

## Appendix A.—AREA CLASSIFICATIONS

USUAL PLACE OF RESIDENCE .	App-1
URBAN AND RURAL RESIDENCE .....	App-1
Definition .....	App-1
Farm-nonfarm residence .....	App-1
Extended cities .....	App-1
COUNTIES .....	App-2
MINOR CIVIL DIVISIONS (TOWNS) .....	App-2
PLACES .....	App-2
Incorporated places .....	App-2
Unincorporated places .....	App-2
URBANIZED AREAS .....	App-2
STANDARD METROPOLITAN STATISTICAL AREAS .....	App-3
STANDARD CONSOLIDATED AREAS .....	App-4

### USUAL PLACE OF RESIDENCE

In accordance with census practice dating back to 1790, each person enumerated in the 1970 census was counted as an inhabitant of his usual place of residence, which is generally construed to mean the place where he lives and sleeps most of the time. This place is not necessarily the same as his legal residence, voting residence, or domicile. In the vast majority of cases, however, the use of these different bases of classification would produce substantially the same statistics although there may be appreciable differences for a few areas.

The implementation of this practice has resulted in the establishing of residence rules for certain categories of persons whose usual place of residence is not immediately clear. Furthermore, this practice means that persons were not always counted as residents of the place where they happened to be found by the census enumerators. Persons without a usual place of residence were, however, counted where they

were enumerated. Detailed information on residence rules is given in the 1970 Population Census PC(1)-A reports.

### URBAN AND RURAL RESIDENCE

**Definition.**—Urban housing comprises all housing units in urbanized areas and in places of 2,500 inhabitants or more outside urbanized areas. More specifically, urban housing consists of all housing units in (a) places of 2,500 inhabitants or more incorporated as cities, villages, boroughs (except Alaska), and towns (except in the New England States, New York, and Wisconsin), but excluding those housing units in the rural portions of extended cities; (b) unincorporated places of 2,500 inhabitants or more; and (c) other territory, incorporated or unincorporated, included in urbanized areas. Housing units not classified as urban constitute rural housing. Information on the historical development of the urban-rural definition appears in the 1970 Population Census PC(1)-A reports.

**Farm-nonfarm residence.**<sup>1</sup>—Statistics by farm-nonfarm residence are given in chapter B of this report. In rural areas, occupied housing units are subdivided into rural-farm housing, which comprises all rural units on farms, and rural-nonfarm housing, which comprises the remaining rural units. Occupied housing units are classified as farm units if they are located on places of 10 or more acres from which sales of farm products amounted to \$50 or more in 1969, or on places of less than 10 acres from which sales of farm products amounted to \$250 or more in 1969. (See facsimiles of questionnaire items H17 and H18 and

<sup>1</sup>See chapter B correction note.

instructions on pages App-14 and App-16.) Occupied units in rural territory which do not meet the definition for farm housing are classified as non-farm. All vacant units in rural areas also are classified as nonfarm.

**Extended cities.**—Over the 1960-1970 decade there has been an increasing trend toward the extension of city boundaries to include territory essentially rural in character. Examples are city-county consolidations such as the creation of the city of Chesapeake, Virginia from South Norfolk city and Norfolk County and the extension of Oklahoma City, Oklahoma, into five counties. The classification of all the housing in such cities as urban would include in the urban category housing units in areas which are primarily rural in character. In order to separate these units from those in the closely settled portions of such cities, the Bureau of the Census examined patterns of population density and classified a portion or portions of each such city as rural. An extended city contains one or more areas, each of at least 5 square miles in extent and with a population density of less than 100 persons per square mile according to the 1970 census. The area or areas constitute at least 25 percent of the land area of the legal city or total 25 square miles or more.

These cities—designated as extended cities—thus consist of an urban part and a rural part. When an extended city is a central city of an urbanized area or a standard metropolitan statistical area, only the urban part is considered as the central city. If the extended city is shown separately under the area, the city name is followed by the term "urban part." In tables in which the city name is not followed by this term, the figure shown is for the entire city.

**COUNTIES**

The primary divisions of the States are, in general, termed counties, but in Louisiana these divisions are known as parishes. There are no counties in Alaska. In this State, data are shown for statistical areas which are county equivalents designated as census divisions; they were developed for general statistical purposes through the cooperation of the State and the Census Bureau. In four States (Maryland, Missouri, Nevada, and Virginia), there are one or more cities which are independent of any county organization and thus constitute primary divisions of their States.

**MINOR CIVIL DIVISIONS (TOWNS)**

Minor civil divisions are the primary political or administrative subdivisions of counties established by State law. In the New England States, there is considerably more interest in these subdivisions than is generally true elsewhere. Therefore, the reports for the New England States contain statistics for these areas (which are designated as "towns") in the tables which present data for places; the towns are interspersed with the same alphabetical order as the places and are identified by the term "town" after the name. Population information on all county subdivisions appears in the 1970 Population Census PC(1)-A and PC(1)-B reports.

**PLACES**

Two types of places are recognized in the census reports—incorporated places and unincorporated places, as defined below.

**Incorporated places.**—These are political units incorporated as cities,

boroughs, towns, and villages with the following exceptions: (a) boroughs in Alaska and (b) towns in the New England States, New York, and Wisconsin. Boroughs in Alaska are treated as county subdivisions and may include one or more incorporated places. The towns in the New England States, New York, and Wisconsin are minor civil divisions similar to the townships found in other States and not necessarily thickly settled centers of population such as the cities, boroughs, towns, and villages in other States. Similarly, in New Jersey and Pennsylvania, where some townships possess powers and functions similar to those of incorporated places, the townships are not classified as "incorporated places." Thus, some minor civil divisions which are "incorporated" in one legal sense of the word are not regarded by the Census Bureau as "incorporated places." Without this restriction all of the towns in the New England States, New York, and Wisconsin and the townships in New Jersey and Pennsylvania would have to be counted as incorporated places without any consideration of the nature of population settlement. The densely settled portions of some are recognized as unincorporated places or as part of an urbanized area.

In Hawaii, there are no incorporated places in the sense of a functioning local governmental unit. The State, however, has recognized places and established boundaries for them. Such places are treated as incorporated in the 1970 census.

The 1960 population figure for an incorporated place applies to the area of the place at the time of the 1960 census. Hence, the indicated change in population over the decade reflects the effect of any annexations or detachments. In order to permit an analysis

of the relative importance of population growth within the old boundaries and of population added in annexed territory, table 8 for incorporated places of 2,000 inhabitants or more in 1960 has been included in the 1970 Population Census PC(1)-A report for this State. No data are available on detachments from incorporated places.

**Unincorporated places.**—As in the 1950 and 1960 censuses, the Census Bureau has delineated boundaries for closely settled population centers without corporate limits. Each place so delineated possesses a definite nucleus of residences and has its boundaries drawn to include, if feasible, all the surrounding closely settled area. Outside urbanized areas, those unincorporated places with a population of 1,000 or more are presented in the census reports in the same manner as incorporated places of equal size. Within urbanized areas, unincorporated places are shown only if they have 5,000 inhabitants or more and there was an expression of local interest in their recognition.

Unincorporated places are identified with the letter "U." Unincorporated place boundaries change with changes in the settlement pattern; a place which has the same name in 1970 as in previous decades does not necessarily have the same boundaries. Information on modifications in the delineation of unincorporated places introduced in the 1970 census appears in the 1970 Population Census PC(1)-A reports.

**URBANIZED AREAS**

The major objective of the Census Bureau in delineating urbanized areas is to provide a better separation of urban and rural housing in the vicinity

of the larger cities. An urbanized area consists of a central city, or cities, and surrounding closely settled territory. The specific criteria for the delineation of an urbanized area are as follows:

- 1a. A central city of 50,000 inhabitants or more in 1960, in a special census conducted by the Census Bureau since 1960, or in the 1970 census; or
- b. Twin cities, i.e., cities with contiguous boundaries and constituting, for general social and economic purposes, a single community with a combined population of at least 50,000, and with the smaller of the twin cities having a population of at least 15,000.
2. Surrounding closely settled territory, including the following (but excluding the rural portions of extended cities; see "urban and rural residence," above):
  - a. Incorporated places of 2,500 inhabitants or more.
  - b. Incorporated places with fewer than 2,500 inhabitants, provided that each has a closely settled area of 100 housing units or more.
  - c. Small parcels of land normally less than one square mile in area having a population density of 1,000 inhabitants or more per square mile. The areas of large nonresidential tracts devoted to such urban land uses as railroad yards, airports, factories, parks, golf courses, and cemeteries are excluded in computing the population density.
  - d. Other similar small areas in unincorporated territory with lower population density provided that they serve
    - to eliminate enclaves, or
    - to close indentations in the

urbanized areas of one mile or less across the open end, or  
 —to link outlying enumeration districts of qualifying density that are not more than 1½ miles from the main body of the urbanized area.

The 1970 criteria are essentially the same as those used in 1960 with two exceptions. The extended city concept is new for 1970. Secondly, in 1960, towns in the New England States, townships in New Jersey and Pennsylvania, and counties elsewhere, which were classified as urban in accordance with specific criteria, were included in the contiguous urbanized areas. In 1970, only those portions of towns and townships in these States that met the rules followed in defining urbanized areas elsewhere in the United States are included.

All housing units in an urbanized area are classified as urban. The title of an urbanized area is limited to three names and normally lists the largest city first and the other qualifying cities in size order.<sup>2</sup> This order is in many cases based on 1960 population because most names were fixed before the 1970 counts were available. For the other cities to be listed in the title, they must have (a) 250,000 inhabitants or more or (b) at least one-third the population of the largest city and a population of 25,000 or more (except in the case of the small twin cities).

There is generally one urbanized area in each standard metropolitan

<sup>2</sup>The four exceptions are:  
 New York, N.Y.—Northeastern New Jersey—New York, Newark, Jersey City, Paterson, Clifton, and Passaic.  
 Chicago, Ill.—Northwestern Indiana—Chicago, Gary, Hammond, and East Chicago.  
 Los Angeles-Long Beach—Los Angeles, Long Beach, Anaheim, Santa Ana, and Garden Grove.  
 San Francisco-Oakland—San Francisco, Oakland, and Vallejo.

statistical area. Sometimes, however, there are two because there exists another qualifying city with 50,000 inhabitants or more whose surrounding urban fringe is separated from the urban fringe of the larger central city or cities. (The Chicago metropolitan area has three urbanized areas wholly or partly within it.) In other cases, a single urbanized area covers portions of two or more standard metropolitan statistical areas. One metropolitan area (New London-Groton-Norwich, Conn.) has no urbanized area.

#### STANDARD METROPOLITAN STATISTICAL AREAS

The Bureau of the Census recognizes 243 standard metropolitan statistical areas (SMSA's) in the United States and 4 in Puerto Rico, making a total of 247 in the 1970 census. These include the 231 SMSA's as defined and named in the Bureau of the Budget publication, **Standard Metropolitan Statistical Areas: 1967**, U.S. Government Printing Office, Washington, D.C. 20402. Since 1967, 16 SMSA's have been added, of which 2 were defined in January 1968 and an additional 14 were defined in February 1971 on the basis of the results of the 1970 census. Changes in SMSA boundaries or titles made after February 1971 are not recognized in this series of reports. SMSA's are defined by the Office of Management and Budget (formerly Bureau of the Budget).

Except in the New England States, a standard metropolitan statistical area is a county or group of contiguous counties which contains at least one city of 50,000 inhabitants or more, or "twin cities" with a combined population of at least 50,000. In addition to the county, or counties, containing such a city or cities, contiguous

counties are included in an SMSA if, according to certain criteria, they are socially and economically integrated with the central city. In a few SMSA's where portions of counties outside the SMSA as defined in 1967 were annexed to the central city, the population living in those counties is not considered part of the SMSA or the central city. In the New England States, SMSA's consist of towns and cities instead of counties. Each SMSA must include at least one central city, and the complete title of an SMSA

identifies the central city or cities. For a detailed description of the criteria used in defining SMSA's, see the Bureau of the Budget publication cited above.

#### STANDARD CONSOLIDATED AREAS

In view of the special importance of the metropolitan complexes around New York and Chicago, the Nation's two largest cities, several contiguous SMSA's and additional counties that

do not appear to meet the formal integration criteria but do have strong interrelationships of other kinds have been combined into the New York-Northeastern New Jersey and the Chicago-Northwestern Indiana Standard Consolidated Areas, respectively. The former consists of Middlesex and Somerset Counties in New Jersey and the following SMSA's: New York, Newark, Jersey City, and Paterson-Clifton-Passaic. The latter consists of the following SMSA's: Chicago and Gary-Hammond-East Chicago.

## Appendix B.—DEFINITIONS AND EXPLANATIONS OF SUBJECT CHARACTERISTICS

<b>GENERAL</b> .....	App-5
Self-enumeration and census questionnaire .....	App-5
Comparability with 1960 data ..	App-5
<b>LIVING QUARTERS</b> .....	App-6
Housing units .....	App-6
Group quarters .....	App-6
Rules for mobile homes, hotels, rooming houses, etc .....	App-6
Institutions .....	App-7
Year-round housing units .....	App-7
<b>OCCUPANCY AND VACANCY CHARACTERISTICS</b> .....	App-7
Occupied housing units .....	App-7
Population in housing units .....	App-7
Race .....	App-7
Spanish heritage .....	App-7
Tenure .....	App-7
Year moved into unit .....	App-8
Vacant housing units .....	App-8
Vacancy status .....	App-8
Homeowner vacancy rate .....	App-8
Rental vacancy rate .....	App-8
Duration of vacancy .....	App-8
<b>UTILIZATION CHARACTERISTICS</b> .....	App-9
Persons .....	App-9
Rooms .....	App-9
Persons per room .....	App-9
Bedrooms .....	App-9
<b>STRUCTURAL AND PLUMBING CHARACTERISTICS</b> .....	App-9
Direct access .....	App-9
Complete kitchen facilities .....	App-9
Basement .....	App-9
Year structure built .....	App-9
Units in structure .....	App-9
Elevator in structure .....	App-10
Plumbing facilities .....	App-10
Complete bathrooms .....	App-10
Source of water .....	App-10
Sewage disposal .....	App-10
<b>EQUIPMENT, FUELS, AND APPLIANCES</b> .....	App-10
Heating equipment .....	App-10

Air conditioning .....	App-11
Automobiles available .....	App-11
Telephone .....	App-11
Fuels used for house heating, water heating, and cooking .....	App-11
Clothes washing machine .....	App-11
Clothes dryer .....	App-11
Dishwasher .....	App-11
Home food freezer .....	App-11
Television .....	App-11
Battery-operated radio .....	App-12
Owned second home .....	App-12
<b>FINANCIAL CHARACTERISTICS</b> .....	App-12
Value .....	App-12
Contract rent .....	App-12
Gross rent .....	App-12
<b>FACSIMILES</b> .....	App-13
Housing Pages in the 1970 Census Questionnaires .....	App-13
Respondent Instructions for the Housing Questions in the 1970 Census .....	App-16

### GENERAL

Self-enumeration and census questionnaire.—As stated in the introductory text of this report, the 1970 census was conducted primarily through self-enumeration. Furthermore, census takers were instructed to read the questions directly from the questionnaire in their telephone and personal visit interviews. The questionnaire pages containing the housing questions asked on a 100-percent basis and the additional questions asked on a sample basis, as well as the page of the respondent instruction sheet which relates to these questions, are reproduced on pages App-13 to App-16. The definitions and explanations given below for each subject are, to a considerable extent, drawn from various

technical and procedural materials used in the collection of the data. This material helped the enumerative personnel to understand more fully the intent of each question and thus to resolve problem or unusual cases. Also included is certain explanatory information to assist the user in the proper utilization of the statistics.

**Comparability with 1960 data.**—Although the 1970 data are generally comparable with the data collected in 1960, certain changes have been introduced. The 1960 inquiry regarding owner occupancy has been subdivided to show a separate category for co-operatives and condominiums in 1970. The 1960 question on cooking equipment was broadened in 1970 to cover "complete kitchen facilities"; i.e., an installed sink with piped water, a range or cookstove, and a mechanical refrigerator. On the other hand, the 1960 question on condition of housing unit (i.e., sound, deteriorating, or delapidated) was eliminated because of serious problems with response reliability.

Items which were added to the 1970 questionnaire are dishwasher and owned second home. The 1960 inquiry on television has been subdivided to provide separate information on television sets which can receive UHF broadcasts. The 1970 inquiry on radios is limited to battery-operated sets including car radios, whereas the 1960 inquiry covered radio sets of all kinds located in the unit.

There have also been changes in the scope of some of the tabulations. Data on characteristics of housing units are limited in 1970 to year-round units because of the difficulty of obtaining reliable information for vacant units

held for seasonal occupancy or for migratory labor. This report does, however, show total 1970 counts, including these two types of units. The tabulations on value and contract rent refer to slightly different sets of housing units in 1970 than in 1960. Summarized generally, the difference is that the 1970 data exclude units on places of 10 acres or more whereas the 1960 data exclude units on farms; more specific information can be obtained by comparing the value and rent definitions in the present report with those in 1960 Housing Census Volume I.

Data on elevator in structure, water supply, and sewage disposal were collected for all geographic areas in 1970. In 1960, statistics on elevator in structure were collected only for large places; that is, places which had a population of 50,000 or more in 1950 or in an interim census. Data on water supply and sewage disposal were not collected in 1960 in places which had a population of 50,000 or more.

Separate data on a number of subjects are presented for occupied units with Negro head of household. In 1960, this type of tabulation related to the total of all household heads other than white; Negro household heads constituted 95 percent of this total in 1960 for the Nation as a whole, but this proportion varied widely among areas.

Separate data are also shown in this report for housing units occupied by heads of Spanish heritage, that is, household heads of Spanish language or Spanish surname in five Southwestern States (Arizona, California, Colorado, New Mexico, and Texas), heads of Puerto Rican birth or parentage in New York, New Jersey, and Pennsylvania, and heads of Spanish language in all other States. In 1960,

household heads of Spanish surname were identified in the five Southwestern States and Puerto Rican heads of households were identified in all other States. More information on the 1970 definition is given in this report and in the 1970 Population Census Series PC(1)-C reports; the 1960 definition is more fully explained in the 1960 Census of Housing Volume I reports.

#### LIVING QUARTERS

Living quarters are classified in the census as either housing units or group quarters. Usually, living quarters are in structures intended for residential use (e.g., a one-family home, apartment house, hotel or motel, boarding house, mobile home or trailer, etc.). Living quarters may also be in structures intended for nonresidential use (e.g., the rooms in a warehouse where a watchman lives), as well as in tents, caves, old railroad cars, etc.

**Housing units.**—A housing unit is a house, an apartment, a group of rooms, or a single room occupied or intended for occupancy as separate living quarters. Separate living quarters are those in which the occupants do not live and eat with any other persons in the structure and which have either (1) direct access from the outside of the building or through a common hall or (2) complete kitchen facilities for the exclusive use of the occupants. The occupants may be a single family, one person living alone, two or more families living together, or any other group of related or unrelated persons who share living arrangements (except as described in the section on group quarters). For vacant units, the criteria of separateness, direct access, and complete kitchen facilities for exclusive use are applied to the in-

tended occupants, whenever possible. If the information cannot be obtained, the criteria are applied to the previous occupants. Both occupied and vacant housing units are included in the housing inventory, except that mobile homes, trailers, tents, caves, boats, railroad cars, and the like, are included only if they are occupied.

**Group quarters.**—Group quarters are living arrangements for institutional inmates or for other groups containing five or more persons not related to the persons in charge. Group quarters are located most frequently in institutions, boarding houses, military barracks, college dormitories, fraternity and sorority houses, hospitals, monasteries, convents, and ships. A house or apartment is considered group quarters if it is shared by the person in charge and five or more persons unrelated to him, or if there is no person in charge, by six or more unrelated persons. Information on the housing characteristics of group quarters was not collected in the census.

**Rules for mobile homes, hotels, rooming houses, etc.**—Mobile homes or trailers, tents, boats, or railroad cars are not enumerated if vacant, used only for business, or used only for vacations.

Occupied rooms or suites of rooms in hotels, motels, and similar places are classified as housing units only when occupied by permanent residents; i.e., persons who consider the hotel as their usual place of residence or have no usual place of residence elsewhere. Vacant rooms or suites of rooms are classified as housing units only in those hotels, motels, and similar places in which 75 percent or more of the accommodations are occupied by permanent residents.

If any of the occupants in a rooming or boarding house live and eat separately from everyone else in the building and have either direct access or complete kitchen facilities for exclusive use, their quarters are classified as separate housing units. The remaining quarters are combined. If the combined quarters contain four or fewer roomers unrelated to the head, they are classified as one housing unit; if the combined quarters contain five or more roomers unrelated to the head or person in charge, they are classified as group quarters. In a dormitory, residence hall, or similar place, living quarters of the supervisory staff and other employees are separate housing units if they satisfy the housing unit criteria; other living quarters are considered group quarters.

**Institutions.**—Living quarters of staff personnel are separate housing units if they satisfy the housing unit criteria. Other living quarters are considered group quarters.

**Year-round housing units.**—Data on housing characteristics are limited to year-round housing units; i.e., all occupied units plus vacant units which are intended for year-round use. Vacant units intended for seasonal occupancy and vacant units held for migratory labor are excluded because it is difficult to obtain reliable information for them. Counts of the total housing inventory, however, are given for each area presented in this report.

#### OCCUPANCY AND VACANCY CHARACTERISTICS

**Occupied housing units.**—A housing unit is classified as occupied if a person or group of persons is living in it at the time of enumeration or if the

occupants are only temporarily absent — for example, on vacation. However, if the persons staying in the unit have their usual place of residence elsewhere, the unit is classified as vacant.

A household consists of all the persons who occupy a housing unit. By definition, therefore, the count of occupied housing units is the same as the count of households in the 1970 Census of Population reports. In some cases, however, there may be small differences in the counts resulting from processing procedures.

**Population in housing units.**—“Population in housing units” is the total population less those persons living in group quarters. “Population per occupied unit” is computed by dividing the population living in housing units by the number of occupied housing units. For 1970, these ratios are also shown separately for the population in owner- and in renter-occupied units.

**Race.**—The classification by race shown here refers to the race of the head of the household occupying the housing unit. Figures on tenure are given separately for white and Negro heads of households; units with household heads of other races are included in the total and may be derived by subtracting the sum of white and Negro from the total. More detailed characteristics of units with Negro head of household are presented in separate tables. The concept of race as used by the Census Bureau does not denote clear-cut scientific definitions of biological stock. The data represent essentially self-classification by people according to the race with which they identify themselves.

**Spanish heritage.**—The inquiries in the 1970 census permit the identification

of housing units occupied by heads of Spanish heritage by various means: birthplace, birthplace of parents, language, and surname. The specific types of identification are given below. A more detailed explanation is given in the 1970 Population Census PC(1)-C reports.

**Puerto Rican birth or parentage.**—Household heads of Puerto Rican birth or parentage are identified in the three Middle Atlantic States: New York, New Jersey, and Pennsylvania.

**Spanish language or Spanish surname.**—In five Southwestern States — Arizona, California, Colorado, New Mexico, and Texas — household heads of Spanish language or Spanish surname are identified. (A household head is classified as of Spanish language if the head or his wife reported Spanish as his or her mother tongue; i.e., the language spoken at home when the person was a child.)

**Spanish language.**—In all other States and the District of Columbia, household heads of Spanish language (as defined above) are identified.

**Tenure.**—(See facsimiles of questionnaire item H9 and instructions on pages App-13 and App-16.) A housing unit is “owner occupied” if the owner or co-owner lives in the unit, even if it is mortgaged or not fully paid for. A cooperative or condominium unit is “owner occupied” only if the owner or co-owner lives in it. All other occupied units are classified as “renter occupied,” including units rented for cash rent and those occupied without payment of cash rent.

**Year moved into unit.**—Data on year moved into unit are based on the information reported for the head of the household. The question refers to the year of latest move. Thus, if the head moved back into a unit he had previously occupied, the year of his latest move was to be reported; if he moved from one apartment to another in the same building, the year he moved into his present unit was to be reported. The intent is to establish the year the present occupancy by the head began. The year the head moves is not necessarily the same year other members of the household move, although in the great majority of cases the entire household moves at the same time.

**Vacant housing units.**—A housing unit is vacant if no one is living in it at the time of enumeration, unless its occupants are only temporarily absent. In addition, a vacant unit may be one which is occupied entirely by persons who have a usual residence elsewhere.

New units not yet occupied are classified as vacant housing units if construction has reached a point where all exterior windows and doors are installed and final usable floors are in place. Vacant units are excluded if unfit for human habitation; that is, if the roof, walls, windows, or doors no longer protect the interior from the elements, or if there is positive evidence (such as a sign on the house or in the block) that the unit is to be demolished or is condemned. Also excluded are quarters being used entirely for nonresidential purposes, such as a store or an office, or quarters used for the storage of business supplies or inventory, machinery, or agricultural products.

**Vacancy status.**—(See facsimile of questionnaire item C on page App-13.)

Vacant housing units are classified in this report as either "seasonal and migratory" or "year-round." "Seasonal" units are intended for occupancy during only certain seasons of the year. Included are units intended for recreational use, such as beach cottages and hunting cabins, and vacant units held for herders and loggers. "Migratory" units are vacant units held for occupancy by migratory labor employed in farm work during the crop season. "Year-round" vacant housing units are available or intended for occupancy at any time of the year. A unit in a resort area which is usually occupied on a year-round basis is considered year-round. A unit used only occasionally throughout the year is also considered year-round.

"Year-round" vacant units are subdivided as follows:

**For sale only.**—Vacant year-round units "for sale only" also include vacant units in a cooperative or condominium building if the individual units are offered for sale only.

**For rent.**—Vacant year-round units "for rent" also include vacant units offered either for rent or for sale.

**Rented or sold, awaiting occupancy.**—If any money rent has been paid or agreed upon but the new renter has not moved in as of the date of enumeration, or if the unit has recently been sold but the new owner has not yet moved in, the year-round vacant unit is classified as "rented or sold, awaiting occupancy."

**Held for occasional use.**—This category consists of vacant year-round units which are held for weekend or other occasional use throughout the year. The intent of this question

was to identify homes reserved by their owners as second homes. Because of the difficulty of distinguishing between this category and seasonal vacancies, it is possible that some "second homes" are classified as "seasonal" and vice versa. (See also discussion of "Owned second home" in section on "Equipment, Fuels, and Appliances.")

**Other vacant.**—If a vacant year-round unit does not fall into any of the classifications specified above, it is classified as "other vacant." For example, this category includes units held for settlement of an estate, units held for occupancy by a caretaker or janitor, and units held for personal reasons of the owner.

The data on "held for occasional use" and "other vacant" units shown in chapter B may differ from the comparable figures in chapter A because some chapter A tabulations from which these figures were obtained did not include an edit to eliminate certain response inconsistencies.

**Homeowner vacancy rate.**—The homeowner vacancy rate is the number of year-round vacant units for sale as a percent of the total homeowner inventory; i.e., all owner-occupied units and year-round vacant units for sale.

**Rental vacancy rate.**—The rental vacancy rate is the number of year-round vacant units for rent as a percent of the total rental inventory; i.e., all renter-occupied units and all year-round vacant units for rent.

**Duration of vacancy.**—(See facsimile of questionnaire item D on page

App-13.) The statistics on duration of vacancy refer to the length of time (in months) from the date the last occupants moved from the unit to the date of enumeration. The data, therefore, do not provide a direct measure of the total length of time units remain vacant. For newly constructed units which have never been occupied, the duration of vacancy is counted from the date construction was completed. For recently converted or merged units, the time is reported from the date conversion or merger was completed.

#### UTILIZATION CHARACTERISTICS

**Persons.**—All persons occupying the housing unit are counted. These persons include not only occupants related to the head of the household but also any lodgers, roomers, boarders, partners, wards, foster children, and resident employees who share the living quarters of the household head. The data on "persons" show the number of housing units occupied by the specified number of persons.

**Rooms.**—(See facsimiles of questionnaire item H4 and instructions on pages App-13 and App-16.) The statistics on "rooms" are in terms of the number of housing units with specified number of rooms. The intent of this question is to count the number of whole rooms used for living purposes. As stated on the questionnaire and instruction sheet, bathrooms, foyers, utility rooms, unfinished attics or basements, etc., are not included in the count of rooms.

**Persons per room.**—"Persons per room" is computed for each occupied unit by dividing the number of persons

in the unit by the number of rooms in the unit. The figures shown refer, therefore, to the number of housing units having the specified ratio of persons per room.

**Bedrooms.**—(See facsimile of questionnaire item H26 on page App-15.) The number of bedrooms in the unit is the count of rooms used mainly for sleeping, even if also used for other purposes. Rooms reserved for sleeping such as guest rooms, even though used infrequently, are counted as bedrooms. On the other hand, rooms used mainly for other purposes, even though used also for sleeping, such as a living room with a hideaway bed, are not considered bedrooms. A housing unit consisting of only one room, such as a one-room efficiency apartment, is classified, by definition, as having no bedroom.

#### STRUCTURAL AND PLUMBING CHARACTERISTICS

**Direct access.**—(See facsimiles of questionnaire item H2 and instructions on pages App-13 and App-16.) A housing unit is regarded as having direct access if there is (1) a direct entrance from the outdoors, or (2) an entrance from a hall, lobby, or vestibule which is usually used by the occupants of more than one unit or by the general public.

**Complete kitchen facilities.**—(See facsimiles of questionnaire item H3 and instructions on pages App-13 and App-16.) A unit has complete kitchen facilities when it has all three of the following: (1) an installed sink with piped water, (2) a range or cookstove, and (3) a mechanical refrigerator.

All kitchen facilities must be located in the structure. They need not be in the same room. Quarters with

only portable cooking equipment are not considered as having a range or cookstove. An icebox is not included as a mechanical refrigerator.

The kitchen facilities are for the exclusive use of the occupants (shown on the questionnaire as "for this household only") when they are used only by the occupants of one housing unit, including lodgers or other unrelated persons living in the unit. When a structure consists of only one housing unit, all equipment located inside the structure is classified, by definition, for exclusive use.

**Basement.**—(See facsimiles of questionnaire item H8 and instructions on pages App-13 and App-16.) Statistics on basements are presented in terms of the number of housing units located in structures built with a basement, on a concrete slab, or in another way.

**Year structure built.**—(See facsimile of questionnaire item H15 on page App-14.) Year structure built refers to when the building was first constructed, not when it was remodeled, added to, or converted. The figures relate to the number of units in structures built during the specified periods and in existence at the time of enumeration.

**Units in structure.**—(See facsimiles of questionnaire items A, H10a, and H16 and instructions on pages App-13, 14, and 16.) In the determination of the number of units in a structure, all housing units, both occupied and vacant, were counted. The statistics are presented in terms of the number of housing units in structures of specified type and size, not in terms of the number of residential structures.

A structure is a separate building that either has open space on all sides

or is separated from other structures by dividing walls that extend from ground to roof. Structures containing only one housing unit are further classified as detached or attached (as explained on the questionnaire and instruction sheet).

Mobile homes and trailers are shown as a separate category. When one or more rooms have been added to a mobile home or trailer it is classified as a one-family house. If, however, only a porch or shed has been added, it is still counted as a mobile home or trailer.

The data on units in structure shown in chapter B of this report may differ from the comparable figures in chapter A. The answers to item H16 on the sample questionnaire made it possible in the chapter B tabulations to correctly classify as mobile homes or trailers those which were incorrectly classified as one-family houses or as housing units in multiunit structures in the chapter A tabulations.

**Elevator in structure.**—(See facsimiles of questionnaire item H24 and instructions on pages App-15 and App-16.) Statistics on elevator in structure are presented in terms of the number of housing units in structures with four stories or more which have a passenger elevator. Units are in a "walk-up" structure of four stories or more if the structure has no passenger elevator or if the only elevator service is for freight.

**Plumbing facilities.**—(See facsimiles of questionnaire items H5, H6, and H7 and instructions on pages App-13 and App-16.) The category "with all plumbing facilities" consists of units which have hot and cold piped water inside the structure as well as a flush

toilet and a bathtub or shower inside the structure for the exclusive use of the occupants of the unit. Units "lacking only hot water" are those which have toilet and bathing facilities inside the structure for the exclusive use of the occupants, but have only cold piped water. Units "lacking other plumbing facilities" may or may not have hot water, but lack either toilet or bathing facilities or both. Also included in this category are units having no piped water inside the structure, and units with toilet or bathing facilities which are also for the use of the occupants of other housing units. The combination of "lacking only hot water" and "lacking other plumbing facilities" is presented as "lacking some or all plumbing facilities."

Data also are shown separately for each of the plumbing facilities: piped water in structure, flush toilet, and bathtub or shower.

**Complete bathrooms.**—(See facsimile of questionnaire item H21 on page App-14.) A housing unit is classified as having a complete bathroom if it has a room with a flush toilet and bathtub or shower for the exclusive use of the occupants of the unit and a wash basin, as well as piped hot water in the structure. (Although the instructions on the questionnaire do not specify that a complete bathroom must have hot water, this requirement was applied during the processing of the data in an edit combining the items on complete bathrooms and piped water in structure.) A half bathroom has either a flush toilet or a bathtub or shower for exclusive use, but does not have all the facilities for a complete bathroom.

The category "none or also used by another household" consists of units with no bathroom facilities, units with

only a half bathroom, and units with bathroom facilities which are also for the use of the occupants of other housing units.

**Source of water.**—(See facsimiles of questionnaire item H19 and instructions on pages App-14 and App-16.) "A public system or private company" refers to a common source supplying running water to six or more housing units. The water may be supplied by a city, county, water district, or private water company, or it may be obtained from a well which supplies six or more housing units. If a well provides water for five or fewer housing units, it is classified as an "individual well." Water sources such as springs, creeks, rivers, etc., are included in the "other" category.

**Sewage disposal.**—(See facsimiles of questionnaire item H20 and instructions on pages App-14 and App-16.) A "public sewer" is connected to a city, county, sanitary district, neighborhood, or subdivision sewer system. It may be operated by a governmental body or private organization. A "septic tank or cesspool" is an underground tank or pit used for disposal of sewage. Small sewage treatment plants which in some localities are called neighborhood septic tanks are classified as public sewers. Units for which sewage is disposed of in some other way are included in the "other" category.

#### EQUIPMENT, FUELS, AND APPLIANCES

**Heating equipment.**—(See facsimiles of questionnaire item H14 and instructions on pages App-14 and App-16.) "Steam or hot water" refers to a

central heating system in which heat from steam or hot water is delivered through radiators or other outlets. "Warm-air furnace" refers to a central system which provides warm air through ducts leading to various rooms; central heat pumps are included in this category. "Built-in electric units" are permanently installed in floors, walls, or ceilings. "Room heaters with flue" include circulating heaters, convectors, radiant gas heaters, and other nonportable heaters that burn gas, oil, kerosene, or other liquid fuels, and which are connected to a flue, vent, or chimney to remove smoke and fumes. "Room heaters without flue" include any room heater (not portable) that burns gas, oil, or kerosene which is not connected to a flue, vent, or chimney. "Fireplaces, stoves, or portable heaters" also include room heaters that burn coal or wood.

For vacant units from which the heating equipment had been removed, the equipment used by the last occupants was to be reported.

**Air conditioning.**—(See facsimiles of questionnaire item H22 and instructions on pages App-14 and App-16.) Air conditioning is defined as the cooling of air by a refrigeration unit; excluded are evaporative coolers, fans, or blowers which are not connected to a refrigeration unit. A central system is a central installation which air conditions the entire housing unit. In an apartment building, a central system may cool all apartments in the building, each apartment may have its own central system, or there may be several systems, each providing central air conditioning for a group of apartments. A central installation with individual room controls is a central air conditioning system. A room unit is an

individual air conditioner which is installed in a window or an outside wall and is generally intended to cool one room, although it may sometimes be used to cool more than one room.

**Automobiles available.**—(See facsimiles of questionnaire item H23 and instructions on pages App-14 and App-16.) Statistics on automobiles available represent the number of passenger automobiles, including station wagons, which are owned or regularly used by any member of the household and which are ordinarily kept at home. Taxicabs, pickups, or larger trucks were not to be counted. The figures include leased automobiles and company-owned automobiles kept at home. The statistics, therefore, do not reflect the number of automobiles privately owned or the number of households owning automobiles.

**Telephone.**—(See facsimiles of questionnaire item H1 and instructions on pages App-13 and App-16.) A unit is classified as having a telephone if there is a telephone available to the occupants of the unit for receiving calls. The telephone may be located outside or inside the housing unit, and one telephone may serve the occupants of several units. The number of housing units with a telephone available, therefore, does not indicate the number of telephones installed in homes.

**Fuels used for house heating, water heating, and cooking.**—(See facsimiles of questionnaire item H25 and instructions on pages App-15 and App-16.) "Utility gas," shown on the questionnaire as "gas from underground pipes serving the neighborhood," is piped in from a central system. "Bottled, tank, or LP gas" is stored in tanks which are refilled or exchanged when empty.

"Fuel oil, kerosene, etc." includes fuel oil, kerosene, gasoline, alcohol, and other combustible liquids. "Other fuel" includes any fuel not separately listed on the questionnaire.

**Appliances.**—(See facsimiles of questionnaire items H27, H28, and H29 and instructions on pages App-15 and App-16.)

**Clothes washing machine.**— "Wringer or spinner" describes a power-operated machine which requires handling of the laundry between washing and rinsing. "Automatic or semiautomatic" describes a machine that washes, rinses, and damp dries in the same tub; washer-dryer combinations are included in this group.

**Clothes dryer.**—A clothes dryer is a mechanical appliance in which clothes are dried by heated air. A unit with a washer-dryer combination is classified as having a clothes dryer (as well as an automatic clothes washing machine).

**Dishwasher.**—This category includes both built-in and portable dishwashers.

**Home food freezer.**—A home food freezer is an appliance, separate from the refrigerator, designed for freezing food and for storing frozen food.

**Television.**—Sets of all kinds are included in the count — floor, table, built-in, portable, and combination with radio or phonograph, whether "black and white" or "color." Television sets which can receive UHF broadcasts are also shown in a separate category.

**Battery-operated radio.**—As stated on the questionnaire, car radios, transistor radios, and other battery-operated radio sets are included.

**Owned second home.**—(See facsimiles of questionnaire item H30 and instructions on pages App-15 and App-16.) A second home may be a single-family house, vacation cottage, hunting cabin, ski lodge, etc., which is owned and held for use sometime during the year by the owner or members of his household. Second homes may also be owned in partnership with members of a different household. The figures include second homes which are sometimes rented or leased on a short-term basis to other persons but are principally held for the owner's occasional use during the year.

The statistics refer to the number of households that own (one or more) second homes. The data, therefore, do not reflect the number of owned second homes. (See also discussion of vacant units "held for occasional use" in section on "Occupancy and Vacancy Characteristics.")

#### FINANCIAL CHARACTERISTICS

**Value.**—(See facsimiles of questionnaire item H11 and instructions on pages App-13 and App-16.) Value is the respondent's estimate of how

much the property (house and lot) would sell for if it were for sale. For vacant units, value is the price asked for the property. The statistics on value are shown only for one-family houses on less than 10 acres without a commercial establishment or medical office on the property. The value tabulations also exclude mobile homes and trailers and units in cooperatives and condominiums.

As stated in the section on "units in structure," certain mobile homes and trailers were incorrectly classified as one-family houses in the chapter A tabulations of this report. In chapter B, the number of specified owner-occupied (one-family) units and the value tabulations correctly exclude the misclassified mobile homes and trailers; these tend to be at the lower end of the value distribution. As a result, the data on value shown in chapter B may differ from the comparable statistics in chapter A.

**Contract rent.**—(See facsimiles of questionnaire item H12 and instructions on pages App-13 and App-16.) Contract rent is the monthly rent agreed to, or contracted for, regardless of any furnishings, utilities, or services that may be included. For vacant units, rent is the amount asked for the unit at the time of enumeration. The statistics on rent exclude one-family houses on ten acres or more. Renter units occupied without payment of cash

rent are shown separately as "no cash rent" in the rent tabulations.

Chapter B also provides medians for two kinds of vacant-for-rent units — those for which the rent includes payment for all utilities and fuel, and those for which the rent includes only some or none of the utilities and fuel. See section on "Gross rent" below for discussion of utilities and fuel.

The data on contract rent shown in chapter B may differ from the comparable figures in chapter A because in the tabulation of the chapter A figures some units were incorrectly included in the "less than \$30" category.

**Gross rent.**—(See facsimiles of questionnaire items H12 and H13 and instructions on pages App-13, 14, and 16.) The computed rent termed "gross rent" is the contract rent plus the estimated average monthly cost of utilities (electricity, gas, water) and fuels (oil, coal, kerosene, wood, etc.), if these items are paid for by the renter (or paid for him by someone else, such as a relative, welfare agency, or friend) in addition to rent. Thus, gross rent is intended to eliminate differentials which result from varying practices with respect to the inclusion of utilities and fuel as part of the rental payment. The estimated costs of water and fuels are reported on a yearly basis but they are converted to monthly figures in the computation process.

FACSIMILES OF THE HOUSING PAGES IN THE 1970 CENSUS QUESTIONNAIRES  
(Questions on this page appeared on all questionnaires)

<p><b>A.</b> How many living quarters, occupied and vacant, are at this address?</p> <p><input type="radio"/> One</p> <p><input type="radio"/> 2 apartments or living quarters</p> <p><input type="radio"/> 3 apartments or living quarters</p> <p><input type="radio"/> 4 apartments or living quarters</p> <p><input type="radio"/> 5 apartments or living quarters</p> <p><input type="radio"/> 6 apartments or living quarters</p> <p><input type="radio"/> 7 apartments or living quarters</p> <p><input type="radio"/> 8 apartments or living quarters</p> <p><input type="radio"/> 9 apartments or living quarters</p> <p><input type="radio"/> 10 or more apartments or living quarters</p> <p><input type="radio"/> This is a mobile home or trailer</p>	<p><b>H9.</b> Are your living quarters—</p> <p><input type="radio"/> Owned or being bought by you or by someone else in this household? <i>Do not include cooperatives and condominiums here.</i></p> <p><input type="radio"/> A cooperative or condominium which is owned or being bought by you or by someone else in this household?</p> <p><input type="radio"/> Rented for cash rent?</p> <p><input type="radio"/> Occupied without payment of cash rent?</p>	<p><b>FOR CENSUS ENUMERATOR'S USE ONLY</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 50%;"><b>H4.</b> Block number</th> <th style="width: 50%;"><b>H5.</b> Serial number</th> </tr> <tr> <td>0 0 0 0</td> <td>0 0 0 0</td> </tr> <tr> <td>1 0 0 0</td> <td>1 0 0 0</td> </tr> <tr> <td>2 0 0 0</td> <td>2 0 0 0</td> </tr> <tr> <td>3 0 0 0</td> <td>3 0 0 0</td> </tr> <tr> <td>4 0 0 0</td> <td>4 0 0 0</td> </tr> <tr> <td>5 0 0 0</td> <td>5 0 0 0</td> </tr> <tr> <td>6 0 0 0</td> <td>6 0 0 0</td> </tr> <tr> <td>7 0 0 0</td> <td>7 0 0 0</td> </tr> <tr> <td>8 0 0 0</td> <td>8 0 0 0</td> </tr> <tr> <td>9 0 0 0</td> <td>9 0 0 0</td> </tr> </table>	<b>H4.</b> Block number	<b>H5.</b> Serial number	0 0 0 0	0 0 0 0	1 0 0 0	1 0 0 0	2 0 0 0	2 0 0 0	3 0 0 0	3 0 0 0	4 0 0 0	4 0 0 0	5 0 0 0	5 0 0 0	6 0 0 0	6 0 0 0	7 0 0 0	7 0 0 0	8 0 0 0	8 0 0 0	9 0 0 0	9 0 0 0
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<p><i>Answer these questions for your living quarters</i></p> <p><b>H1.</b> Is there a telephone on which people in your living quarters can be called?</p> <p><input type="radio"/> Yes — What is the number? _____</p> <p style="text-align: right; margin-right: 50px;"><i>Phone number</i></p>	<p><b>H10a.</b> Is this building a one-family house?</p> <p><input type="radio"/> Yes, a one-family house</p> <p><input type="radio"/> No, a building for 2 or more families or a mobile home or trailer</p>	<p><b>B.</b> Type of unit or quarters</p> <p><u>Occupied</u></p> <p><input type="radio"/> First form</p> <p><input type="radio"/> Continuation</p> <p><u>Vacant</u></p> <p><input type="radio"/> Regular</p> <p><input type="radio"/> Usual residence elsewhere</p> <p><u>Group quarters</u></p> <p><input type="radio"/> First form</p> <p><input type="radio"/> Continuation</p>																						
<p><b>H2.</b> Do you enter your living quarters—</p> <p><input type="radio"/> Directly from the outside or through a common or public hall?</p> <p><input type="radio"/> Through someone else's living quarters?</p>	<p><b>H10b.</b> If "Yes"—Is this house on a place of 10 acres or more, or is any part of this property used as a commercial establishment or medical office?</p> <p><input type="radio"/> Yes, 10 acres or more</p> <p><input type="radio"/> Yes, commercial establishment or medical office</p> <p><input type="radio"/> No, none of the above</p>	<p><i>For a vacant unit, also fill C, D, A, H2 to H8, and H10 to H12</i></p>																						
<p><b>H3.</b> Do you have complete kitchen facilities? Complete kitchen facilities are a sink with piped water, a range or cook stove, and a refrigerator.</p> <p><input type="radio"/> Yes, for this household only</p> <p><input type="radio"/> Yes, but also used by another household</p> <p><input type="radio"/> No complete kitchen facilities for this household</p>	<p><b>H11.</b> If you live in a one-family house which you own or are buying—What is the value of this property; that is, how much do you think this property (house and lot) would sell for if it were for sale?</p> <p><input type="radio"/> Less than \$5,000</p> <p><input type="radio"/> \$5,000 to \$7,499</p> <p><input type="radio"/> \$7,500 to \$9,999</p> <p><input type="radio"/> \$10,000 to \$12,499</p> <p><input type="radio"/> \$12,500 to \$14,999</p> <p><input type="radio"/> \$15,000 to \$17,499</p> <p><input type="radio"/> \$17,500 to \$19,999</p> <p><input type="radio"/> \$20,000 to \$24,999</p> <p><input type="radio"/> \$25,000 to \$34,999</p> <p><input type="radio"/> \$35,000 to \$49,999</p> <p><input type="radio"/> \$50,000 or more</p>	<p><b>C.</b> Vacancy status</p> <p><u>Year round—</u></p> <p><input type="radio"/> For rent</p> <p><input type="radio"/> For sale only</p> <p><input type="radio"/> Rented or sold, not occupied</p> <p><input type="radio"/> Held for occasional use</p> <p><input type="radio"/> Other vacant</p> <p><input type="radio"/> Seasonal</p> <p><input type="radio"/> Migratory</p>																						
<p><b>H4.</b> How many rooms do you have in your living quarters? Do not count bedrooms, porches, balconies, foyers, halls, or half-rooms.</p> <p><input type="radio"/> 1 room</p> <p><input type="radio"/> 2 rooms</p> <p><input type="radio"/> 3 rooms</p> <p><input type="radio"/> 4 rooms</p> <p><input type="radio"/> 5 rooms</p> <p><input type="radio"/> 6 rooms</p> <p><input type="radio"/> 7 rooms</p> <p><input type="radio"/> 8 rooms</p> <p><input type="radio"/> 9 rooms or more</p>	<p><b>H12.</b> Answer this question if you pay rent for your living quarters.</p> <p>a. If rent is paid by the month—</p> <p>What is the monthly rent?</p> <p>Write amount here → \$ _____ .00 (Nearest dollar)</p> <p>and</p> <p>Fill one circle</p> <p><input type="radio"/> Less than \$30</p> <p><input type="radio"/> \$30 to \$39</p> <p><input type="radio"/> \$40 to \$49</p> <p><input type="radio"/> \$50 to \$59</p> <p><input type="radio"/> \$60 to \$69</p> <p><input type="radio"/> \$70 to \$79</p> <p><input type="radio"/> \$80 to \$89</p> <p><input type="radio"/> \$90 to \$99</p> <p><input type="radio"/> \$100 to \$119</p> <p><input type="radio"/> \$120 to \$149</p> <p><input type="radio"/> \$150 to \$199</p> <p><input type="radio"/> \$200 to \$249</p> <p><input type="radio"/> \$250 to \$299</p> <p><input type="radio"/> \$300 or more</p>	<p><b>D.</b> Months vacant</p> <p><input type="radio"/> Less than 1 month</p> <p><input type="radio"/> 1 up to 2 months</p> <p><input type="radio"/> 2 up to 6 months</p> <p><input type="radio"/> 6 up to 12 months</p> <p><input type="radio"/> 1 year up to 2 years</p> <p><input type="radio"/> 2 years or more</p>																						
<p><b>H5.</b> Is there hot and cold piped water in this building?</p> <p><input type="radio"/> Yes, hot and cold piped water in this building</p> <p><input type="radio"/> No, only cold piped water in this building</p> <p><input type="radio"/> No piped water in this building</p>	<p>b. If rent is not paid by the month—</p> <p>What is the rent, and what period of time does it cover?</p> <p>\$ _____ .00 per _____ (Nearest dollar) (Week, half-month, year, etc.)</p>	<p><b>C/O</b> <input type="radio"/> <input type="radio"/></p>																						

FACSIMILES OF THE HOUSING PAGES IN THE 1970 CENSUS QUESTIONNAIRES—Con.  
(Percent indicates sample size)

<p><b>H13.</b> Answer question H13 if you pay rent for your living quarters. In addition to the rent entered in H12, do you also pay for—</p> <p><b>a. Electricity?</b></p> <p><input type="radio"/> Yes, average monthly cost is → \$ _____ .00 Average monthly cost</p> <p><input type="radio"/> No, included in rent</p> <p><input type="radio"/> No, electricity not used</p> <hr/> <p><b>b. Gas?</b></p> <p><input type="radio"/> Yes, average monthly cost is → \$ _____ .00 Average monthly cost</p> <p><input type="radio"/> No, included in rent</p> <p><input type="radio"/> No, gas not used</p> <hr/> <p><b>c. Water?</b></p> <p><input type="radio"/> Yes, yearly cost is → \$ _____ .00 Yearly cost</p> <p><input type="radio"/> No, included in rent or no charge</p> <hr/> <p><b>d. Oil, coal, kerosene, wood, etc.?</b></p> <p><input type="radio"/> Yes, yearly cost is → \$ _____ .00 Yearly cost</p> <p><input type="radio"/> No, included in rent</p> <p><input type="radio"/> No, these fuels not used</p>	<p><b>H19.</b> Do you get water from—</p> <p><input type="radio"/> A public system (city water department, etc.) or private company?</p> <p><input type="radio"/> An individual well?</p> <p><input type="radio"/> Some other source (a spring, creek, river, cistern, etc.)?</p> <hr/> <p><b>H20.</b> Is this building connected to a public sewer?</p> <p><input type="radio"/> Yes, connected to public sewer</p> <p><input type="radio"/> No, connected to septic tank or cesspool</p> <p><input type="radio"/> No, use other means</p> <hr/> <p><b>H21.</b> How many bathrooms do you have? <i>A complete bathroom is a room with flush toilet, bathtub or shower, and wash basin with piped water.</i> <i>A half bathroom has at least a flush toilet or bathtub or shower, but does not have all the facilities for a complete bathroom.</i></p> <p><input type="radio"/> No bathroom, or only a half bathroom</p> <p><input type="radio"/> 1 complete bathroom</p> <p><input type="radio"/> 1 complete bathroom, plus half bath(s)</p> <p><input type="radio"/> 2 complete bathrooms</p> <p><input type="radio"/> 2 complete bathrooms, plus half bath(s)</p> <p><input type="radio"/> 3 or more complete bathrooms</p> <hr/> <p><b>H22.</b> Do you have air-conditioning?</p> <p><input type="radio"/> Yes, 1 individual room unit</p> <p><input type="radio"/> Yes, 2 or more individual room units</p> <p><input type="radio"/> Yes, a central air-conditioning system</p> <p><input type="radio"/> No</p> <hr/> <p><b>H23.</b> How many passenger automobiles are owned or regularly used by members of your household? <i>Count company cars kept at home.</i></p> <p><input type="radio"/> None</p> <p><input type="radio"/> 1 automobile</p> <p><input type="radio"/> 2 automobiles</p> <p><input type="radio"/> 3 automobiles or more</p>
<p><b>H14.</b> How are your living quarters heated? <i>Fill one circle for the kind of heat you use most.</i></p> <p><input type="radio"/> Steam or hot water system</p> <p><input type="radio"/> Central warm air furnace with ducts to the individual rooms, or central heat pump</p> <p><input type="radio"/> Built-in electric units (permanently installed in wall, ceiling, or baseboard)</p> <p><input type="radio"/> Floor, wall, or pipeless furnace</p> <p><input type="radio"/> Room heaters with flue or vent, burning gas, oil, or kerosene</p> <p><input type="radio"/> Room heaters without flue or vent, burning gas, oil, or kerosene (not portable)</p> <p><input type="radio"/> Fireplaces, stoves, or portable room heaters of any kind</p> <p>In some other way—Describe → _____</p> <p><input type="radio"/> None, unit has no heating equipment</p>	<p><b>H15.</b> About when was this building originally built? Mark when the building was first constructed, not when it was remodeled, added to, or converted.</p> <p><input type="radio"/> 1969 or 1970      <input type="radio"/> 1950 to 1959</p> <p><input type="radio"/> 1965 to 1968      <input type="radio"/> 1940 to 1949</p> <p><input type="radio"/> 1960 to 1964      <input type="radio"/> 1939 or earlier</p>
<p><b>H16.</b> Which best describes this building? <i>Include all apartments, flats, etc., even if vacant.</i></p> <p><input type="radio"/> A one-family house detached from any other house</p> <p><input type="radio"/> A one-family house attached to one or more houses</p> <p><input type="radio"/> A building for 2 families</p> <p><input type="radio"/> A building for 3 or 4 families</p> <p><input type="radio"/> A building for 5 to 9 families</p> <p><input checked="" type="radio"/> A building for 10 to 19 families</p> <p><input type="radio"/> A building for 20 to 49 families</p> <p><input type="radio"/> A building for 50 or more families</p> <p><input type="radio"/> A mobile home or trailer</p> <p>Other— Describe _____</p>	
<p><b>H17.</b> Is this building—</p> <p><input type="radio"/> On a city or suburban lot?— Skip to H19</p> <p><input type="radio"/> On a place of less than 10 acres?</p> <p><input type="radio"/> On a place of 10 acres or more?</p>	
<p><b>H18.</b> Last year, 1969, did sales of crops, livestock, and other farm products from this place amount to—</p> <p><input type="radio"/> Less than \$50 (or None)      <input type="radio"/> \$2,500 to \$4,999</p> <p><input type="radio"/> \$50 to \$249      <input type="radio"/> \$5,000 to \$9,999</p> <p><input type="radio"/> \$250 to \$2,499      <input type="radio"/> \$10,000 or more</p>	

15 and 5 percent

15 percent

FACSIMILES OF THE HOUSING PAGES IN THE 1970 CENSUS QUESTIONNAIRES—Con.  
(Percent indicates sample size)

<p><b>H13.</b> Answer question H13 if you pay rent for your living quarters. In addition to the rent entered in H12, do you also pay for—</p> <p><b>a. Electricity?</b></p> <p><input type="radio"/> Yes, average monthly cost is → \$ _____ .00 Average monthly cost</p> <p><input type="radio"/> No, included in rent</p> <p><input type="radio"/> No, electricity not used</p> <hr/> <p><b>b. Gas?</b></p> <p><input type="radio"/> Yes, average monthly cost is → \$ _____ .00 Average monthly cost</p> <p><input type="radio"/> No, included in rent</p> <p><input type="radio"/> No, gas not used</p> <hr/> <p><b>c. Water?</b> <input checked="" type="checkbox"/></p> <p><input type="radio"/> Yes, yearly cost is → \$ _____ .00 Yearly cost</p> <p><input type="radio"/> No, included in rent or no charge</p> <hr/> <p><b>d. Oil, coal, kerosene, wood, etc.?</b></p> <p><input type="radio"/> Yes, yearly cost is → \$ _____ .00 Yearly cost</p> <p><input type="radio"/> No, included in rent</p> <p><input type="radio"/> No, these fuels not used</p> <hr/> <p><b>H14.</b> How are your living quarters heated? Fill <u>one</u> circle for the kind of heat you use most.</p> <p><input type="radio"/> Steam or hot water system</p> <p><input type="radio"/> Central warm air furnace with ducts to the individual rooms, or central heat pump</p> <p><input type="radio"/> Built-in electric units (permanently installed in wall, ceiling, or baseboard) <input checked="" type="checkbox"/></p> <p><input type="radio"/> Floor, wall, or pipeless furnace</p> <p><input type="radio"/> Room heaters with flue or vent, burning gas, oil, or kerosene</p> <p><input type="radio"/> Room heaters without flue or vent, burning gas, oil, or kerosene (not portable)</p> <p><input type="radio"/> Fireplaces, stoves, or portable room heaters of any kind</p> <p>In some other way—Describe → _____</p> <p><input type="radio"/> None, unit has no heating equipment</p> <hr/> <p><b>H15.</b> About when was this building originally built? Mark when the building was first constructed, not when it was remodeled, added to, or converted.</p> <p><input type="radio"/> 1969 or 1970      <input type="radio"/> 1950 to 1959</p> <p><input type="radio"/> 1965 to 1968      <input checked="" type="radio"/> 1940 to 1949</p> <p><input type="radio"/> 1960 to 1964      <input type="radio"/> 1939 or earlier</p> <hr/> <p><b>H16.</b> Which best describes this building? Include all apartments, flats, etc., even if vacant.</p> <p><input type="radio"/> A one-family house detached from any other house</p> <p><input type="radio"/> A one-family house attached to one or more houses</p> <p><input type="radio"/> A building for 2 families</p> <p><input type="radio"/> A building for 3 or 4 families</p> <p><input type="radio"/> A building for 5 to 9 families</p> <p><input checked="" type="radio"/> A building for 10 to 19 families</p> <p><input type="radio"/> A building for 20 to 49 families</p> <p><input type="radio"/> A building for 50 or more families</p> <p><input type="radio"/> A mobile home or trailer</p> <p>Other— Describe _____</p> <hr/> <p><b>H17.</b> Is this building—</p> <p><input type="radio"/> On a city or suburban lot?— Skip to H24</p> <p><input type="radio"/> On a place of less than 10 acres?</p> <p><input type="radio"/> On a place of 10 acres or more?</p> <hr/> <p><b>H18.</b> Last year, 1969, did sales of crops, livestock, and other farm products from this place amount to—</p> <p><input type="radio"/> Less than \$50 (or None) <input checked="" type="checkbox"/> <input type="radio"/> \$2,500 to \$4,999</p> <p><input type="radio"/> \$50 to \$249      <input type="radio"/> \$5,000 to \$9,999</p> <p><input type="radio"/> \$250 to \$2,499      <input type="radio"/> \$10,000 or more</p>	<p><b>H24a.</b> How many stories (floors) are in this building?</p> <p><input type="radio"/> 1 to 3 stories</p> <p><input type="radio"/> 4 to 6 stories</p> <p><input type="radio"/> 7 to 12 stories</p> <p><input checked="" type="radio"/> 13 stories or more</p> <hr/> <p><b>b.</b> If 4 or more stories— Is there a passenger elevator in this building?</p> <p><input type="radio"/> Yes    <input type="radio"/> No</p> <hr/> <p><b>H25a.</b> Which fuel is used most for cooking?</p> <p>Gas { From underground pipes serving the neighborhood. <input type="radio"/> Coal or coke <input type="radio"/></p> <p>      Bottled, tank, or LP ..... <input type="radio"/> Wood ..... <input type="radio"/></p> <p>Electricity ..... <input type="radio"/> Other fuel .. <input type="radio"/></p> <p>Fuel oil, kerosene, etc. .... <input type="radio"/> No fuel used <input type="radio"/></p> <hr/> <p><b>b.</b> Which fuel is used most for house heating?</p> <p>Gas { From underground pipes serving the neighborhood. <input type="radio"/> Coal or coke <input type="radio"/></p> <p>      Bottled, tank, or LP ..... <input type="radio"/> Wood ..... <input type="radio"/></p> <p>Electricity ..... <input type="radio"/> Other fuel .. <input type="radio"/></p> <p>Fuel oil, kerosene, etc. .... <input type="radio"/> No fuel used <input type="radio"/></p> <hr/> <p><b>c.</b> Which fuel is used most for water heating?</p> <p>Gas { From underground pipes serving the neighborhood. <input type="radio"/> Coal or coke <input type="radio"/></p> <p>      Bottled, tank, or LP ..... <input type="radio"/> Wood ..... <input type="radio"/></p> <p>Electricity ..... <input type="radio"/> Other fuel .. <input type="radio"/></p> <p>Fuel oil, kerosene, etc. .... <input type="radio"/> No fuel used <input type="radio"/></p> <hr/> <p><b>H26.</b> How many bedrooms do you have? Count rooms used mainly for sleeping even if used also for other purposes.</p> <p><input type="radio"/> No bedroom      <input type="radio"/> 3 bedrooms</p> <p><input type="radio"/> 1 bedroom      <input checked="" type="radio"/> 4 bedrooms</p> <p><input type="radio"/> 2 bedrooms      <input type="radio"/> 5 bedrooms or more</p> <hr/> <p><b>H27a.</b> Do you have a clothes washing machine?</p> <p><input type="radio"/> Yes, automatic or semi-automatic</p> <p><input type="radio"/> Yes, wringer or separate spinner</p> <p><input type="radio"/> No</p> <hr/> <p><b>b.</b> Do you have a clothes dryer?</p> <p><input type="radio"/> Yes, electrically heated</p> <p><input type="radio"/> Yes, gas heated</p> <p><input checked="" type="radio"/> No</p> <hr/> <p><b>c.</b> Do you have a dishwasher (built-in or portable)?</p> <p><input type="radio"/> Yes    <input type="radio"/> No</p> <hr/> <p><b>d.</b> Do you have a home food freezer which is separate from your refrigerator?</p> <p><input type="radio"/> Yes    <input type="radio"/> No</p> <hr/> <p><b>H28a.</b> Do you have a television set? Count only sets in working order.</p> <p><input type="radio"/> Yes, one set</p> <p><input type="radio"/> Yes, two or more sets</p> <p><input type="radio"/> No</p> <hr/> <p><b>b.</b> If "Yes"— Is any set equipped to receive UHF broadcasts, that is, channels 14 to 83?</p> <p><input type="radio"/> Yes    <input checked="" type="radio"/> No</p> <hr/> <p><b>H29.</b> Do you have a battery-operated radio? Count car radios, transistors, and other battery-operated sets in working order or needing only a new battery for operation.</p> <p><input type="radio"/> Yes, one or more    <input type="radio"/> No</p> <hr/> <p><b>H30.</b> Do you (or any member of your household) own a second home or other living quarters which you occupy sometime during the year?</p> <p><input type="radio"/> Yes    <input type="radio"/> No</p>
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15 and 5 percent

5 percent

FACSIMILE OF THE RESPONDENT INSTRUCTIONS FOR THE HOUSING QUESTIONS IN THE 1970 CENSUS

If you live in an apartment building and you do not know the answers to questions H14, H15, H16, and H25, ask the person who runs your building (for example, the manager, rental agent, superintendent, janitor, etc.).

- A. Mark only one circle. This address means the house or building number where your living quarters are located.
- H1. Mark **Yes** and enter telephone number, even if the telephone is in another apartment or building.
- H2. Mark the second circle only if you **must** go through someone else's living quarters to get to your own.
- H3. The kitchen sink, stove, and refrigerator do **not** have to be in the same room.  
**Also used by another household** means that someone else who lives in the same building, but is not a member of your household, also uses the equipment. Mark this circle also if the occupants of living quarters now vacant would also use the equipment.
- H4. Count only whole rooms used for living purposes, such as living rooms, dining rooms, kitchens, bedrooms, finished recreation rooms, family rooms, etc. Do **not** count kitchenettes, strip or pullman kitchens; utility rooms; or unfinished attics, basements, or other space used for storage.
- H5. Mark **hot water** even if you have it only part of the time.
- H6, H7. See instructions for H3 for meaning of **Also used by another household**.
- H8. A house has a **basement** if there is enclosed space in which persons can walk upright under all or part of the building. A house on a **concrete slab** has no basement and no air or crawl space below it. A house built in **another way** is one directly on the ground or resting on a foundation or posts to provide crawl space.
- H9. **Owned or being bought** means that the living quarters are owned outright or are mortgaged. Also mark **Owned or being bought** if the living quarters are owned but the land is rented.  
 Mark **Rented for cash rent** if any money rent is paid. Rent may be paid by persons who are not members of your household.  
**Occupied without payment of cash rent** includes, for example, a parsonage, a house or apartment provided free of rent by the owner, or a house or apartment occupied by a janitor or caretaker in exchange for services.
- H10. A **commercial establishment** is easily recognized from the outside; for example, a grocery store or barber shop. A **medical office** is a doctor's or dentist's office regularly visited by patients. If your house is on a place of 10 acres or more and also contains a commercial establishment or medical office, mark **Yes, 10 acres or more**.
- H11. Include the value of the house, the land it is on, and any other structures on the same property. If the house is owned but the land is rented, estimate the combined value of the house and the land.
- H12. Report the rent agreed to or contracted for, even if the furnishings, utilities, or services are included.  
 a. If you pay rent by the month, write in the amount of rent and fill one circle.  
 b. If rent is **not** paid by the month, answer both parts of b. For example, \$20 per week, \$1,500 per year, etc.
- H13. If exact costs are not known, estimate as closely as possible. Report amounts even if bills are unpaid or are paid by someone else. If the bills include utilities or fuel used also by another apartment or a business establishment, estimate the amounts for your own living quarters. If gas and electricity are billed together, enter the combined amount on the electricity line and bracket ( ) the two utilities.
- H14. This question refers to the type of heating equipment and not to the fuel used.  
 A **heat pump** is sometimes known as a **reverse cycle** system.  
 A **floor, wall, or pipeless furnace** delivers warm air to the room right above the furnace or to the room(s) on one or both sides of the wall in which the furnace is installed. These furnaces do not have ducts leading to other rooms.  
 Any heater that you plug into an electric outlet should be counted as a **portable room heater**--not a built-in electric unit.
- H16. Count all occupied and vacant living quarters in the house or building, but not stores or office space.  
**Detached** means there is open space on all sides, or the house is joined only to a shed or garage. **Attached** means that the house is joined to another house or building by at least one wall which goes from ground to roof.
- H17. A **city or suburban lot** is usually located in a city, a community, or any built-up area outside a city or community, and is not larger than the house and yard. All living quarters in apartment buildings, including garden-type apartments in the city or suburbs, are considered on a **city or suburban lot**.  
 A **place** is a farm, ranch, or any other property, other than a city or suburban lot, on which this residence is located.
- H18. Fill the circle for the total (gross) amount of money received from the sales of crops, livestock, and other farm products produced on this place during the calendar year 1969.
- H19. If a well provides water for six or more houses or apartments, mark a **public system**. If a well provides water for five or fewer houses or apartments, mark an **individual well**.
- H20. A **public sewer** is operated by a government body or a private organization. A **septic tank or cesspool** is an underground tank or pit used for disposal of sewage.
- H22. Count only equipment with a refrigeration unit to cool the air. Mark an **individual room unit** for air conditioners which are installed in a window or in an outside wall and are used to cool one or more rooms. Mark a **central system** for a central installation which cools the entire house or apartment.
- H23. Do not count cars permanently out of working order. Also do not count taxicabs, pickups, or larger trucks.
- H24a. Do not count a basement as a story.  
 b. Do not count elevators used only for freight.
- H25. **Gas from underground pipes** is piped in from a central system such as a public utility company or a municipal government. **Bottled, tank, or LP gas** is stored in tanks which are refilled or exchanged when empty. **Other fuel** includes any fuel not separately listed, for example, purchased steam, fuel briquettes, waste material, etc.
- H27. Mark the **Yes** circle whether you own the appliance or it is provided as part of the equipment in your living quarters. Do **not** count coin-operated equipment or appliances in storage.
- H28. Count any set **equipped** to receive UHF (ultra high frequency) broadcasts, even if there are no such broadcasts in your area. Include sets that can be tuned directly to channels 14 to 83 and sets that receive UHF broadcasts by means of a converter. Also include sets that receive UHF broadcasts through a community antenna (CATV) or master antenna.
- H29. A **battery-operated radio** is one that can be run on batteries and does not need to be plugged into an electric socket. Include battery-operated sets owned by any member of the household.
- H30. Do **not** count vacation trailers, tents, or boats. Also do **not** count second homes used only for investment purposes.

## Appendix C.—ACCURACY OF THE DATA

SOURCES OF ERROR .....	App-17
EDITING OF UNACCEPTABLE DATA .....	App-17
ALLOCATION TABLES .....	App-17
SAMPLE DESIGN .....	App-17
RATIO ESTIMATION .....	App-19
SAMPLING VARIABILITY .....	App-20

### SOURCES OF ERROR

Human and mechanical errors occur in any mass statistical operation such as a decennial census. Errors during the data collection phase can include failure to obtain required information from respondents, obtaining incorrect or inconsistent information, and recording information in the wrong place or incorrectly. Errors can also occur during the field review of the enumerator's work, the clerical handling of the questionnaires, the manual editing and coding operations, and the various stages of the electronic processing of the material. Careful efforts are made in every census to keep the errors in each step at an acceptably low level. Quality control and check measures are utilized throughout the census operation. As was done for the 1950 and 1960 censuses, evaluative material on many aspects of the 1970 census will be published as soon as the appropriate data are accumulated and analyzed. A major concern in the evaluation work is to ascertain, insofar as possible, the degree of completeness of the count of both population and housing units.

### EDITING OF UNACCEPTABLE DATA

The objective of the processing operation is to produce a set of statistics that describes the Nation's housing as

accurately and clearly as possible. To meet this objective, certain unacceptable entries were edited.

Whenever information was missing, an allocation procedure was used to assign an entry, thereby eliminating the need for a "not reported" category in the tabulations. The assignment was based on related information reported for the housing unit or on information reported for a similar unit in the neighborhood. For example, if tenure for an occupied unit was omitted but a rental amount was reported, the computer automatically edited tenure to "rented for cash rent." On the other hand, if the unit was reported as rented but the amount of rent was missing, the computer automatically assigned the rent that was reported for the preceding renter-occupied unit.

A similar procedure was used when the information reported for an item was inconsistent with other information reported for the unit. For example, if a housing unit was enumerated as having no piped water but having both a bathtub (or shower) and flush toilet for the exclusive use of the occupants of the unit, the computer edited water supply to "hot and cold water," a category considered to be consistent with the reported bathing and toilet facilities.

Specific tolerances were established for the number of computer allocations that would be permitted. If the number of corrections was beyond tolerance, the questionnaires in which the errors occurred were clerically reviewed. If it was found that the errors resulted from damaged questionnaires, from improper micro-filming, from faulty reading by FOSDIC of undamaged questionnaires, or from other types of machine failure, the questionnaires were re-processed.

### ALLOCATION TABLES

The extent of allocations for non-responses and inconsistencies is shown in tables A-1 to A-3 for the data collected on a 100-percent basis and in tables B-1 to B-3 for the items based on a sample. The base on which the percentage is computed is shown for each item. For most items, the percentages are based on all year-round housing units or occupied housing units. In some instances, the base is a specific group of units as indicated in the tables. Percentages are not shown if the item is not published for the specified areas.

### SAMPLE DESIGN

The statistics presented in chapter B, tables 31 to 83, are based on a sample of housing units, with sampling rates of 20 percent, 15 percent, and 5 percent. (The data in chapter A, tables 1 to 30, were collected on a 100-percent basis.) For the sample data collected in the 1970 census, the housing unit, including all its occupants, was the sampling unit; for persons in group quarters identified in advance of the census, it was the person. In non-mail areas, the enumerator canvassed his assigned area and listed all housing units in an address register sequentially in the order in which he first visited the units, whether or not he completed the interview. Every fifth line of the address register was designated as a sample line, and the housing units listed on these lines were included in the sample. Each enumerator was given a random line on which he was to start listing and the order of canvassing was indicated in advance, although the instructions allowed some latitude in the order of visiting addresses. In mail areas, the list of

housing units was prepared prior to Census Day either by employing commercial mailing lists corrected through the cooperation of the post office or by listing the units in a process similar to that used in non-mail areas. As in other areas, every fifth housing unit on these lists was designated to be in the sample. In group quarters, all persons were listed and every fifth person was selected for the sample; as indicated in Appendix B, information on the housing characteristics of group quarters was not collected in the census.

This 20-percent sample was subdivided into a 15-percent and a 5-percent sample by designating every fourth 20-percent sample unit as a member of the 5-percent sample. The remaining sample units became the 15-percent sample. Two types of sample questionnaires were used, one for the 5-percent and one for the 15-percent sample units. Some questions were included on both the 5-percent and 15-percent sample forms and therefore appear for a sample of 20 percent of the units in the census. Other items appeared on either the 15-percent or the 5-percent questionnaires. The sample rates for the various items appearing in chapter B are shown in table A.

Although the sampling procedure did not automatically insure an exact 20-percent sample of persons or housing units in each locality, the sample design was unbiased if carried through according to instructions; generally for larger areas the deviation from 20 percent was found to be quite small. Biases may have arisen, however, when the enumerator failed to follow his listing and sampling instructions exactly. Quality control procedures were used throughout the census process, and where there was clear evidence that the sampling procedures

were not properly followed, some enumerators' assignments were returned to the field for resampling. As shown in table C-1 of the Population Census report PC(1)-C1 for the United States, 19.4 percent of the population and 19.6 percent of the housing units tabulated were enumerated on sample questionnaires. (The PC(1)-C series of State reports shows percentages for each State.) The bases for these percentages included several classes of the

population and housing units for which no attempt at sampling was made. These were the relatively small numbers of persons and housing units (in most States, less than one percent) added to the enumeration from the post-census post office check, the various supplemental forms, and the special check of vacant units. (If these classes are excluded from the bases the respective proportions become 19.6 and 19.7 percent.) The ratio estimation pro-

TABLE A. Sample Rate for Subjects Included in Chapter B.

Subject	Sample rate (percent)	Subject	Sample rate (percent)
<b>OCCUPANCY CHARACTERISTICS</b>		<b>STRUCTURAL CHARACTERISTICS</b>	
Total housing units . . . . .	20	Complete kitchen facilities . . . . .	20
Total population . . . . .	20	Access . . . . .	20
Occupied housing units . . . . .	20	Units in structure . . . . .	20
Tenure . . . . .	20	Mobile home or trailer . . . . .	20
Race . . . . .	20	Year structure built . . . . .	20
Spanish heritage <sup>1</sup> . . . . .	15	Basement . . . . .	20
Population per occupied unit . . . . .	20	Elevator in structure . . . . .	5
Cooperative or condominium . . . . .	20		
Year moved into unit . . . . .	15	<b>EQUIPMENT, FUELS, AND APPLIANCES</b>	
<b>VACANCY CHARACTERISTICS</b>		Telephone available . . . . .	20
Vacant housing units . . . . .	20	Heating equipment . . . . .	20
Homeowner vacancy rate . . . . .	20	Air conditioning . . . . .	15
Rental vacancy rate . . . . .	20	Automobiles available . . . . .	15
Duration of vacancy . . . . .	20	Second home . . . . .	5
<b>UTILIZATION CHARACTERISTICS</b>		Fuels for house heating, water heating, and cooking . . . . .	5
Number of rooms . . . . .	20	Clothes washing machine . . . . .	5
Size of household (persons) . . . . .	20	Clothes dryer . . . . .	5
Persons per room . . . . .	20	Dishwasher . . . . .	5
Bedrooms . . . . .	5	Home food freezer . . . . .	5
<b>PLUMBING CHARACTERISTICS</b>		Television . . . . .	5
Plumbing facilities . . . . .	20	Battery-operated radio . . . . .	5
Piped water . . . . .	20		
Flush toilet . . . . .	20	<b>FINANCIAL CHARACTERISTICS</b>	
Bathtub or shower . . . . .	20	Value . . . . .	20
Complete bathrooms . . . . .	15	Contract rent . . . . .	20
Source of water . . . . .	15	Gross rent . . . . .	20
Sewage disposal . . . . .	15		

<sup>1</sup> As indicated in the "Introduction," derived figures are not presented if there are fewer than 25 units in the distribution or the base for the 20-percent sample, fewer than 33 units for the 15-percent sample, and fewer than 100 units for the 5-percent sample. However, in the tables for households with heads of Spanish heritage, the minimum base for which derived numbers are shown is determined according to the sample rate of the characteristic shown in this table.

cedure described below adjusts the sample data to reflect these classes of population and housing units.

**RATIO ESTIMATION**

The statistics based on 1970 census sample data are estimates made through the use of ratio estimation procedures which were applied separately for the 5-, 15-, and 20-percent samples. The first step in carrying through the ratio estimates was to establish the areas within which separate ratios were to be prepared. These are referred to as "weighting areas." For the 15- and 20-percent samples, the weighting areas contained a minimum population size of 2,500. The weighting areas used for the 5-percent ratio estimate were larger areas having a minimum population size of 25,000 and comprising combinations of the weighting areas used for the 15- and 20-percent samples. Weighting areas were established by a mechanical operation on the computer and were defined to conform, as nearly as possible, to areas for which tabulations are produced. Where these areas do not agree (primarily for smaller areas), there may be some differences between complete counts and sample estimates.

The ratio estimation process operated in two stages for occupied housing units, and in one stage for vacant units. The first stage for occupied units employed 18 household-type groups (the first of which was empty by definition); the second stage for occupied units used four groups: owner and renter occupied units, by race. The single stage for vacant units employed three groups: year-round vacant for sale, year-round vacant for rent, and other vacant.

**Group**

**Occupied housing units:**

**STAGE I**

*Male Head With Own Children Under 18*

- 1 1-person household
- 2 2-person household
- 3 3-person household

- 6 6-or-more-person household

*Male Head Without Own Children Under 18*

- 7-12 1-person to 6-or-more-person households

*Female Head*

- 13-18 1-person to 6-or-more-person households

**STAGE II**

*Owner Occupied*

- 19 Negro
- 20 Not Negro

*Renter Occupied*

- 21 Negro
- 22 Not Negro

**Vacant housing units:**

- 23 Year-round vacant for sale
- 24 Year-round vacant for rent
- 25 Other vacant

At each stage, for each of the occupied housing groups, the ratio of the complete count to the weighted sample count of the housing units in the group was computed and applied to the weight of each sample unit in the group. This operation was performed for each of the 18 groups in the first stage, then for the four groups in the second stage. As a rule, the weighted sample counts within each of

the 4 groups in the second stage for occupied units should agree with the complete counts for the weighting areas. Close, although not exact consistency can be expected for the 18 groups in the first stage. Similarly, the weighted sample counts within each of the 3 groups in the single stage for vacant housing units should agree with the complete counts for the weighting area.

There are some exceptions to this general rule, however. As indicated above, there may be differences between the complete counts and sample estimates when the tabulation area is not made up of whole weighting areas. Furthermore, in order to increase the reliability, a separate ratio was not computed in a group whenever certain criteria pertaining to the complete count of housing units and the magnitude of the weight were not met. For example, for the 20-percent sample the complete count of units in a group had to exceed 70 units and the ratio of the complete count to the unweighted sample count could not exceed 20. Where these criteria were not met, groups were combined in a specific order until the conditions were met. Where this occurred, consistency between the weighted sample and the complete counts would apply as indicated above for the combined group but not necessarily for each of the groups in the combination.

Each sample housing unit was assigned an integral weight to avoid the complications involved in rounding in the final tables. If, for example, the final weight for a group was 5.2, one-fifth of the units in the group (selected at random) were assigned a weight of 6 and the remaining four-fifths a weight of 5.

The estimates realize some of the gains in sampling efficiency that would

have resulted had the population been stratified into the groups before sampling. The net effect is a reduction in both the sampling error and possible bias of most statistics below what would be obtained by weighting the results of the sample by a uniform factor (e.g., by weighting the 20-percent sample results by a uniform factor of 5). The reduction in sampling error will be trivial for some items and substantial for others. A byproduct of this estimation procedure is that estimates for this sample are, in general, consistent with the complete count for the housing unit groups used in the estimation procedure. A more complete discussion of the technical aspects of these ratio estimates will be presented in a separate report.

#### SAMPLING VARIABILITY

The estimates from the 20-, 15-, and 5-percent sample tabulations are subject to sampling variability. The standard errors of these estimates can be approximated by using the data in tables B through D. The chances are about 2 out of 3 that the difference (due to sampling variability) between the sample estimate and the figure that would have been obtained from a complete count is less than the standard error. The chances are about 19 out of 20 that the difference is less than twice the standard error and about 99 out of 100 that it is less than  $2\frac{1}{2}$  times the standard error. The amount by which the estimated standard error must be multiplied to obtain other odds deemed more appropriate can be found in most statistical textbooks. The sampling errors may be obtained by using the factors shown in table D in conjunction with table B for absolute numbers and in conjunction with table C for percentages. These

tables reflect the effect of simple response variance, but not of bias arising in the collection, processing and estimation steps nor of the correlated errors enumerators introduce; estimates of the magnitude of some of these factors in the total error are being evaluated and will be published at a later date.

Table B shows approximate standard errors of estimated numbers for most statistics based on the 20-percent sample. In determining the figures for this table, some aspects of the sample design, the estimation process, and the size of the area over which the data have been compiled are ignored. Table C shows standard errors of most percentages based on the 20-percent sample. Linear interpolation in tables B and C will provide approximate results that are satisfactory for most purposes. Table D provides a factor by which the standard errors shown in tables B or C should be multiplied to adjust for the effect of the sample size (i.e., whether a 15-percent or 5-percent sample) and the effect of the estimation procedure.

To estimate the standard error for a given characteristic, locate the factor in table D for the appropriate characteristic and the sample size used to tabulate the data, and multiply this factor by the standard error found in table B or C. If an item, although collected on one sample basis, has been tabulated for a smaller sample, use the factor appropriate for the smaller sample.

The standard errors estimated from these tables are not directly applicable to differences between two sample estimates. In order to estimate the standard error of a difference, the tables are to be used somewhat differently in the three following situations:

1. For a difference between the sample figure and one based on a complete count (e.g., arising from comparisons between sample statistics for 1970 and complete-count statistics for 1960 or 1950), the standard error is identical with the standard error of the 1970 estimate alone.
2. For a difference between two sample figures (that is, one from 1970 and the other from 1960, or both from the same census year), the standard error is approximately the square root of the sum of the squares of the standard errors of each estimate considered separately. This formula will represent the actual standard error quite accurately for the difference between estimates of the same characteristic in two different areas, or for the difference between separate and uncorrelated characteristics in the same area. If, however, there is a high positive correlation between the two characteristics, the formula will overestimate the true standard error. The approximate standard error for the 1970 sample figure is derived directly from tables B through D. The standard error of a 25-percent 1960 sample figure may be obtained from the relevant 1960 census report or an approximate value may be obtained by multiplying the appropriate value in table B or C by 0.9.
3. For a difference between two sample estimates, one of which represents a subclass of the other, the tables can be used directly with the difference considered as the sample estimate.

The sampling variability of the medians presented in certain tables

APPENDIX C—Continued

(median rooms, median value, median gross rent, etc.) depends on the size of the base and on the distribution on which the median is based. An approximate method for measuring the reliability of an estimated median is to determine an interval about the estimated median such that there is a stated degree of confidence the true median lies within the interval. As the first step in estimating the upper and lower limits of the interval (that is, the confidence limits) about the median, compute one-half the number on which the median is based (designated

$N/2$ ). From table B, following the method outlined in other parts of this section, compute the standard error of an estimated number equal to  $N/2$ . Subtract this standard error from  $N/2$ . Cumulate the frequencies (in the table on which the median is based) until the total first exceeds the difference between  $N/2$  and its standard error, and by linear interpolation obtain a value corresponding to this number. In a corresponding manner, add the standard error to  $N/2$ , cumulate the frequencies in the table, and obtain a value in the table on which the median

is based corresponding to the sum of  $N/2$  and its standard error.

The chances are about 2 out of 3 that the median would lie between these two values. The range for 19 chances out of 20 and for 99 in 100 can be computed in a similar manner by multiplying the standard error by the appropriate factors before subtracting from and adding to one-half the number reporting the characteristics. Interpolation to obtain the values corresponding to these numbers gives the confidence limits for the median.

TABLE B. Approximate Standard Error of Estimated Number Based on 20-Percent Sample  
(Range of 2 chances out of 3; for factors to be applied see table D and text)

Estimated number <sup>1</sup>	Number of housing units in area <sup>2</sup>								
	1,000	10,000	25,000	100,000	250,000	1,000,000	3,000,000	5,000,000	7,000,000
50 . . . . .	15	15	15	15	15	15	15	15	15
100 . . . . .	20	20	20	20	20	20	20	20	20
250 . . . . .	30	30	30	30	30	30	30	30	30
500 . . . . .	30	45	45	45	45	45	45	45	45
1,000 . . . . .	...	60	60	65	65	65	65	65	65
2,500 . . . . .	...	90	95	100	100	100	100	100	100
5,000 . . . . .	...	100	130	140	140	140	140	140	140
10,000 . . . . .	...	...	150	190	200	200	200	200	200
15,000 . . . . .	...	...	150	230	240	240	240	240	240
25,000 . . . . .	...	...	...	270	300	310	310	320	320
50,000 . . . . .	...	...	...	320	400	440	440	440	450
75,000 . . . . .	...	...	...	270	450	520	540	540	540
100,000 . . . . .	...	...	...	...	490	600	620	630	630

<sup>1</sup>For estimated numbers larger than 100,000, the relative errors are somewhat smaller than for 100,000.

<sup>2</sup>An area is the smallest complete geographic area to which the estimate under consideration pertains. Thus, the area may be the State, city, county, standard metropolitan statistical area, urbanized area, or the urban or rural portion of the State or county. The rural-farm or rural-nonfarm units in the State or county, the Negro-occupied units, etc., do not represent complete areas.

**TABLE C. Approximate Standard Error of Estimated Percentage Based on 20-Percent Sample**  
(Range of 2 chances out of 3; for factors to be applied see table D and text)

Estimated percentage	Base of percentage						
	500	1,000	2,500	10,000	25,000	100,000	250,000
2 or 98 . . . . .	1.3	0.9	0.6	0.3	0.2	0.1	0.1
5 or 95 . . . . .	2.0	1.4	0.9	0.4	0.3	0.1	0.1
10 or 90 . . . . .	2.7	1.9	1.2	0.6	0.4	0.2	0.1
25 or 75 . . . . .	3.9	2.7	1.7	0.9	0.5	0.3	0.2
50 . . . . .	4.5	3.2	2.0	1.0	0.6	0.3	0.2

**TABLE D. Factor to be Applied to Standard Errors**

Characteristic	Sample rate (percent)	Factor <sup>1</sup>	Characteristic	Sample rate (percent)	Factor <sup>1</sup>
<b>INVENTORY</b>			<b>STRUCTURAL CHARACTERISTICS</b>		
Urban-rural residence . . . . .	20	0.3	Units in structure . . . . .	20	0.8
Farm-nonfarm residence . . . . .	20	0.9	Year structure built . . . . .	20	0.9
<b>OCCUPANCY CHARACTERISTICS</b>			Basement . . . . .	20	0.9
Negro heads of households . . . . .	20	0.9	<b>EQUIPMENT, FUELS, AND APPLIANCES</b>		
Spanish heritage <sup>1</sup> . . . . .	15	1.0	Telephone available . . . . .	20	0.5
Tenure . . . . .	20	0.2	Heating equipment . . . . .	20	0.8
<b>VACANCY CHARACTERISTICS</b>			House heating fuel . . . . .	5	2.1
Vacancy status . . . . .	20	0.8	Appliances . . . . .	5	1.8
Duration of vacancy . . . . .	20	0.9	<b>FINANCIAL CHARACTERISTICS</b>		
<b>UTILIZATION CHARACTERISTICS</b>			Value:		
Rooms . . . . .	20	1.0	Owner-occupied units . . . . .	20	1.0
Size of household (persons) . . . . .	20	0.5	Vacant for sale . . . . .	20	1.0
Persons per room . . . . .	20	0.4	Contract rent:		
Bedrooms . . . . .	5	2.2	Renter-occupied units . . . . .	20	1.0
<b>PLUMBING CHARACTERISTICS</b>			Vacant for rent . . . . .	20	1.0
Plumbing facilities . . . . .	20	1.0	Gross rent . . . . .	20	1.0
Piped water . . . . .	20	1.0	<b>ALL OTHER</b>		
Flush toilet . . . . .	20	1.0	20 percent . . . . .	20	1.0
Source of water . . . . .	15	1.0	15 percent . . . . .	15	1.2
Sewage disposal . . . . .	15	0.9	5 percent . . . . .	5	2.2

<sup>1</sup> Tabulations of housing data for households with heads of Spanish heritage are based on the 15-percent sample. For characteristics shown in this table as based on the 20-percent sample, the factor for households with heads of Spanish heritage is obtained by multiplying the appropriate factor in this table by 1.2. For characteristics shown as based on the 15-percent sample, the factor in this table can be used directly.

## Appendix D.—PUBLICATION AND COMPUTER SUMMARY TAPE PROGRAM

The results of the 1970 Census of Population and Housing are being issued in the form of printed reports, microfiche copies of the printed reports, computer summary tapes, computer printouts, and microfilm. Listed below are short descriptions of the final report series and computer tapes, as currently planned. More detailed information on this program can be obtained by writing to the Publications Distribution Section, Social and Economic Statistics Administration, Washington, D.C. 20233.

### Housing Census Reports

#### Volume I. HOUSING CHARACTERISTICS FOR STATES, CITIES, AND COUNTIES

This volume consists of 58 "parts"—number 1 for the United States, numbers 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 Islands, respectively. Each part, which is a separate clothbound book, contains two chapters designated as A and B. Each chapter (for each of the 58 areas) is issued as an individual paperbound report in two series designated as HC(1)-A and B, respectively.

##### ■ Series HC(1)-A. GENERAL HOUSING CHARACTERISTICS

Statistics on tenure, kitchen facilities, plumbing facilities, number of rooms, persons per room, units in structure, mobile home, telephone, value, contract rent, and vacancy status are presented for some or all of the following areas: States (by urban and rural residence), standard metropolitan statistical areas (SMSA's), urbanized areas, places of 1,000 inhabitants or more, and counties.

##### ■ Series HC(1)-B. DETAILED HOUSING CHARACTERISTICS

Statistics are 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 is 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 (by rural and rural-farm residence).

#### Volume II. METROPOLITAN HOUSING CHARACTERISTICS

These reports, also designated as Series HC(2), cover most of the 1970 census housing subjects in considerable detail and cross-classification. There is one report for each SMSA, presenting data for the SMSA and its central cities and places of 50,000 inhabitants or more, as well as a national summary report.

#### Volume III. BLOCK STATISTICS

One report, under the designation Series HC(3), is issued for each urbanized area showing data for individual blocks on selected housing and population subjects. The series also includes reports for the communities outside urbanized areas which have contracted with the Census Bureau to provide block statistics from the 1970 census.

#### 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, conversions, 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 and regions.

#### 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 mortgage debt, manner of acquisition of property, homeowner expenses, and other owner, property, and mortgage characteristics for the United States and regions.

#### Volume VI. ESTIMATES OF "SUBSTANDARD" HOUSING

This volume will present counts of "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.

#### Volume VII. SUBJECT REPORTS

Each report in this volume will concentrate on a particular subject. Detailed information and cross-classifications will generally be provided on a national and regional level; in some reports, data for States or SMSA's may also be shown. Among the subjects to be covered are housing characteristics by household composition, housing of minority groups and senior citizens, and households in mobile homes.

### Population Census Reports

#### Volume I. CHARACTERISTICS OF THE POPULATION

This volume will consist of 58 "parts"—number 1 for the United States, numbers 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 Islands, 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 are specially assembled and issued in a clothbound book, designated as Part A.

##### ■ Series PC(1)-A. NUMBER OF INHABITANTS

Final official population counts are presented for States, counties by urban and rural residence, SMSA's, urbanized areas, county subdivisions, all incorporated places, and unincorporated places of 1,000 inhabitants or more.

##### ■ Series PC(1)-B. GENERAL POPULATION CHARACTERISTICS

Statistics on age, sex, race, marital status, and relationship to head of household are 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. GENERAL SOCIAL AND ECONOMIC CHARACTERISTICS

Statistics are 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, employment 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 is 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.

**DETAILED CHARACTERISTICS**

These reports 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 is shown for some or all of the following areas: States (by urban, rural-nonfarm, and rural-farm residence), SMSA's, and large cities.

**Volume II.**

**SUBJECT REPORTS**

Each report in this volume, also designated as Series PC(2), 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.

**Joint Population-Housing Reports**

Series PHC(1).

**CENSUS TRACT REPORTS**

This series contains one report for each SMSA, showing data for most of the population and housing subjects included in the 1970 census.

Series PHC(2).

**GENERAL DEMOGRAPHIC TRENDS FOR METROPOLITAN AREAS, 1960 to 1970**

This series consists of one report for each State and the District of Columbia, as well as a national summary report, presenting statistics for the State and for SMSA's and their central cities and constituent counties. Comparative 1960 and 1970 data are shown on population counts by age and race and on such housing subjects as tenure, plumbing facilities, value, and contract rent.

Series PHC(3).

**EMPLOYMENT PROFILES OF SELECTED LOW-INCOME AREAS**

This series consists of 76 reports, each presenting statistics on the social and economic characteristics of the residents of a particular low-income area. The data relate to low-income neighborhoods in 51 cities and seven rural poverty areas. Each report provides statistics on employment and unemployment, education, vocational training, availability for work, job history, and income, as well as on value or rent and number of rooms in the housing unit.

**Additional Reports**

Series PHC(E).

**EVALUATION REPORTS**

This open series will present the results of the extensive evaluation program conducted as an integral part of the 1970 census program, and relating to such matters as completeness of enumeration and quality of the data on characteristics.

Series PHC(R).

**PROCEDURAL REPORTS**

This open series presents information on various administrative and methodological aspects of the 1970 census, and will include a comprehensive procedural history of the 1970 census. The first report issued focuses on the forms and procedures used in the data collection phase of the census.

**Computer Summary Tapes**

The major portion of the results of the 1970 census are produced in a set of six tabulation counts. To help meet the needs of census users, these counts are designed to provide data with much greater subject and geographic detail than it is feasible or desirable to publish in printed reports. The data so tabulated are generally available—subject to suppression of certain detail where necessary to protect confidentiality—on magnetic computer tape, printouts, and microfilm, at the cost of preparing the copy.

**First Count**—source of the PC(1)-A reports; contains about 400 cells of data on the subjects covered in the PC(1)-B and HC(1)-A reports and tabulated for each of the approximately 250,000 enumeration districts in the United States.

**Second Count**—source of the PC(1)-B, HC(1)-A, and part of the PHC(1) reports; contains about 3,500 cells of data covering the subjects in these reports and tabulated for the approximately 35,000 tracts and 35,000 county subdivisions in the United States.

**Third Count**—source of the HC(3) reports; contains about 250 cells of data on the subjects covered in the PC(1)-B and HC(1)-A reports and tabulated for approximately 1,500,000 blocks in the United States.

**Fourth Count**—source of the PC(1)-C, HC(1)-B, and part of the PHC(1) reports; contains about 13,000 cells of data covering the subjects in these reports and tabulated for the approximately 35,000 tracts and 35,000 county subdivisions in the United States; also contains about 30,000 cells of data for each county.

**Fifth Count**—contains approximately 800 cells of population and housing data for 5-digit ZIP code areas in SMSA's and 3-digit ZIP code areas outside SMSA's; the ZIP code data are available only on tape.

**Sixth Count**—source of the PC(1)-D and HC(2) reports; contains about 260,000 cells of data covering the subjects in these reports and tabulated for States, SMSA's, and large cities.

The tapes are generally organized on a State basis. To use the First Count and Third Count tapes, it is necessary to purchase the appropriate enumeration district and block maps.

The term "cells" used herein to indicate the scope of subject content of the several counts refers to each figure or statistic in the tabulation for a specific geographic area. For example, in the Third Count, there are six cells for a cross-classification of race by sex: three categories of race (white, Negro, other race) by two categories of sex (male, female).

In addition to the above-mentioned summary tapes, the Census Bureau makes available for purchase certain sample tape files containing population and housing characteristics as shown on individual census records. These files contain no names or addresses, and the geographic identification is sufficiently broad to protect confidentiality. There are six files, each containing a 1-percent national sample of persons and housing units. Three of the files are drawn from the population covered by the census 15-percent sample and three from the population in the census 5-percent sample. Each of these three files provides a different type of geographic information: One identifies individual large SMSA's and, for the rest of the country, groups of counties; the second identifies individual States and, where they are sufficiently large, provides urban-rural and metropolitan-nonmetropolitan detail; and the third identifies State groups and size of place, with each individual record showing selected characteristics of the person's neighborhood.