of Census Data (suggestions and examples of fruitful ways to apply census information in users' decision systems). Appendices to the Users' Guide describe in detail particular 1970 census data products and services. User education tools, such as the Census Users' Dictionary, are included as appendices.

Data Products and Services

The 1970 Census of Population and Housing is the source of a flexible data base from which a variety of data products and services may be obtained. As in the past, standard or general tabulations are produced by the Bureau with the appropriations made by Congress for the decennial census operation. These tabulations are available to users at relatively low cost and in a variety of media, including printed reports, summary tapes, and microform.

In addition to these summary tabulations, samples of the basic data records for households containing no name or address identification will be made available as Public Use Samples without endangering the confidentiality of the respondent. These samples will allow users to determine their own tabulation categories and perform certain types of cross-tabulations at a low cost on a representative sample of the population.

If a user needs tabulations not available from regular data products, a special tabulation service will be available at user request and expense. In most cases, these tabulations will require a reprocessing from the basic record tapes with user-supplied tabulation specifications.

From the Bureau's point of view, the only fundamental restrictions on filling users' requests for 1970 census data are that no data may be furnished which violate legal requirements for protecting individual confidentiality or which the Bureau regards as unreliable or inaccurate. The Bureau reviews every general and special data product released to users to insure that these standards are met.

From the user's point of view, the question of access to census data is more complex. A number of considerations enter into a decision to obtain census data. Essentially the user must engage in cost-benefit analysis of his data needs and his resources (staff, budget, etc.) to determine whether and which census products will prove helpful.

Points to consider include:

Subject content. Does the 1970 census questionnaire contain inquiries on the subjects--income, housing condition, etc.--desired by the user? Are the data categories contained in general tabulations satisfactory or are special tabulations necessary to satisfy the user's subject content specifications?

Geographic detail. Similar considerations apply. Can the user satisfy his geographic detail needs either through areal units recognized in general tabulations or through units which can be defined on a special tabulation basis?

Media. Both general and special tabulations may be supplied in several media. Are books, printed tables, or other hard copy sufficient? Does the user require data in the form of computer tapes? Is microfilm created from tape preferable to printed volumes?

Timeliness. Is this a factor? Some kinds of data are available sooner than others.

Cost. The benefits of different census products cannot be fully determined without considering cost. General tabulations in printed reports or microfilm are inexpensive, but may not precisely satisfy the user's subject content and geographic detail needs. General tabulations on summary tapes cost more but are computer-manipulable. Special tabulations are relatively costly but may be the only means of obtaining the precise subject and areal detail desired.

Costs and benefits of census products should also be balanced against the possibilities of obtaining similar data from other sources, for instance, local records or user-sponsored sample surveys. One big advantage of census data is that the costs of collection are absorbed by the general public revenues. In the case of general tabulations, processing costs are absorbed too.

The following sections describe the data products and services available from the 1970 census data base, including general information about subject content, geographic coverage, media, timing, and cost. Information about 1960 census products is also provided for purposes of comparison and for the benefit of users interested in working with 1960 data. Advantages and disadvantages of census products are suggested.

Users are urged to consult the references and appendices for detailed information about the 1970 census data base to aid them in arriving at census data access and use decisions.

General Tabulations and Services

General tabulations are data summaries produced by the Census Bureau with decennial census funds and made available to users at nominal cost (essentially covering the expense of

reproduction). The geographic and subject content of general tabulations are determined by the Bureau's professional staff consulting with interested Federal agencies and other users through the Bureau's advisory committee review system. General tabulations from the 1970 census are available in several media as indicated below.

Printed reports

As in every previous census, printed reports are a basic product of the 1970 census. They constitute one end result of the decennial census collection and processing operation financed by appropriated funds. Print reels containing the desired tabulations organized into tables with box and stub headings are created from census summary tapes and, by electronic means, are used to produce the printed reports. The result is an inexpensive, widely available data product.

The 1960 Printed Publications Program involved the production of successive waves of reports to facilitate timeliness of the data. The publication program included preliminary reports containing unofficial counts sent in by census field offices; advance reports containing selected final figures; final paperbound reports; and, for some sources of reports, clothbound volumes containing groups of final reports. The quantity of statistics published for the 1960 census was greater than that of earlier censuses. There were a total of approximately 138,000 pages of 1960 census reports. The costs were nominal, averaging one or two dollars per individual report, and not exceeding seven dollars.

The 1970 Printed Publications Program is now in essentially final form. As in the past, there will be a series of preliminary and advance reports for the population and housing censuses designed to convey quickly in printed form a limited collection of key data for numerous geographic areas.

The 1970 final reports will contain about the same number of data items for each geographic area as in 1960. The total number of pages will be larger as a result of an increase in the number of areas for which data are to be shown--more SMSA's, tracts, blocks, cities of 50,000 population or more, places of 1,000 population or more, increases in population size of many areas resulting in more data being shown, and more places qualifying for publication of separate data for Negroes. Costs of these reports will remain nominal. Following is a schedule of issue dates for the 1970 census reports.

1970 Population Census Reports

Preliminary

Three series are being issued based on preliminary population counts as compiled in the census field offices. These figures will be superseded by those in the advance and final reports.

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| Series PC(P1)
To be issued:
June-Sept. 1970 | <u>Preliminary Population Counts for Counties and Places.</u> One report for each State, District of Columbia, Puerto Rico, and other outlying areas, showing preliminary counts for counties and for each incorporated place of 1,000 or more inhabitants. The series includes a U.S. summary report. |
| Series PC(P2)
To be issued:
June-Sept. 1970 | <u>Preliminary Population Counts for Standard Metropolitan Statistical Areas.</u> One report for each SMSA showing preliminary counts for component parts of the SMSA. |
| Series PC(P3)
To be issued:
July-Oct. 1970 | <u>Preliminary Population Counts for Specified Areas.</u> Several reports summarizing the preliminary counts for all cities of certain sizes, congressional districts, etc. |

Advance

Two series will be issued presenting selected data prior to their publication in final reports. Each series will have a report for each State and the District of Columbia, as well as a U.S. summary report.

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| Series PC(VI)
To be issued:
Aug.-Dec. 1970 | <u>Final Population Counts.</u> Official population counts will be presented for the State, counties, minor civil divisions, all incorporated places, and unincorporated places of 1,000 or more inhabitants. |
| Series PC(V2)
To be issued:
Sept.-Dec. 1970 | <u>General Population Characteristics.</u> Selected data on age, sex, race, and relationship to head of household, will be shown for the State, SMSA's, counties, and places of 10,000 or more inhabitants. |

Final

Volume I, Characteristics of the Population. This volume will consist of 58 "parts" - number 1 for the United States, number 2 through 52 for the 50 States and the District of Columbia in alphabetical order, and numbers 53 through 58 for Puerto Rico, Guam, Virgin Islands, American Samoa, Canal Zone, and Trust Territory of the Pacific, respectively. Each part, which will be a separate clothbound book, will contain four chapters designated as A, B, C, and D. Each chapter (for each of the 58 areas) will first be issued as an individual paperbound report in four series designated as PC(1)-A, B, C, and D, respectively. The 58 PC(1)-A reports will be specially assembled and issued in a clothbound book, designated as Part A.

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| Series PC(1)-A
To be issued:
Sept. 1970-
Apr. 1971 | <u>Number of inhabitants.</u> Final official population counts are presented for States, counties by urban and rural residence, standard metropolitan statistical areas (SMSA's), urbanized areas, county subdivisions, all incorporated places, and unincorporated places of 1,000 inhabitants or more. |
| Series PC(1)-B
To be issued:
Oct. 1970-
May 1971 | <u>General Population Characteristics.</u> Statistics on age, sex, race, marital status, and relationship to head of household will be presented for States, counties by urban and rural residence, SMSA's, urbanized areas, county subdivisions, and places of 1,000 inhabitants or more. |

Series PC(1)-C
To be issued:
Feb.-Nov. 1971

General Social and Economic Characteristics. Statistics will be presented on nativity and parentage, State or country of birth, Spanish origin, mother tongue, residence 5 years ago, year moved into present house, school enrollment (public or private), years of school completed, vocational training, number of children ever born, family composition, disability, veteran status, place of work, means of transportation to work, occupation group, industry group, class of worker, and income (by type) in 1969 of families and individuals. Each subject will be shown for some or all of the following areas: States, counties (by urban, rural-nonfarm, and rural-farm residence), SMSA's, urbanized areas, and places of 2,500 inhabitants or more.

Series PC(1)-D
To be issued:
Apr. 1971-
Feb. 1972

Detailed Characteristics. These reports will cover most of the subjects shown in Series PC(1)-C, above, presenting the data in considerable detail and cross-classified by age, race, and other characteristics. Each subject will be shown for some or all of the following areas: States (by urban, rural-nonfarm, and rural-farm residence), SMSA's, and large cities.

Series PC(2)
To be issued:
1972

Volume II. Subject Reports. Each report in this volume, will concentrate on a particular subject. Detailed information and cross-relationships will generally be provided on a national and regional level; in some reports, data for States or SMSA's will also be shown. Among the characteristics to be covered are national origin and race, fertility, families, marital status, migration, education, unemployment, occupation, industry, and income.

1970 Housing Census Reports

Preliminary

Series HC(P1)
To be issued:
June-Sept. 1970

Preliminary Housing Unit Counts for Places. One report for each State, District of Columbia, Puerto Rico, and other outlying areas showing the counts of housing units compiled in the census field offices. Figures will be shown for the State and places of 10,000 or more inhabitants.

Advance

Series HC(VI)
To be issued:
Sept.-Dec. 1970

General Housing Characteristics. One report for each State and the District of Columbia, as well as a U.S. summary report, presenting selected data prior to their publication in final reports HC(1)-A (described below) for the State, SMSA's, counties, and places of 10,000 or more inhabitants.

Final

Volume I. Characteristics for States, Cities, and Counties. This volume will consist of separate reports for the United States, each of the 50 States, the District of Columbia, Puerto Rico, Guam, Virgin Islands, American Samoa, Canal Zone, and the Trust Territory of the Pacific. For each of these 58 areas, the data will first be issued in two separate paper-bound chapters designated as A and B. The two chapters will then be assembled and issued in a hard-cover "part." These parts will mostly be issued in the fall of 1971. (For the outlying areas other than Puerto Rico, all the housing data will be included in chapter A.)

Series HC(1)-A
To be issued:
Oct. 1970-
May 1971

General Characteristics for States, Cities, and Counties. Statistics on kitchen facilities, plumbing facilities, number of rooms, persons per room, units in structure, mobile home, telephone, value, contract rent, and vacant status will be presented for States (by urban and rural residence), SMSA's, urbanized areas, places of 1,000 inhabitants or more, and counties.

- Series HC(1)-B
To be issued:
Feb.-Nov. 1971
- Detailed Characteristics for States, Cities, and Counties. Statistics will be presented on a more detailed basis for the subjects included in the Series HC(1)-A reports, as well as on such additional subjects as year moved into unit, year structure built, basement, heating equipment, fuels, air conditioning, water and sewage, appliances, gross rent, and ownership of second home. Each subject will be shown for some or all of the following areas: States (by urban, rural-nonfarm, and rural-farm residence), SMSA's, urbanized areas, places of 2,500 inhabitants or more, and counties.
- Series HC(2)
To be issued:
Apr. 1971-
Feb. 1972
- Volume II. Metropolitan Housing Characteristics. These reports, will cover most of the 1970 census housing subjects in considerable detail and cross-classification. There will be one report for each SMSA, presenting data for the SMSA and its component large cities, as well as a national summary report.
- Series HC(3)
To be issued:
Jan.-July 1971
- Volume III. Block Statistics. One report, will be issued for each urbanized area showing data for individual blocks on selected housing and population subjects. The series will also include reports for the communities outside urbanized areas which have contracted with the Census Bureau to provide block statistics from the 1970 census.
- Series HC(4)
To be issued:
1972
- Volume IV. Components of Inventory Change. This volume will contain data on the disposition of the 1960 inventory and the source of the 1970 inventory, such as new construction, conversion, mergers, demolitions, and other additions and losses. Cross-tabulations of 1970 and 1960 characteristics for units that have not changed and characteristics of the present and previous residence of recent movers will also be provided. Statistics will be shown for 15 selected SMSA's and for the United States.
- Series HC(5)
To be issued:
1972
- Volume V. Residential Finance. This volume will present data regarding the financing of privately owned nonfarm residential properties. Statistics will be shown on amount of outstanding debt, manner of acquisition of property, homeowner expenses, and other owner, property, and mortgage characteristics for the United States and regions.
- Series HC(6)
To be issued:
1972
- Volume VI. Estimates of "Substandard" Housing. This volume will present data on "substandard" housing units for counties and cities, based on the number of units lacking plumbing facilities combined with estimates of units with all plumbing facilities but in "dilapidated" condition.
- 1970 Population-Housing Census Joint Report**
- Series PHC(1)
To be issued:
Mar.-Oct. 1971
- Census Tract Reports. This series will contain one report for each SMSA, showing data for most of the population and housing subjects included in the 1970 census.

Advantages of printed reports. Printed reports offer two main advantages: low cost and easy accessibility. As they become available, they may be purchased from the Superintendent of Documents or Department of Commerce field offices. Also, the printed volumes are distributed free on request to over a thousand Government Depository and Census Depository Libraries around the country where they are available for use.

Disadvantages of printed reports. Subject content in printed reports does not include the

full range of information tabulated in the census, primarily to keep report size and printing costs down to manageable levels. Geographic detail is similarly restricted. (See the appendix titled "Comparison of Printed Reports and Summary Tapes.") The general rule is "the smaller the area, the fewer tabulations printed." To some extent this is due to the need to protect confidentiality and preserve reliability--tabulations based on sample data are more reliable where the number of cases is greater. Also, printed tabulations cannot be readily manipulated by a computer. Users must code and punch the figures on cards to allow computer manipulation.

Summary tapes

In 1960, summary computer tapes containing tallies (totals) of characteristics for geographic areas were created from census basic record tapes in order to generate print reels for producing the printed reports. The tapes were primarily a production component and were made available to users only after a demand for them became apparent. However, the Bureau's 1960 processing and tabulation budget did not allow the Bureau to produce master user-oriented versions of these tape files. Instead, the files were recorded in a combination of binary, binary coded/decimal, and excess three tapes. Therefore, most users have had to ask the Bureau to convert these tape versions to some other format. The Bureau produces such tape copies on a reimbursable basis.

Available 1960 census summary tapes include: Tapes containing chapters A and B (complete-count) population data plus housing characteristics for enumeration districts and minor civil divisions; chapter C population data for larger areas (urban places, remainders of urbanized areas, rural farm and rural nonfarm portions of counties); chapter D (cross-tabulated sample) population data for larger areas (cities of 100,000 or more, remainders of large counties and large SMSA's, remainders of States); PHC(1) sample population data plus housing characteristics for census tracts; volume II population data for States in some cases and regions in others; volume I housing data for enumeration districts; complete-count housing data for city blocks; volume II (Metropolitan Housing) and volume VI (Rural Housing).

The chief advantage of 1960 census summary tapes in addition to being computer manipulable was the presentation of tabulations for small geographic areas, specifically enumeration districts.

In 1970, summary tapes are again playing an intermediate role in the data publication process. They constitute, in and of themselves, components of the general tabulation program supported by appropriated funds. Chart A on page 40 summarizes available 1970 census summary tape products. The tapes are being released in several series, generally on a State-by-State basis within each series:

First Count Summary Tapes are the first series of tapes available to the public. These tapes will contain about 400 cells of final complete-count population and housing data, summarized in file A for enumeration districts (in conventional enumeration areas)

or blockgroups (in portions of mail census areas having Address Coding Guides), and in file B for States, counties, minor civil divisions or census county divisions, places, and congressional districts.

The subjects tabulated include age, sex, color, marital status, relationship to head of household, tenure of occupied housing units, vacancy status, units in structure, rooms, plumbing facilities, basement, telephone, value and contract rent. Many tabulations are cross-classified by color. (See appendix TD series for complete tabulation description.) First Count file A will be contained on about 120 reels of tape for the Nation; file B on about 62 reels. The files will be issued by States; the reels for the first State processed becoming available by the fall of 1970 and the last State by the end of 1970.

This production schedule represents a considerable improvement over 1960. Moreover, the First Count summary tapes contain substantially more data than printed or available on tape in 1960 or to be printed in 1970. No data summaries for enumeration districts or blockgroups will be printed. They are available only on tape or microfilm. Summaries for other areas will be more extensive on tape than in the printed reports.

Second Count Summary Tapes, the next tape product from the 1970 census, have two file subdivisions. The Second Count file A will contain about 3,500 cells of complete-count population and housing data summarized for each census tract; file B will contain the same amount of items of complete-count population and housing data as in file A, summarized for States, counties, minor civil divisions or census county divisions, places, and SMSA's. Data for urban and rural parts of States, counties, and SMSA's will also be available in file B. Second Count tapes contain the same subjects as the First Count tapes but in much greater detail. (See appendices in the TD series.) Second Count file A will consist of 112 reels of tape for the Nation; file B about 167 reels. The tapes will be issued by States from October 1970 to April 1971.

Third Count Summary Tapes, containing 250 cells of complete-count population and housing data for each city block in urbanized areas and other areas which have contracted for block statistics, will become available from January to July 1971. The delay in issuing block tapes is due to the necessity of checking block codes very carefully. Blockgroup totals

derived from the block tapes may not equal totals on the First Count tapes. First Count tapes are issued as soon as possible and are not subject to such precise geographic verification. The block tape file will be contained on about 266 reels for the Nation. Note that these tapes contain fewer data items than carried on the tapes for larger areas, but considerably more, particularly population characteristics, than available in 1960 or to be printed in 1970. (See appendix in the TD series for complete tabulation description.)

Fourth Count Summary Tapes contain 20, 15, and 5 percent sample population and housing characteristics such as education, occupation, income, citizenship, vocational training, and household equipment and facilities. This count is organized into three file subdivisions. Fourth Count file A contains sample data for census tracts (sample data summaries will not be available for areas smaller than census tracts); file B contains minor civil division or census county division sample summaries; and file C includes summaries for State, counties, SMSA's, and places. Both files A and B and places in file C will have 13,000 data cells summarized for each census geographic area. File C, excluding places, will contain some 30,000 data cells for each area. These tapes will be issued by States from January through October 1971. Fourth Count summaries will be contained on about 1,000 reels of tape for the Nation. (Complete tabulation descriptions for the Fourth Count and subsequent counts will be available from the Census at a later date.)

Fifth Count Summary Tapes will contain population and housing sample data summaries for ZIP Code areas. The allocation of data to these areas will be accomplished as accurately as possible by prorating enumeration district sample counts to one or more corresponding ZIP Code areas. Approximately 800 data cells will be tabulated for each ZIP Code area. Data will be shown at the 5-digit ZIP level for ZIP areas entirely within SMSA boundaries. Data will be shown at the 3-digit ZIP level for the entire United States. It is expected that one reel of tape will contain summaries for 3-digit areas for the Nation, and 12 reels will contain summaries for 5-digit areas. No census data summaries for Zip Code areas will be printed. The Fifth Count tapes will become available in July 1971.

Sixth Count Summary Tapes will provide detailed tabulations and crossclassifications of sample population and housing character-

istics for States, SMSA's (metropolitan counties), nonmetropolitan counties of 50,000, and larger cities. The subject content of these tapes has not yet been fully determined, but will represent considerably more data than available in the preceding counts. The Sixth Count will be divided into a population data subfile and a housing data subfile. For the Nation, the population subfile will include an estimated total of 184 tape reels and the housing subfile about 131 reels. Tapes will be available from March through November 1971.

Since summary tapes must be created by the Bureau in order to process the census, they can be made available to users at relatively low cost. The price for 1970 census summary tapes will probably be about \$60 per reel. This amount covers the cost of the tape, copying the data onto the tape, technical documentation and handling charges.

Technical Documentation.--Summary tapes by themselves are merely strings of numbers unintelligible to users without translation devices. With every tape file distributed to users, the Bureau supplies a copy of the appropriate printed technical documentation (the TD-Series appendices to the Users' Guide), which describes the content of that particular tape file. It shows, for example, that a particular position or "cell" in a data record for each enumeration area contains the number of male household heads who are over 65 years of age, while another "cell" contains the number of unmarried females 25-34 years old. (See section on Census Use Program and Materials.)

Geographic Identification.--Distinguishing among the many different areas for which data are presented on a summary tape reel requires a geographic identification tool called the Master Enumeration District List (MEDList). It enables a data user to interpret the geographic codes which are part of each data record, and thereby tell what State, county, place, etc. is being described. The MEDList is an expanded version of the 1960 Geographic Identification Code Scheme. It will be available on a schedule paralleling the release of the First Count summary tapes by States. Users working with printed reports do not need the MEDList. However, users working with data on summary tapes or on microfilm created from tapes will need this identification device to interpret the geographic codes. (See section on Geographic Products.)

Display Programs.--The Census Bureau's Data Access and Use Laboratory has prepared

Chart A. Public Use Summary Computer Tape Files of the 1970 Population and Housing Censuses

Name of file	Cover- age (1)	Smallest geographic area			Approximate number of data cells for each geographic area (5)	Tentative timing (6)	File subdivisions (7)	Approximate reels for U.S. (IBM 7-channel 556 CPI 2/ (8)
		In file (2)	Average pop- ulation size (3)	Approximate number in U.S. (4)				
1st Count..	100%	Blockgroup/ ED	820	235,000 ED's and Blockgroups	400	Sep.-Dec. 1970	File A: BI or ED Summaries File B: State, County, MCD(CGD), MCD-Place, Place, Congressional District	125
2nd Count..	100%	Tract/ MCD(CGD)	Tract: 4,000 MCD's: 200- to one million+	Tracts 34,600 MCD's (CGD's) 35,000	3,500	Oct. 1970 to Apr. 1971	File A: Tract Summaries File B: State, County, MCD(CGD), Places, SMSA, and Component Areas	62 112 167
3rd Count..	100%	Block	90	1,500,000	250	Jan.-July 1971	Not applicable	266
4th Count..	20% 15% 5%	Tract/ MCD(CGD)	Tract: 4,000 MCD's: 200- to one million+	Tracts 34,600 MCD's (CGD's) 35,000	13,000 (File A & B, and Places) 30,000 File C (ex- cept Places)	Jan.-Oct. 1971	File A: Tract Summaries File B: MCD(CGD) Summaries File C: State, County, Places, SMSA, and Component Areas	pop. -162 hous.-214 pop. -176 hous.-236 pop. -104
5th Count..	20% 15% 5%	3- or 5- digit ZIP area	260,000 (3- digit areas) 10,000 (5- digit areas in SMSA's)	788 (3-digit areas) 12,500 ² (5- digit areas in SMSA's)	800	July 1971	File A: 3-digit ZIP area File B: 5-digit ZIP areas in SMSA's	hous.-102 1 12
6th Count..	20% 15% 5%	Pop.-Cities of 100,000+ Hous.-Cities of 50,000+	500,000	132(100,000+) 333 (50,000+)	Pop. 150,000 Hous. 110,000	Mar.-Oct. 1971	Pop.-Metr. Counties, Non-Metr. Counties 50,000+, Cities 100,000+, Central Cities, SMSA's. Hous.-State, Metr. Counties, Non-Metr. Counties 50,000+, Cities 50,000+, Central Cities, SMSA's.	pop. -184 hous.-131

¹Additional summary tape files will be developed subsequently.

²Summary tape files will also be available in 7- or 9-channel 800 CPI.

³Data will be tabulated for the population in 5-digit areas that fall within SMSA's. There is a total of 39,000 5-digit areas in the U.S.

LLIST, a computer program which reads a summary tape and displays data from specified words. The program displays the geographic identification as well as the population and living counts with descriptions corresponding to the Bureau's published technical documents.

(See section on Census Use Programs and Materials.)

Hardware Compatibility. Not all computers speak the same language." There are a number of sources of potential incompatibility between census Bureau tapes and computers of various kinds.

Generally, the computer tapes used in census processing are prepared for use on the Univac 1107 or 1108 computers. For 1970 census data, the Bureau's summary tapes created for internal use on Univac equipment are converted in a special operation to tapes for the IBM 360, which is compatible with the most common, but not universal, computer hardware.

Below are several areas in which incompatibility may be encountered:

1. Tape drives vary in the number of parallel channels of recorded information across the width of the tape. 1970 summary tapes are available with 7 or 9 channels or tracks. Other strictly physical properties of tapes may be a source of incompatibility. 1970 census tape is mounted on 10-1/2" IBM-style reels.

2. A number recorded on magnetic tape is represented by a series of "bits" (a bit being one magnetized or unmagnetized spot, usually represented by a "one" or a "zero" in written explanations.) The number may appear in true binary form or as a coded decimal character formed by a certain pattern of bits. Naturally the data tape and the computer it is used on must use the same system for coding characters. 1970 summary tapes are coded in binary coded decimal (BCD) on 7-track tapes, or in extended binary coded decimal interchange code (EBCDIC) or American standard code for information interchange (ASCII) on 9-track tapes.

3. Within any system for coding numeric and alphabetic characters there may still be some patterns unique to one or another computer which require a programmed conversion when reading in data.

4. The number of characters or groups of bits recorded on an inch of tape is referred to as tape density. Densities frequently used on commercial hardware are 200, 556, 800, or

1600 cpi (characters per inch). A particular computer tape drive is capable of reading only certain specified densities on magnetic tape. 1970 tapes will be available with 556 or 800 cpi on 7 channel tapes, 800 cpi only on 9 channel tapes. Because of the way the Bureau will be copying 1970 summary tapes, the number of tapes in a particular file is not affected by the choice of density.

5. Computers vary as to size of main storage. This affects the amount of data that can be read and stored at one time. Data obtained by one read operation from magnetic tape are called a block. If data blocks of a small size are used (e.g. small enough to be handled by a FORTRAN formatted "READ" statement) the spacing required between each block takes up more tape than the data itself. Therefore, to reduce the size and cost of summary tape files, the Bureau creates packed data blocks of a larger size, which may be divided by the user into sub-blocks where necessary.

6. For identification, most summary tapes contain header and trailer labels. 1970 census summary tapes contain standard labels for the IBM 360. Some other computers have difficulty with these labels, and a special operation may be required to bypass the labels or recopy the tapes without them. Technical documentation which accompanies each 1970 tape describes the labels further.

For further information on the points listed above, summary tape users should refer to the appendices, "Character Set for the 1970 Census Summary Tapes" and "Technical Conventions for 1970 Census Summary Tapes."

Advantages of summary tapes. The major advantages of using summary tapes are their early availability, their computer-readable and manipulable character, and their extensive subject matter content and geographic detail. Summary tapes are available somewhat earlier than the printed reports derived from them. This is an important consideration for users involved in programs depending on up-to-date census information for their local areas. The computer readable nature of the tapes also means that less time is lost between obtaining tabulations and having them in a form ready for rapid, extensive machine analysis.

The greater subject and geographic detail available on summary tapes will enable users to broaden their data analysis and application horizons beyond what can be accomplished with the printed reports. (See the appendix titled "Comparison of Printed Reports and Summary Tapes.") Even the limited amount of data on

the First Count tapes provides a city with an information resource for beginning an evaluation of the dimensions of its social problems and needs. Later as summary tapes containing sample-based information become available, this statistical profile of the city can become more detailed and more precise. (See section on Dimensions of Census Data Use.)

Disadvantages of summary tapes. The computer readable nature of the tapes constitutes a potential disadvantage for users who lack access to computer facilities. However, these users might be able to overcome this disadvantage by obtaining the computer services of a Summary Tape Processing Center established to provide summary tape services to census data users. (See section on Data Delivery Facilities.)

The subject content and geographic detail on the summary tapes are fixed, just as in printed reports. Users can manipulate geographic tabulation units to some extent, e.g., blockgroups could be combined into user-defined neighborhoods, census tracts into local planning areas, etc.; but no tabulations are possible from the tapes for areas smaller than the smallest area identified on the tape, or for larger areas which cannot be made up of entire units identified on the tape. In addition, no subject matter tabulations are possible other than those carried on the tape. Categories may be collapsed, but cannot be further broken down or cross-tabulated in any different way.

A special problem in working with computer-readable data files, such as census summary tapes, is the lead time necessary to develop plans and computer programs to put the data to work. The user must develop a research design to be programed. Successful programing requires thorough knowledge of the format and contents of the tape and working out "bugs"-- errors in the tape, faulty programing logic, or hardware incompatibilities. As much of this preparatory work as possible should be done in advance of receipt of the tapes so that the user does not lose the advantages of the timeliness of the data.

The Bureau has taken steps to ensure that problems of tape incompatibility or inadequate documentation are minimized in 1970. In order to aid users in planning and programing for 1970 census summary tape use, the Bureau is making available summary tape test reels for each Count. These are discussed later in the Census Use Programs and Materials section.

A related problem in summary tape use concerns cost. The costs of the tapes themselves are only a small fraction of the total costs in computer equipment, operating time programs, and personnel of actually working with the data and applying them to users' research and decision-making systems. Census users may be able to lessen these costs by cooperating with other users or obtaining the services of the Summary Tape Processing Centers which will be able to service the data needs of many users. (See section on Data Delivery Facilities.)

Microform

Microfilm from the 1970 census. The content of the First Count summary tapes will be available on microfilm on a State-by-State basis soon after the summary tapes are released. The expected cost will be about \$8 per roll of 16 mm microfilm, with three rolls needed to contain the contents of a complete reel of summary tape. Microfilm of the Third Count will also be available, but on a special order basis, rather than as a regular data product.

The microfilm will be prepared directly from the First Count tapes. A special machine the S-C 4411, "reads" a summary tape containing specific formatting instructions and arranges the tape's contents for photographing. In order to minimize the amount of film and programming required, the microfilm frames are essentially an array of numbers organized into lines and columns. There is no descriptive text found on the microfilm itself; purchasers will be provided with documentation similar to that used with the summary tapes. On the documentation there is a listing of the tabulated items (referred to as a matrix) accompanied by the line and column location of the various items. Figure 4 illustrates a frame format identical to that for the 1970 census First Count microfilm.

The frames are numbered consecutively on each roll of film. Coded geographic identification appears at the top of the frame. This, too, is explained in the microfilm documentation. Users will also need to consult the 1970 Master Enumeration District List which will carry all the codes for the political and statistical subdivisions of States for which 1970 data are tabulated.

Advantages of First Count microfilm. The microfilm offers the entire contents of the First Count summary tapes but does not require the use of a programmer or computer to be read. No printed report will contain all the information found on the microfilm and tapes.

Figure 4. Format for Microfilm Frames of 1970 Census First Count Summary Tapes.

000046		1970 FIRST COUNT CT1A70 *																														
R 70	70	60	C	QU	MCD	A	PLCE	WD	TRACT	DO	CO	B	ED	E	UA	C	SMSA	R	UA	E	TA	D	B	ESR	COU	PS	PLCE	V	CODE	SZ	C	G
7	55	025	35	0	35	120	0		0106	0601	02	1	0044	1	3500		4675	1			B	4675	7	4	065	025	35	1800				
MATRIX	LN.	FIELD 1		FIELD 2		FIELD 3		FIELD 4		FIELD 5		FIELD 6		FIELD 7		FIELD 8		FIELD 9		FIELD 10												
1-5	0	1920		697		1920								0		497																
6-10	0	1920		0		0								0		0																
11-13	0	0		0		0								0		0																
14	0			27736		-0000000000000001						445																				
15	0			11590		-0000000000000001						-0000000000000001																				
16	0			27503		-0000000000000001						325																				
17	0			11415		-0000000000000001						-0000000000000001																				
18	0	110		16		21		80		112		29		21		18		26		19												
1	1	9		14		6		22		133		128		117		42		11		15												
2	2	36		15		79		22		32		58		84		17		19		26												
3	3	12		15		12		7		8		37		140		120		109		36												
4	4	6		18		43		20																								
19-20	0	-0000001												0		4		0		1												
1	1			2		0		0		1		2		0		0		0		0												
2	2	0		0				1909		1		8		2		0		0		0												
3	3													2		0		0		0												
21	0	457		7		16		3		178		454		48		15		5		123												
1	1	-0000001																														
22	0	449		10		15		449		883		33		42		39		0		0												
1	1	-0000001																														
23	0	0		713		7		27		13		0		1		21		0		0												
24	0	44		33		11		5		18		3		0		0		0		0												
25	0	175		265		7		2		7		3		0		0		3		12												
1	1	0		0																												
26	0	425		424		0		124		121		1		3		6		137		2												
27	0	662		29		4																										
28	0	17		14		63		143		196		135		66		61		3574		3017												
1	1	2411		606		-0000001		-0000001		-0000001		-0000001		31																		
29	0	67		159		92		75		55		62		20		19		1920		1511												
1	1	409		-0000001		-0000001		-0000001																								
30	0	496		44		9		387		31		7		109		13		2		-0000001												
1	1			-0000001								-0000001																				
31-32	0	21		7		1				458		455																				
33-34	0	643		52		0		0				525																				
35	0	4		24		79		179		46		24		15		3		374		-0000001												
1	1	5																														
36-39	0	5		4		9		29		23		20		11		2		1		14												
1	1	104		-0000001		-0000001		-0000001		-0000001				3		103																
40	0	9																														
41	0	403		92		532		17		414		11		118		6		-0000001														
1	1	-0000001		-0000001		-0000001		-0000001		-0000001		-0000001		4		2																
42	0	51		38		13		-0000001		-0000001		-0000001																				
43	0	2		21		78		178		46		24		15		3		367		-0000001												
1	1	3																														
44	0	5		2		8		29		23		20		11		2		1		11												
1	1	101		-0000001		-0000001																										
45-46	0	628		0		67				53		0		0		0		0														
47-48	0	9		0		0		0				235		127		0		0														
49-50	0	52		26		0				362		268		94		-0000001		-0000001		-0000001												
51-53	0	1879		41				354		8				465		9																
54	0	19		0		0		1		1		0		2		0		0		0												
1	1	0		0		1		5		0		0		2		2		0		0												
2	2	0		0		0		0		1		12		1		0		1		0												
3	3	2		0		3		1		1		0		0		0		2		1												
4	4	0		2		0		0		0		1																				
55	0	28		18		121		17		17		40		59		53		6		11												

Secondly, the cost is not great. Allowing the maximum of 3 rolls of microfilm per reel of tape, the cost is about \$15 as compared to \$60 for a summary tape.

Thirdly, if a reader-printer is available, a photocopy of any frame can be made at about the cost of a regular xerox copy.

Finally, it is a easily stored and managed source of important information.

Disadvantages of microfilm. Use of the microfilm may be somewhat tedious because of the necessity to identify and locate a specific geographic unit by hand. In addition, the documentation will be necessary for locating the desired data. Also, a microfilm reader is necessary, and if photocopies are desired, a reader-printer is required.

Microfiche of 1970 Census Printed Reports. All of the final printed reports issued from the 1970 Census of Population and Housing will be publicly available on microfiche. In essence, microfiche is a sheet of microfilm containing multiple microimages in a grid pattern. Several sizes and formats for microfiche are available. Federal specifications generally provide for 60 images (or frames) arranged in five rows of 12 frames and a title area to identify the subject matter on a card approximately 4 x 6 inches in size. (See Figure 5).

Final census reports will be filmed as soon as they become available. Users will be able to order microfiche of the volume I population reports by State and other reports in their entirety. Announcement of the availability of the microfiche will be made with the announcement for the printed reports. Purchasers can order printed reports from the Superintendent of Documents at the Government Printing Office and microfiche from the Publications Distribution Office at the Census Bureau.

A price has not yet been set for the microfiche, but it is expected to cost about \$.25 per card.

The Advantages and Disadvantages of Microfiche. Microfiche is a very compact medium for storage of census data, in contrast to the printed reports. However, a special reader and reader-printer (if copies are desired) are necessary in order to use it.

Other eye readable copy

In 1960, some unpublished general tabulations were available in tables reproduced from the summary tapes in the form of original tabulation

sheets, photocopies, and xerox copies. Special Table PH-1 contained unpublished complete-count population and housing data for enumeration districts, census tracts, and minor civil divisions; Special Table PH-2 contained unpublished sample data for tracts; and Special Tables PH-3 through PH-7 contained unpublished sample data for minor civil divisions outside tracted areas.

In 1970, microfilm will be the chief non-computer tape medium for obtaining unpublished tabulations. Complete-count tables for census tracts, which will appear in Census Tract reports, will be available on loose pages in advance of these reports. The tabulations are selected from the Second Count data files.

Geographic products

The Census Bureau prepares a number of geographic tools useful for working with census data summaries below the national level. These tools include: (1) Census maps, (2) the Master Enumeration District List (MEDList), (3) Address Coding Guides, and (4) geographic base files.

Maps needed for census enumeration and to develop geographic code schemes for tabulating census results are prepared by the Bureau using the best available sources. The maps are submitted to local review for updating and correction of errors. (See section on Collection and Processing, Geographic Part.)

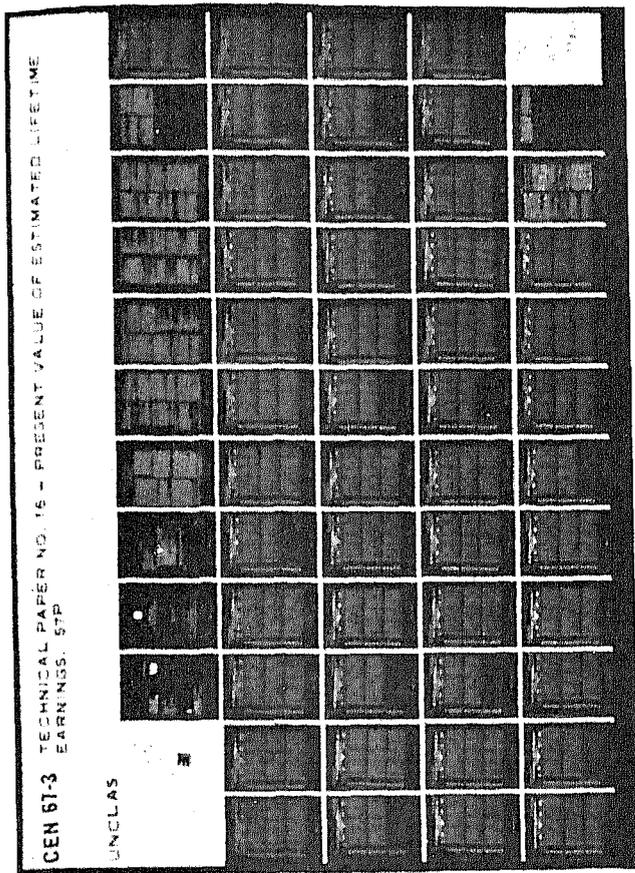
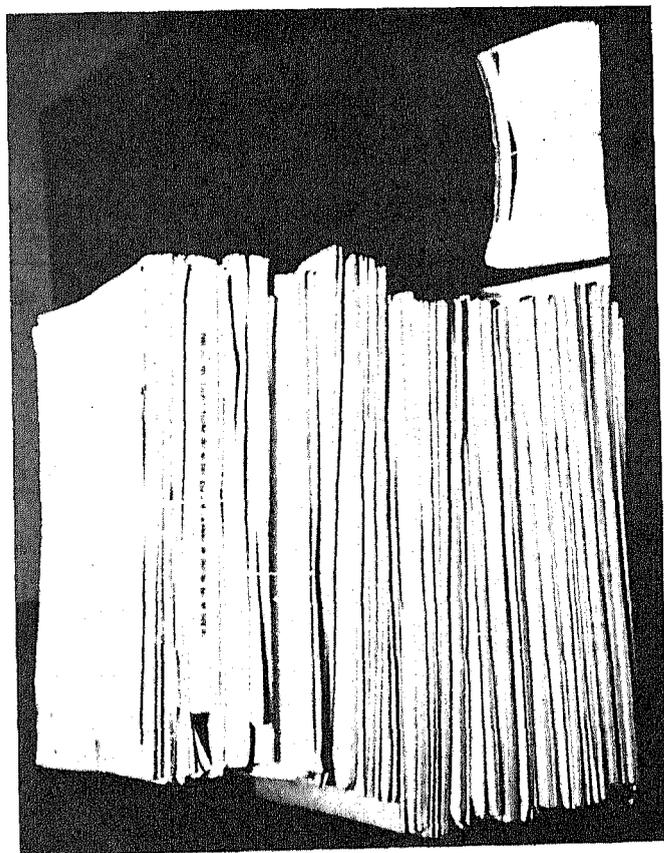
In 1960, the Census Bureau began to improve the maps available for census purposes and notable gains have been made. 1960 census maps, available for working with census tabulations below the national level, included U.S. County Division Maps (also showing incorporated and unincorporated places), census tract, city block, and enumeration district maps.

For users working with 1970 census data summaries, however, there are several types of maps being released by the Bureau. A Metropolitan Map Series has been created for the urbanized area of every standard metropolitan statistical area (SMSA).

These maps are at a common scale of 1 inch = 2,000 feet. Metropolitan Maps are invaluable to users working with small-area census tabulations in metropolitan areas. These maps contain streets and street names and all census-recognized boundaries down to the city block level. The Metropolitan Map Series consists of about 3100 map sheets covering a land area more than 100,000 square miles.

Figure 5. Microfiche for the 1970 Census of Population and Housing

This is what a Census Microfiche looks like. It is a negative film strip, size 4" x 6" which contains from 58 to 70 pages of print reduced to approximately 1/20th of the original size. A microfiche reader is used to magnify the print to original size. Reader-printers are available on the market which will quickly and easily enlarge photocopies of any or all pages in a report.



The 108 publications containing 4,650 printed pages was condensed on 123 microfiche which occupies a depth of 1" in a 4" x 6" card file. Large files of reports can be easily maintained where they will be available for fast retrieval. It takes less time to refile, too.

Information on microfiche readers and reader-printers may be obtained by consulting any company in the micro-film industry.

Maps for areas beyond the coverage of the Metropolitan Maps are of two types: county maps and place maps. County maps identify the minor civil division or census county division, tract, place, and enumeration district boundaries and are generally at a scale of 1 inch = 2 miles. If finer geographic detail is needed for individual places having more than one enumeration district, place maps may be purchased which show streets and contain enumeration district boundaries and census tract boundaries where applicable. They are generally available for places not included in the Metropolitan Map Series.

Other maps available from the Bureau include: (1) Tract outline maps, defining census tract boundaries and numbers; (2) a series of State maps identifying minor civil division boundaries, or census county division boundaries, and places identified in the census tabulations; (3) a United States map of counties containing boundaries for approximately 3100 counties. Chart B on page 47 summarizes the 1970 census maps.

Master Enumeration District List (MEDList). The MEDList will serve as the source of information for geographic codes contained on census summary tapes. It provides a listing of State, county, and area or place names corresponding to numerical identification codes used on the summary tapes. Knowledge of the codes for areas of interest is essential to a summary tape user in developing programs for processing the summary tapes. The MEDList furnishes official population and housing total counts for enumeration districts and block groups from which congressional district and other area totals may be summarized. The inclusion of the counts makes the MEDList a valuable tool for apportionment purposes.

The 1970 MEDList is an expanded version of the 1960 Geographic Identification Code Scheme. The 1960 counterpart, issued in 1961, did not contain block and census tract codes, enumeration district codes, or population and housing total counts.

In order to give users lead time in preparing for the use of the MEDList, an abbreviated version is available containing codes identified to the census tract level. The final version of the MEDList, containing a complete set of geographic codes and area names down to the enumeration district and block group level, will become available on a State-by-State basis in conjunction with the First Count summary tapes throughout the fall of 1970. (A complete MEDList for the entire country will become available in

January 1971.) Both the abbreviated and final versions of the MEDList can be obtained on magnetic tape, microfilm, and paper copy.

To permit identification of areas for which data has been compiled, both versions (abbreviated and final) of the MEDList should be used in conjunction with census maps. The preliminary MEDList will assist summary tape users in preparing their computer programs for processing summary tapes. The final MEDList will serve the same purpose; however, it will also be useful for redistricting and reapportionment purposes since it will include small-area population counts.

Address Coding Guides (ACG's). To conduct the census by mail, the Census Bureau had to know every address where people might reside. An Address Register was prepared on computer tape, containing the addresses of all housing units in the post office city delivery areas. (Addresses in the mail census area but outside city post office delivery areas were obtained through a special hand-listing operation. (See section on Collection and Processing.)

The questionnaire sent to each address was assigned an Address Serial Number obtained from the Address Register and used in subsequent processing. The Address Register, with its link to the individual census records, is not available to users.

Since the objective of the census is to provide summary data for various geographic units, geographic codes had to be assigned to the address on the Address Register. To accomplish this geographic coding operation, an Address Coding Guide was created by local planning agencies in cooperation with the Bureau of the Census and the Department of Housing and Urban Development. These coding guides were used in a matching operation with the Address Register to determine the codes for each address.

Address Coding Guides (ACG's) were prepared on computer tape for the post office city delivery areas in the 145 mail census standard metropolitan statistical areas (SMSA's). The ACG does not contain confidential information and is available to the public on a cost basis (see appendix, TD Series).

Essentially, the Address Coding Guide is an inventory of street names and address ranges for street sides between intersecting streets or other boundaries (i.e., address ranges for block-faces or sides of a city block). Each blockface record also contains its census tract and block,

Chart B. 1970 Census Maps Available for Public Use

MAP SERIES	SCALE	NUMBER OF MAP SHEETS	SIZE OF MAP SHEETS	AVAILABILITY
METROPOLITAN MAPS - essentially cover urbanized areas of SMSA's and contain all census recognized boundaries down to the block level.	1" = 2,000' Other scales available by special order only.	Varies according to size of urbanized areas. ^{1/}	18" x 24"	Preliminary maps are currently available; also these maps (in final form) will accompany HC(3) reports. ^{2/} (Not available for contract block reports.)
COUNTY MAPS - contain boundaries for MCD-CGD's, incorporated places, tracts, and enumeration districts.	Generally, 1" = 2 miles.	1 map per county, except for very large counties.	Generally, 18" x 24"	Preliminary maps are currently available. ^{2/}
PLACE MAPS - for incorporated and unincorporated places; contain tract and enumeration district boundaries. ^{3/}	Varies according to size of place; range from 1" = 400' to 1" = 1,500'.	Generally, 1 map sheet per place.	Varies according to size of place.	Preliminary maps are currently available. ^{2/}
STATE MINOR CIVIL DIVISION OR CENSUS COUNTY DIVISION MAPS - include township and city boundaries.	Generally, 1" = 12 miles.	1 map sheet per State.	3' x 4'	These maps will be available in mid-1970; also, will appear with PC(1)A and PC(1)B in sectionalized form.
TRACT OUTLINE MAPS - show tract boundaries and incorporated limits for places over 25,000 or more population.	Varies according to size of SMSA and complexity of tracted area; range from 1" = 1/2 mile to 1" = 10 miles.	Generally, 2 map sheets per SMSA.	22" x 24"	After tabulation of 1970 tract data; also will be available with PHC(1) reports.
UNITED STATES MAP OF COUNTIES - contain boundaries for approximately 3,100 counties.	1:5,000,000 or approximately 79 miles per inch.	Single map sheet.	26" x 41"	Currently available.

¹ A listing of the number of Metropolitan Map sheets for each urbanized area (UA) is included in Data Access Description, CG-1. This number can range from as few as 2, to as many as 137 map sheets for a given UA.

² Final maps are expected to become available in late 1970.

³ There are approximately 100 "no map" places in the U.S.--These are usually places under 1,000 population.

ward, 5-digit ZIP, congressional district, place, minor civil division, county, and State codes. Local agencies which assisted in the preparation of the ACG for their area received a free copy in either tape or printed form. Other users may obtain ACG's at cost.

ACG's are useful in several ways. They can be used as a blockface dictionary when requesting special tabulations from the Bureau. The special tabulations may be for local areas, such as school districts or traffic zones, defined by groups of blockfaces. (See section on Special Tabulations.)

The Address Coding Guide can be used as a geographic reference source to code local data records for analysis. A clerical geographic coding process would involve referencing a printout from the ACG and recording the desired codes (normally census tract) on the data collection form. ADMATCH, a computer program available from the Census Bureau, provides a computer approach to this task. The program uses the Address Coding Guide to assign codes to data records that contain street addresses and are on cards or computer tape. These geographically coded records can then be summarized for analysis.

In spite of precautions, errors may have escaped detection in Address Coding Guides. In addition, changes after the coding was completed (new streets, streets eliminated, etc.) impair utility.

Geographic Base Files (GBF). Geographic Base File is a Bureau term describing an Address Coding Guide that has been improved by the addition of Dual Independent Map Encoding (DIME) features and "XY" coordinates.

Soon after the beginning of the preparation of the Address Coding Guides for the 1970 census, it was recognized that these guides could have been prepared by somewhat different techniques that would have yielded improved accuracy as well as increased utility for a variety of purposes. These new techniques were developed under the title of DIME, which is an acronym for Dual Independent Map Encoding.

DIME, in essence, adds to each record of the ACG identifying numbers for the "nodes" or intersections at the ends of each street segment, and an identification of the blocks on each side of the street. DIME also adds non-street features such as rivers, shorelines and city limits. The Address Coding Guide without DIME

is a loose description of the streets in the address system. DIME knits them together. With nodes and street side identifications in the system, a computer can trace a route around each block and come back to the point of beginning or, failing that, can note that there is an error or omission in the Address Coding Guide.

With the addition of "XY" coordinates to the DIME file, it is possible to display data using computer generated maps, calculate areas of blocks, tracts, etc., calculate the distance between any two points, retrieve data for the areas located within a given distance of a particular point, and accomplish other analyses.

The DIME technique was developed by the joint efforts of the staff of the New Haven Census Use Study and the Statistical Research Division of the Census Bureau. DIME has provoked considerable interest throughout the country. The Census Bureau recognizes the system's usefulness to planners and government officials and also the utility of its computer-edit procedures for accurate Bureau work. The Bureau has offered to ACG SMSA's the option of adding DIME features and coordinates to their ACG, thus creating a geographic base file, and to non-ACG SMSA's the option of constructing a geographic base file from scratch using the DIME technique. This work is a cooperative cost-sharing venture between the Bureau, other Federal agencies, and the local areas.

The Southern California Regional Information Study (SCRIS) in Los Angeles is building on the New Haven experiences to gain a better understanding of geographic base files and their uses. Both the Bureau of the Census and SCRIS are giving thorough consideration to the implementation of methods for maintaining geographic base files so that they will retain their usefulness between censuses. (For additional information on SCRIS see Census Use Programs and Materials.)

Public use samples

Virtually all the publicly available data from the census are summary data rather than basic data about individual persons or households. Releasing data about specific individuals is precluded by the confidentiality restrictions of the census. Samples of basic data with identifying information removed will, however, be made available for large areas for statistical purposes.

In 1960, the Bureau of the Census made available on tape or punchcards the separate records of the population characteristics of approximately 180,000 individuals, comprising

a 0.1-percent sample of the population of the United States. The information contained on the records comprised a selection of the characteristic of persons enumerated in the 25-percent sample (consequently it was a 1/250 sample of the 25%). The sample was designed to be self-weighting; that is, each person was assigned a weight of 1,000.

This sample enabled users during the 1960's to prepare analytical tabulations of the characteristics of the population of the United States. The names and address information of the respondents and certain of the more detailed items, such as place of residence, were not revealed. Data in these samples were used by a number of university, government, and private research organizations. The sample was also used as training material in social science departments of many colleges and universities.

Similar samples will be drawn from the returns of the 1970 census; in fact, the total Public Use Sample (P.U.S) program has been greatly expanded. The intent is to make the samples much more appropriate for analysis of subgroups defined by geographic or demographic considerations. The basic elements of the Public Use Sample project are as follows:

1. There will be 6 basic Public Use Sample files, each containing sample records for 1 percent of the population, or roughly 2 million individuals.

2. No names or addresses will appear in the file. Geographic codes will identify only areas (e.g., States, SMSA's or areas defined by a set of geographic identifiers) with more than 250,000 population.

3. All of the characteristics of people and households recorded in the census sample basic records will be on the Public Use Sample records. Detail on place-of-residence, place-of-work, and very high incomes is limited to avoid identification of a particular individual.

4. Records will be organized on a household-by-household basis so that characteristics of the various family members may be inter-related and associated with housing unit characteristics. Sampled vacant units and persons in group quarters will be present in the file.

5. The user may obtain a P.U.S. file drawn either from 15-percent sample records or 5-percent sample records (See section on Collection and Processing). A "one percent"

P.U.S. file from 15-percent sample records will in fact be 1/15 of all such records, and likewise 1/5 of 5-percent sample records.

6. The user will have the option of obtaining a P.U.S. file including "Neighborhood Characteristics," a set of social indicators which allow comparison of the individual's characteristics with information about the kind of neighborhood he lives in. These neighborhoods will not be identified, but will represent areas roughly the size of census tracts.

Geographic Detail. The six P.U.S. files include three drawn from 15-percent sample households and three drawn from 5-percent sample households. The three mutually exclusive files in each case allow three different kinds of geographic identification:

1. "SMSA and County Group" files identify each SMSA over 250,000 population, and similarly large groups of counties elsewhere. Where an SMSA can be subdivided into parts made up of whole counties, each of which has 250,000 population, these distinctions will also be made. County groups to be used have not yet been defined.

2. "State" files identify each State, and within larger States identify urban and rural, and metropolitan and nonmetropolitan parts.

3. Census Divisions (sub-divisions of the country into nine State groups) and size of urbanized area are identified in the "neighborhood characteristics" files. These are the only files which include neighborhood characteristics, presented for each household.

Availability. Public Use Sample files will be available on IBM-compatible magnetic tape, 7- or 9-track, at the cost of reproduction. A single 1-percent P.U.S. file for the U.S. will probably take up 30 reels of tape. Subfiles extracted from the basic 1-percent files, such as 0.1-percent or 0.01-percent subfiles, will also be available. Segments of a 1-percent file, covering only part of the country or including only certain populations, such as Negro households, may similarly be requested.

Public Use Samples from 1970 census records will be available in the latter part of 1971.

Comparable 1960 Public Use Sample. 1960 census basic records are being resampled to provide a 1960 Public Use Sample with maximum comparability with the 1970 samples. The sampling fraction will be 1-percent and geographic identification will be identical to the

"State" scheme described previously. Format and subject matter content will parallel that of the 1970 products as nearly as possible. Sampling of particular cases will be done independently of the 1970 samples and no matched comparisons for particular households will be possible. This new 1960 P.U.S. will probably be available in late 1970.

Advantages of Public Use Samples as a census data product. Public Use Samples are most useful to researchers interested in the relationship among demographic variables more detailed than those explored in regular census tabulations. In 1970, researchers will also be able to analyze the effect of community characteristics (living in a high-income area, for example) on these relationships for individuals. Public Use Samples have the advantage of containing large numbers of individual records, compared with most privately-sponsored sample surveys. They are also available at relatively low cost because users are spared the expense of collecting the data and putting them in a form ready for computer analysis.

Disadvantages. Since a user must tabulate a Public Use Sample to produce desired summary statistics, P.U.S. use entails greater expense than that of published summary data. Public Use Samples are also not appropriate for the user interested in small geographic areas. When there are relatively few cases being tabulated, the reliability of observed relationships suffers. Hence, users who attempt to make extensively detailed cross tabulations may find the sample size unacceptably low. In these cases, special tabulations performed by the Census Bureau, on a reimbursable basis, should be considered.

Special Tabulations

Special tabulations include those projects performed by the Bureau at user request and user expense. Users are charged not only costs of reproduction, but also any programing, clerical, machine or other costs necessary to provide the service. However, users are spared the costs of the original data collection.

Special tabulations become necessary most commonly when user needs for certain subject or geographic detail cannot be satisfied by general tabulations. Because special tabulations are much more costly than general tabulations, users must balance these added costs against the benefits of obtaining the precise data required. It should be pointed out that special tabulations at one census tend to become general tabulations at the next. In response to user demand, summary tapes, Public Use Samples and more tabulations for small geographic areas, all available essentially on a special

service basis in 1960, are to be generally available data products in 1970. However, there will still be users who require special tabulations from the 1970 census data base.

Special tabulations are those which require retabulating the census basic record tapes containing records for individuals and households to obtain data summaries for geographic areas not recognized in general tabulations, and/or include subject breakdowns or cross-classifications not appearing in general tabulations:

1. Users may need special tabulations when general tabulations are not available for the particular geographic areas they want to work with. Users may request their own tabulation areas within the following limits:

For portions of the country located outside urbanized areas, where the census was not conducted by mail, and where Address Coding Guides or other geographic base files have not been prepared, no geographic areas which cut across enumeration district boundaries, may be specified as tabulation units.

In those urbanized areas where the census was not conducted by mail and no Address Coding Guide is available, the city block is available as the smallest geographic building block.

In mail census areas (large metropolitan areas of the country), where there is an Address Coding Guide, blockfaces (sides of blocks) can be used to construct geographic tabulation areas to user specifications. No tabulations may be obtained for individual blockfaces (to protect confidentiality), but users may combine blockfaces to make up areas of their own choosing, for example, police precincts, health districts, or planning zones. These areas need not conform to census boundaries. The Address Coding Guide which carries blockface codes and address ranges for city streets makes this geographic flexibility possible. However, it should be noted that special tabulations requiring aggregations of blockfaces will be expensive and time consuming; accordingly, users are urged to define their special tabulation areas in terms of whole blocks which can be readily identified on the census basic record tapes.

2. In addition to, or instead of, special area tabulations, users may require different subject content than is available in the general tabulations. For instance, the user

may desire income distributions showing different class intervals than those generally tabulated, or cross-classifications, such as family size, not included among regular tabulations. The user may want to study populations, such as Chinese nativity, not generally tabulated, or tabulations of subjects (such as mother tongue) which present the full array of categories carried on the basic record tapes (over 70 in this case), as opposed to the limited set shown in general tabulations (about 25). The possibilities are almost endless. Users are limited ultimately (in addition to the usual confidentiality and reliability restrictions) by the coded categories carried on the complete-count and sample basic record tapes, and by their own imaginations in combining and reordering these categories.

Special tabulations must be carried out only by the Bureau personnel in order to protect individual confidentiality. The Bureau performed a large number of special tabulations for users on the 1960 census data base, and expects to continue to service as many special tabulations of 1970 census data as it can without interfering with its regular workload through an organization known as the Central Users' Service.

Costs of special tabulations vary, depending on such factors as the quantity of data requested, the complexity of users' data specifications, processing costs for personnel and equipment, the media desired (printouts, computer tapes, etc.), as well as planning and overhead costs. Special tabulations performed by the Bureau on 1960 data ranged in cost from less than \$500 to over \$100,000 and averaged about \$10,000. Users may cut costs by pooling resources to obtain a special tabulation.

The procedure for obtaining a special tabulation can be divided into several steps. First, the user should outline his data needs in the form of dummy statistical tables and list the areas for which the data are desired. In drawing up the tables, it is helpful to include several data items (if possible) which would correspond to published census numbers. These control figures usually will not affect the cost of a special tabulation but will provide some confirmation that the computer program is tallying the desired universe or population group.

As a second step in getting a special tabulation, the dummy tables and list of areas should be sent to the Central Users' Service of the Bureau. (The functions of this office are explained in more detail in the section on Data Delivery Facilities.) The Central Users' Service will evaluate these specifications in

terms of feasibility, possible duplication of work already done, correspondence to census item definitions, and alternative ways of compiling the data. Once these points have been resolved, an official estimate of the cost and timing for preparing the tabulation will be developed and sent to the customer.

As the third step in this process (if the customer decides to proceed with the tabulation), the official cost estimate is signed and returned with the required funds to the Bureau. An account for the project is then established and programmers are assigned to write or modify the necessary computer program.

The fourth step in the special tabulation process is reached when the computer program has been compiled and is ready for testing. At this time, a small or partial input file for the desired tabulation universe is used in a test run of the program. The resulting data are checked by the Central Users' Service for conformity to the user's specifications and agreement with published census data. This test output is then sent to the customer for his examination and acceptance before further work is done. When the customer has indicated his acceptance of the test data output, full-scale production is undertaken and the resulting data are sent to the customer. After a reasonable period of time, the customer's account is closed and the related computer programs and output tapes are blanked or retired to the Bureau's record storage facilities. If printed output was generated, the Central Users' Service retains one copy of these materials.

Special tabulations may be furnished to users in any media desired--computer printouts, type-written or hand-posted tables, microfilm, microfiche, punched cards or magnetic tape. The Bureau reserves the right to restrict the publication of special tabulation results provided to users, to publish the data itself, or to make them available to others.

Advantages of special tabulations as a census data product have already been outlined--namely geographic and subject content precision.

Disadvantages include high cost and the fact that a substantial amount of time may be required to obtain the desired data. Specifications must be formed, computer programs written and tested, and the job run, without interfering with regular Bureau activities.

Census Use Programs and Materials

In addition to the products and services summarized previously, a number of guides,

references, computer programs, and other aids are available to the user of census data. These are intended to assist him in identifying desired information and to expedite his subsequent acquisition and use of the appropriate products or services. The Users' Guide is, itself, one of the key census use materials. This section of the Guide presents descriptions of other materials for users.

The Census Use Study

The Census Use Study was established by the Census Bureau in 1966 as a research and development project to explore the needs for and uses of small area data on the local and regional level. New Haven, Connecticut, was selected as the location for the study since this city was scheduled to be the location of a full-scale pretest census early in 1967. The basic program for the study was structured around the following project objectives:

Exploration of current uses and probable future needs for census data in existing local, State, and Federal programs.

Development of a system to assist in the interrelating of census data with local and State data to meet specific needs. Initial contacts revealed that many agencies wished to relate such data sources but were hindered by conflicting area definitions.

Investigation of the possibilities for cooperative data collection activities between the Census Bureau and other Federal, State, and local agencies with special emphasis on preparation of guides and development of uniform terms and procedures.

A study of the adequacy of census data tabulations for local use, with particular attention to the level of detail and media of presentation (e.g., magnetic tape, printout).

Research on the feasibility of computer mapping techniques for local agency display of census or other data.

Analysis of local use of census data to determine additional uses, or improved uses, by developing procedures which could be utilized in local community programs.

Guided by these objectives of the study, research was carried out in the following areas:

- Geographic base systems (DIME)
- Record matching (ADMATCH)
- Computer mapping
- Special tabulations of data

- Special sample surveys
- Local data user interests and needs

The study was supported financially by several Federal agencies:

- Department of Commerce
- Office of Civil Defense of the Department of Defense
- Department of Health, Education and Welfare
- Department of Housing and Urban Development
- Department of Transportation

The City of New Haven also provided support and about 30 local agencies participated.

The results of the study are being presented in a series of reports and computer program packages. These include:

Report No. 1. General Description. An overview of the development and operation of the New Haven Census Use Study. Price: 25 cents.

Report No. 2. Computer Mapping. A report on the mapping of census and local data using several computer mapping techniques. Price: 25 cents.

Report No. 3. Data Tabulation Activities. A report on the contents and uses of special tabulations provided to local agencies from the 1967 special census of New Haven, Connecticut. Price: 25 cents.

Report No. 4. The DIME Geocoding System. A report on the development of the Dual Independent Map Encoding (DIME) geographic base file including a description of the file and edit system, uses of the file, and methods for creating a DIME file. Price: 50 cents.

Report No. 5. Data Interests of Local Agencies. A description of a series of surveys undertaken to explore the needs of local agencies for small area data. Price: \$1.00.

Report No. 6. Family Health Survey. A report on a sample survey taken to augment data from the special census of New Haven with information on various elements of family health. Price: 50 cents.

Report No. 7. Health Information System. This report documents the development of a maternal and child health information system utilizing census and local data. Price: 75 cents.

Report No. 8. Data Uses in Health Planning. This report outlines the uses of data in health planning based on the general research conducted by the Census Use Study. Price: 50cents.

Report No. 9. Data Uses in Urban Planning. A description of the general findings of the Census Use Study as they apply to urban planning. Price: 25 cents.

Report No. 10. Data Uses in School Administration. A report describing the uses of data in school administration based upon activities conducted by the Census Use Study with local school administrators. Price: 25 cents.

Report No. 11. Area Travel Survey. A description of a sample survey conducted to augment the New Haven special census data with basic data for use in transportation planning. Price: undetermined.

ADMATCH: An Address Matching System. A computer program package designed for use in assigning geographic codes to local records using a DIME or similar geographic base file. Includes a user's manual and computer programs. Price: \$60. (Manual may be purchased separately for 75 cents.)

DIME: A Geographic Base File System. A computer program package for creating a DIME geographic base file. Includes clerical instruction, a computer manual and programs. Price: undetermined.

GRIDS: A Computer Mapping System. A computer program package for use on small-scale computers which provides three mapping options within a grid pattern: Density, shading, and value maps. Includes a user's manual and computer programs. Price: undetermined.

For additional information about the Census Use Study reports or to place an order, write the Publication Distribution Section, Bureau of the Census. The computer program packages can be obtained from the Central Users' Service, Bureau of the Census. Checks should be made payable to "Census-Department of Commerce."

The New Haven phase of the Census Use Study ended, except for the ongoing health information system project, in July 1969. At that time, the Southern California Regional Information Study (SCRIS) was established in Los Angeles, California.

SCRIS, jointly sponsored by the Bureau and the Southern California Association of Governments, will attempt to transfer experience gained in New Haven to a larger and more

complex urban area. As the Bureau's contribution, several Census Use Study members are participating in this effort. The remainder of the staff, as well as the office space and furnishings, has been provided by agencies of the city and county governments, regional planning associations, and private organizations.

The work program of SCRIS is divided into two parts. The first includes the preparation of an ACG/DIME file by adding DIME features to the Los Angeles Address Coding Guide. In association with this task, the staff will develop procedures that will be incorporated into recommendations for a national geographic base file maintenance and updating program.

The second part of the SCRIS work program involves the use of various tools and techniques from the New Haven project in conjunction with local studies utilizing local and census data from the SCRIS area. The SCRIS staff members from the Los Angeles area agencies, along with the participating local, regional, and private organizations, will conduct this phase of the study with the Census Bureau personnel supplying technical assistance. The Census Bureau expects that the participation in the study will provide valuable insight concerning the uses of 1970 census data in a large metropolitan region. This experience is expected to benefit all other metropolitan areas in their exploration of the data.

Information resources for users of unpublished products

To effectively use census data products as they become available, it is important to become familiar with advance descriptions of them and to keep informed about related programs and materials. The Bureau has several means for keeping users up to date on data access and use developments and for orienting them to the problems and potentialities of census data use. These include:

Small-Area Data Notes. This publication is issued monthly to provide current reports on events of interest to users of census data. It announces new programs, products, and services available from the Bureau of the Census, and draws attention to meetings and relevant developments outside the Bureau. A question and answer format is sometimes used to clarify census plans for users. To be placed on the list to receive future copies, write to the Publications Distribution Section, Bureau of Census, Washington, D.C. 20233.

Data Access Descriptions. The Descriptions are papers which provide data users with advance, detailed information on data

products, such as the summary tapes, and cover other aspects of census data access and use. Each issue deals with a specific topic and is prepared when the necessary information becomes available, rather than on a regular schedule. Persons on the mailing list to receive Small-Area Data Notes will also receive Data Access Descriptions.

Summary Tape User Memoranda. The Memoranda provide timely information particularly important for persons planning to use summary tape data. Current Memoranda deal with the summary tape test reels, display programs, geographic tools, and other products and services. They also announce summary tape user conferences and provide a public listing of Summary Tape Processing Centers. To be placed on the mailing list, write to the Publications Distribution Section, Bureau of Census, Washington, D.C. 20233.

Summary Tape Information Library Memoranda. This memoranda series is designed for libraries interested in informing patrons about 1970 census summary tapes and assisting them in locating materials relevant to using census data on tapes. Libraries which advise the Data Access and Use Laboratory of their interest will be included in the Summary Tape Information Library program. They will then receive these memoranda, data access publications, technical documentation of tape files, and other descriptive materials.

1970 Census User Conferences. The Census Bureau is cooperating with State and local organizations, such as city planning offices, regional councils of government, universities, and chambers of commerce, which sponsor conferences for data users in their areas. The focus of these meetings, also known as "summary tape user conferences," is the 1970 census products and services, particularly the census summary tapes and the materials and geographic tools needed to use them effectively. As the 1970 tapes become available, the focus may shift to technical problems of tape use and ways in which the data may be applied in urban planning, marketing, and other areas. Sponsoring organizations which would like to arrange for participation of Census Bureau representatives in a census user conference should contact the Data Access and Use Laboratory. Travel and per diem expense of Bureau representatives must be reimbursed by the sponsoring organization. The Laboratory will also assist in providing handout materials for user conferences. Some items can be furnished free of charge and

others on a cost basis. Conferences are announced in Small-Area Data Notes and Summary Tape User Memoranda.

Directory of Census Procedures and Tabulation Units for Small Areas. The Directory is being prepared to help users identify the nature and extent of available census data for specific localities. It indicates the geographic tabulation units (blocks and tracts) available and enumeration procedures (mail or nonmail, ACG, geographic base file) for places of 25,000 or more population, counties, SMSA's, and States. For example, use of the Directory will enable persons to determine if a particular local area is included in block, tract, and mail census programs.

Technical materials needed to use census products

There are several types of technical reference materials and technical aids which are important for understanding census products, avoiding misinterpretation and misapplication of the data, and gaining access to desired tape data. These include:

Census Users' Dictionary. The Dictionary, an appendix to the Users' Guide, has been designed as a single standard reference to the definitions for the geographic and subject concepts employed by the Bureau in collecting and presenting 1970 census data. The Dictionary includes: the Introduction; Part I, Geographic Areas; Part II, Population Census Concepts; Part III, Housing Census Concepts; and an Alphabetical Index.

Within each part, concept definitions are organized into broad subjects such as Family Structure or Household Equipment. Each subject or area concept defined is assigned a unique identifying number to indicate the conceptual logic and structure of census categorization. Concepts which logically stand alone, for example, "sex" or "type of foundation in a housing unit," receive whole numbers (59 and 170 respectively). Subcategories of these concepts, such as "male" and "female" for sex, are indented under the main concept and receive fractional numbers (59.1 and 59.2 respectively).

In addition to definitions of concepts as they appear in general census tabulations, the Dictionary contains information about the census questions from which concepts derive, additional categories not tabulated but stored on basic record tapes at the Bureau which may be available on a special tabulation basis, and the universes to which concepts apply (e.g.,

all persons or persons 14 years and over). Each part includes an introduction which discusses collection and processing procedures and other considerations affecting concept meanings and the availability of information.

Glossary of Technical Terms and Abbreviations. Included in this Glossary are technical terms associated with the collection, processing, and tabulation of census data; terms used in the technical documentation of summary files on magnetic tapes; and other terminology which may be used in meeting requests for census data or special services. Also included are frequently used abbreviations. The Glossary is included as an appendix to the Users' Guide.

Technical Documentation. Technical documentation is prepared for all Census computer tape and punchcard data files. This documentation describes in detail the content, logical structure, format, and pertinent technical information for each particular data file. Documentation is prepared for each summary tape file, Master Enumeration District List, Public Use Sample file, or other Census-prepared computer tapes. Each tape sold to the public is accompanied by its appropriate documentation.

Available 1970 census summary tape technical documentation constitutes the TD-Series appendices to the Users' Guide. This documentation is considered final; however, it is possible that some alterations will be made before delivery of the 1970 census data reels.

The first few pages of the documentation provide technical details about storage of data on tape (e.g., record format; recording density; record, block and file size; language; file organization; etc). The geographic codes presented for the areas summarized are also described. The remaining pages describe the data content of the file and the field size and relative location of each data item.

Care has been taken to make the documentation as explicit and complete as possible. The tabulation description format is designed to clearly indicate which universe (persons 14 years old and over, owner-occupied housing units, etc.) is being tabulated by which subject variables and to prevent any confusion over which data items come first on the tape. Users will find the Census Users' Dictionary and Glossary of Technical Terms and Abbreviations useful references if they do encounter unfamiliar concepts or terms in the documentation.

Format and Technical Information about Tape Data Files on IBM-Compatible Tapes. Two documents, "Character Set for the 1970 Census Summary Tapes" and "Technical Conventions for 1970 Census Summary Tapes" describe the special character set, header and trailer labels, and other technical conventions associated with census summaries on industry-compatible IBM tapes. Procedures for indicating which data have been suppressed are also described. These papers are appendices to the Users' Guide.

Summary Tape Test Reels. A test reel for each 1970 summary tape file is developed well in advance of the availability of its 1970 file. Users who intend to purchase the 1970 summary tapes may work with these test reels to develop their tape use plans and the various routines and analytic programs they wish to apply to the actual summary tapes. Thus, when the summary tapes do arrive, users will be able to begin working with them immediately.

Test reels for the First through Fifth Count summary tapes are now available. They contain tallies (formatted as they will appear on the 1970 tapes) based on the census pretest conducted in Dane County, Wisconsin. Each reel may be purchased on IBM 7- or 9-channel tape at a cost of \$60 (fee includes the cost of the physical tape reel itself plus the cost of copying, handling, postage, and technical documentation printing costs) from the Central Users' Service, Bureau of the Census, Washington, D.C. 20233.

DAULLIST. The Data Access and Use Laboratory of the Census Bureau has prepared a computer program to list the contents of the 1970 Census First Count summary tapes, including the First Count test tape. The program, called DAULLIST, reads the summary tapes and prints the geographic identification and the population and housing counts with descriptions corresponding to the First Count tape documentation provided with tapes purchased from the Bureau. Options are provided to permit a user of the program to select those geographic areas and the particular population and housing data items of interest.

The DAULLIST program is written in both FORTRAN IV and COBOL Level D for the IBM System/360 computer run under the Disk Operating System. Both versions require two tape units and 65K bytes of core storage. The FORTRAN version uses an Assembler Language subroutine to read the large (1800 characters) records on the First Count tape.

The DAULLIST computer program package (a copy of the program tape and a manual of program documentation) is available for a cost of \$60 (tape reel included) from the Central Users' Service of the Bureau. The magnetic tape contains three files: (1) The source program in FORTRAN IV with the Assembler Language subroutine, (2) the source program in COBOL, and (3) the text used in printing the table and item descriptions.

At this time, DAULLIST display programs for the Second and Third Counts are being developed. No decision has been made to develop display programs for later Counts.

Guides to Federal Statistics

There are a number of guides and catalogs for users interested in reviewing the social and economic statistics available from the Census Bureau and other Federal agencies. These include:

1. Bureau of the Census Catalog. The Catalog is published four times a year; each quarterly issue is cumulative to the annual (fourth) issue. The Catalog is divided into two parts, each of which is arranged by major subject field (e.g., Agriculture, Governments, Population, etc.). Part I, Publications, is a classified and annotated bibliography of all publications issued by the Bureau of the Census during the year to date. Geographical and subject indexes to the contents of the publications are provided. Selected publications of other agencies and selected technical papers and articles by Bureau staff members are also referenced.

Part II, Data Files and Special Tabulations, provides a listing of those materials which became available at the Bureau during the Catalog period. Included are data files on computer tape or punchcards, selected special tabulations of data (on tapes, cards, and printed tallies) prepared for users, and unpublished nonstatistical materials, such as maps and computer programs.

The Catalog is available by subscription (annual fee, \$3.00) from the Superintendent of Documents, Washington, D.C. 20402 or the U.S. Department of Commerce field offices.

2. Census Bureau Programs and Publications: Area and Subject Guide. This Guide is another basic reference for all users and potential users of Census Bureau data. It is a

comprehensive review of the current programs of the Bureau and of the statistical reports issued by the Bureau in the 1960's. It includes Bureau programs in agriculture, construction, distribution and services, foreign trade, geographic reports and maps, governments, housing, manufacturing and mineral industries, population, transportation, general economic statistics, statistical abstract and supplements, and studies of foreign countries. For each subject area, the Area and Subject Guide gives brief descriptions of the programs and activities in that area. Then, in table format, it lists the title of each publication, together with the geographic areas and the principal subjects covered. Also included in the Guide are detailed definitions of the geographic areas referenced and two appendices--Finding Guides to Recent Census Bureau Statistics and Recent Methodological Studies. The Guide is available for \$1.50 from the same sources as the Catalog.

3. Directory of Federal Statistics for Local Areas: 1966. This directory is a finding guide to current sources of Federally published socio-economic data for local areas (that is, areas smaller than States). Over 180 publications of 33 Federal agencies are referenced. The information is arranged in tabular form under 22 main subject headings. It includes a description of the subject and tabular detail found in each source document cited and specifies the kind of area (SMSA's, counties, cities, rural areas, city blocks, etc.) for which the data are presented and the frequency of the data. The appendices include a subject index and a guide to the listed sources. The statistics covered are limited to the period from 1960 to July 1966. This directory is also available from the Superintendent of Documents for \$1.00.

4. Directory of Federal Statistics for States: 1967. This directory is a companion document to the Directory for Local Areas. It serves as a finding guide to Federal sources of published social, political, and economic statistics for States. In a similar manner, it describes the detail included in particular publications, shows the periodicity of the data, and specifies the publications in which the data appear. A subject index and complete bibliography are also included. The statistics covered are limited to the period from 1960 to July 1967. The Directory costs \$2.25 and is available from the Superintendent of Documents.

Data Delivery Facilities

There will be several different sources for 1970 census data products and related materials. As in previous censuses, the regular printed reports may be purchased directly from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402, or from the U.S. Department of Commerce field offices. Also, the full range of printed reports will be available for reference at over 1,000 Federal Depository and Census Depository Libraries across the country.

Other data products and materials, such as summary tapes, public use samples, maps, address coding guides, and software packages, will be available from data delivery facilities located at the Bureau. Some of these materials will also be available from Summary Tape Processing Centers, which are either public or private organizations.

Data delivery facilities at the Census Bureau

In the past, user requests for general tabulations presented on summary tapes or for special tabulations and other services have been met on an ad hoc basis. However, anticipating substantially increased demands for these services after 1970, the Bureau has established a central office for handling these requests. This unit, the Central Users' Service, acts as liaison between users and the appropriate subject matter and processing divisions of the Bureau. The office standardizes requests and handling procedures wherever possible and views each special project within the framework of the overall demand and workload for non-book products. Following is a list of functions performed by the Central Users' Service.

The Central Users' Service handles all requests for standard or special summary tapes, microfilm, public use samples, printouts, MEDLists, and special tabulations. It is also responsible for computer program packages available from the Bureau including DAULLIST, ADMATCH, DIME, and GRIDS. Standard ordering and billing procedures are employed in most cases.

The Service coordinates the actions of the Bureau's operating divisions in providing the customer with these census materials and special cost and time estimates when necessary. In addition to coordinating these working operations, the Central Users' Service arranges subject-matter assistance for tabulation requests that require special

demographic, geographic, or statistical consultation. The office also endeavors to combine requests for similar materials if such action is agreeable to the involved parties and will lead to a saving in time or money for the clients. By working with this type of centralized user service, the Bureau's staff can function with greater speed and accuracy in meeting the customer's informational needs.

In connection with its role as coordinator of user requests, the Central Users' Service will maintain a retrieval capability for all special projects, including information on cost, geographic and subject contents, and media. This information will enable the Central Users' Service to plan future projects more rationally and perhaps to locate data of immediate value to the user.

The Central Users' Service will also try to maintain a Summary Tape Applications Register (STAR). Users working with census summary tapes outside the Bureau will be asked to feed back information to the Bureau on their various uses. Then when a user wants to know whether anyone had worked with certain summary tape files or performed certain analyses of the data, the office can check against the Applications Register.

The Geography Division of the Bureau will also play an important role in meeting the needs of those who plan to use data from the 1970 census. Census maps, essential for working with small-area data, are available from the Geography Division at a nominal cost. (See Chart B, page 47 for detailed information on maps).

Data facilities outside the Federal Government

A major component of the 1970 census data delivery facilities will be based in the user community itself. Some of the users of the 1960 census summary tapes developed sufficient skills in tape use and had the resources and interest to assist other people in the use of the summary tapes. This assistance took the form of providing other users with copies of the summary tapes, displays of the data from their own tapes, and calculations and aggregations based on summary tapes.

The Bureau recognized that these groups were performing a valuable service. They were forerunners of the Summary Tape Processing Centers which are being established around the country to help meet user needs in connection with the 1970 census data. Many census data users, interested in data from summary tapes, may find it advantageous to use the services of

a Summary Tape Processing Center rather than purchase and manipulate the tapes themselves.

The Bureau is recognizing organizations which intend to offer services to 1970 census data users. As a general rule, a Summary Tape Processing Center will buy tape reels of one or more data files for the State in which it is located, its region, or, in a few cases, the whole country. Some centers will do only simple data retrieval and tape copying from summary tapes; others will prepare analytical reports or provide consultation services as well. Producing "packed" tapes, which reduce the number of tape reels required for a data file, is an important service offered by some centers.

The Bureau of the Census is in no sense "franchising" processing centers and it neither controls nor certifies their activities. Any legitimate organization, public or private, may be recognized. It may perform services on a profit or nonprofit basis for a selected group of

data users or the general public. There is no limit to the number of processing centers that may be recognized in a particular area. A listing of the centers is maintained by the Bureau and is available to anyone on request. Further information on the Summary Tape Processing Center concept and on requirements for recognition as a center are contained in Summary Tape User Memorandum No. 10 (Revised).

There is the likelihood that some libraries will purchase census summary tapes from the Bureau or a Summary Tape Processing Center and maintain the tapes for the use of their patrons. Data services might range from tape copying to statistical analysis. While the Bureau has no program to provide tapes free of charge to libraries, it will furnish a variety of tape-related materials to libraries which participate in the Summary Tape Information Library program. Libraries with tape holdings may also be recognized as Summary Tape Processing Centers.

