

THE 1970 CENSUS: FINDING THE FACTS

This section summarizes the steps involved in taking the 1970 census from questionnaire design to data production. Users who want to fully understand census data and use them to best advantage will benefit from this background information on collection and processing procedures going into the final product.

Which Facts

The items included in Census questionnaires are selected only after a lengthy process of consultation with census users, discussion with a council of federal agency representatives established by the Bureau of the Budget, review by advisory panels of subject matter experts, and careful deliberation by the Bureau staff.

Neither the Bureau of the Census, nor any other Federal agency, is free to ask any question it chooses. Each question must conform to the guidelines established by Congress in the Federal Reports Act of 1942. Briefly, this act, which is administered by the Bureau of the Budget under its reports control program, has both a positive and negative or preventive side. The preventive side results in the avoidance of duplicate, unnecessary, or burdensome reports.

Equally as important, however, is the act's positive objective of "insuring that the informational needs of government, and through it, of the public, are adequately met in the most efficient manner." Accordingly, each potential census question must be submitted to the Bureau of the Budget by the Census Bureau for approval and review to insure that the data obtained are "valid and appropriate to the purpose intended." Questions are eligible for inclusion on the final census questionnaires only after they have gone through this formal clearance procedure. Final authority for determining which approved questions will be included is lodged with the Secretary of Commerce by Title 13 of the U.S. Code, the basic legislation governing the censuses.

In choosing questions, the Census Bureau decides which ones are most important by consulting people who need the statistics. The needs of government agencies receive top priority, but those of businessmen, labor groups, research workers, and others are also considered--often through the use of advisory committees. These committees, which average about a dozen members each and meet several times a year, are established by professional organizations such as the American Statistical Association, or by the Bureau itself, e.g., a committee of population specialists drawn largely from universities. The advisory committees provide an organized and regular channel

of communication between the Bureau staff and professional experts. The committee members receive no salary from the Bureau. Their role is advisory, not decision-making.

In 1966, the Bureau also obtained suggestions and comments through intensive discussion with many individuals, organizations, and Federal agency representatives in a series of locally-sponsored public meetings in 23 cities across the country. The Bureau necessarily relies on this organized and regular flow of information in evaluating users' needs as a means for guiding future program development. Studies are made in an effort to determine both current uses and likely future needs for census data in existing local, State, and Federal programs.

The questions which were proposed for 1970 are too numerous to present here fully. Many were ruled out as not being in the broad public interest, which is the first criterion for possible inclusion. Others were vetoed as too complex or too personal, as more appropriate for a National sample survey than the census, or for other equally relevant reasons. After the list was initially reduced, further cuts had to be made on a priority basis in order to remain within the limits of the available resources and to avoid imposing an unreasonable burden on the respondent.

Among the proposals rejected for one or more of the above-mentioned reasons were questions on exterior building material, amount of taxes paid, auto accidents, religion, union membership, ownership of musical instruments, smoking, multiple job holding, distance to shopping areas, stock ownership, and expected family size.

The final format of the 1970 census questionnaire represents a balance between meeting the needs of users for data to carry out program and research responsibilities and the cost to the citizen and the government resulting from a too complex and lengthy questionnaire. Figure 1 presents the questions contained in the questionnaire and indicates whether a particular question was asked on a 100-percent, 20-percent, 15-percent, or a 5-percent basis.

Figure 1. 1970 Census Questionnaire

180, 15, and 5 percent (100 percent)

Line No.	1. WHAT IS THE NAME OF EACH PERSON who was living here on Wednesday, April 1, 1970 or who was staying or visiting here and had no other home?		2. HOW IS EACH PERSON RELATED TO THE HEAD OF THIS HOUSEHOLD?		3. SEX	4. COLOR OR RACE		5. Month and year of birth and age last birthday		6. DATE OF BIRTH		7. Year of birth	8. WHAT IS EACH PERSON'S MARITAL STATUS?	
	Print name in this order	Middle initial	Fill one circle	Fill one circle		Fill one circle	Print	Fill one circle	Fill one circle	Fill one circle	Fill one circle		Fill one circle	Fill one circle
1	Head of household Wife of head Unmarried children oldest first Married children and their families Other relatives of the head Persons not related to the head	Middle initial	Head of household Wife of head Son or daughter of head Other relative of head—Print exact relationship	Male Female	White Negro or Black Indian (Amer.) Other—Print race	Month Year Age	186-192 193-194 195-196 197	5 6 7 8 9 Never married						
2			Roomer, boarder, lodger Patient or inmate Other not related to head—Print exact relationship	Male Female	Hawaiian Japanese Chinese Filipino Other—Print race	Month Year Age	186-192 193-194 195-196 197	5 6 7 8 9 Never married						
3			Roomer, boarder, lodger Patient or inmate Other not related to head—Print exact relationship	Male Female	Hawaiian Japanese Chinese Filipino Other—Print race	Month Year Age	186-192 193-194 195-196 197	5 6 7 8 9 Never married						
4			Roomer, boarder, lodger Patient or inmate Other not related to head—Print exact relationship	Male Female	Hawaiian Japanese Chinese Filipino Other—Print race	Month Year Age	186-192 193-194 195-196 197	5 6 7 8 9 Never married						
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9	10. Did you leave anyone out of Question 1 because you were not sure if he should be listed—for example, a new baby still in the hospital, or a lodger who also has another home?	Yes No	11. Did you list anyone in Question 1 who is away from home now—for example, on a vacation or in a hospital?	Yes No	12. Did anyone stay here on Tuesday, March 31, who is not already listed?	Yes No	On back page, give name of each visitor for whom you have a home address. Do not list the others; we will call to get the information in this household.							

Figure 1. 1970 Census Questionnaire--Continued

80, 15, and 5 percent (100 percent)

<p>A. 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>H9. 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>FOR CENSUS ENUMERATOR'S USE ONLY</p> <table border="1"> <thead> <tr> <th>a4. Block number</th> <th>a5. Serial number</th> </tr> </thead> <tbody> <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> </tbody> </table>	a4. Block number	a5. 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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7 0 0 0	7 0 0 0																							
8 0 0 0	8 0 0 0																							
9 0 0 0	9 0 0 0																							
<p>Answer these questions for your living quarters</p>		<p>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><i>For a vacant unit, also fill C, D, A, H2 to H8, and H10 to H12</i></p>																						
<p>H1. 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><input type="radio"/> No</p> <p style="text-align: right;"><i>Phone number</i></p>	<p>H10a. 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. 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>C. 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><u>Seasonal</u></p> <p><input type="radio"/> Seasonal</p> <p><input type="radio"/> Migratory</p>																						
<p>H2. 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>H11. If you live in a one-family house which you own or are buying—</p> <p>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><i>If this house is on a place of 10 acres or more, or if any part of this property is used as a commercial establishment or medical office, do not answer this question.</i></p>	<p>D. 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>H3. Do you have complete kitchen facilities?</p> <p><i>Complete kitchen facilities are a sink with piped water, a range or cook stove, and a refrigerator.</i></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>H12. 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><i>and</i></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>C/O <input type="radio"/> <input type="radio"/></p>																						
<p>H4. How many rooms do you have in your living quarters?</p> <p><i>Do not count bathrooms, porches, balconies, foyers, halls, or half-rooms.</i></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. 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 _____</p> <p>(Nearest dollar) (Week, half-month, year, etc.)</p>																							
<p>H5. 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>H6. Do you have a flush toilet?</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 flush toilet</p>																								
<p>H7. Do you have a bathtub or shower?</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 bathtub or shower</p>																								
<p>H8. Is there a basement in this building?</p> <p><input type="radio"/> Yes</p> <p><input type="radio"/> No, built on a concrete slab</p> <p><input type="radio"/> No, built in another way (include mobile homes and trailers)</p>																								

Figure 1. 1970 Census Questionnaire--Continued
Sample Housing Questions

<p>H13. 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>a. Electricity?</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. Gas?</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>c. Water?</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>d. Oil, coal, kerosene, wood, etc.?</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>H14. 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)</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>H15. 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> <hr/> <p>H16. 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>H17. 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> <hr/> <p>H18. 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>	<p>H19. 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>H20. 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>H21. How many bathrooms do you have? A complete bathroom is a room with flush toilet, bathtub or shower, and wash basin with piped water. A half bathroom has at least a flush toilet or bathtub or shower, but does not have all the facilities for a complete bathroom.</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>H22. 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>H23. How many passenger automobiles are owned or regularly used by members of your household? Count company cars kept at home.</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>
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15 and 5 percent

15 percent

Figure 1. 1970 Census Questionnaire--Continued
Sample Housing Questions

The 15-percent form contains the questions shown on page 4. The 5-percent form contains the questions shown in the first column of page 4 and the questions on page 5.

H24a. How many stories (floors) are in this building?
 1 to 3 stories
 4 to 6 stories
 7 to 12 stories
 13 stories or more

b. If 4 or more stories--
 Is there a passenger elevator in this building?
 Yes No

H25a. Which fuel is used most for cooking?
 From underground pipes serving the neighborhood.
 Bottled, tank, or LP
 Electricity
 Fuel oil, kerosene, etc.
 Coal or coke
 Wood
 Other fuel
 No fuel used

b. Which fuel is used most for house heating?
 From underground pipes serving the neighborhood.
 Bottled, tank, or LP
 Electricity
 Fuel oil, kerosene, etc.
 Coal or coke
 Wood
 Other fuel
 No fuel used

c. Which fuel is used most for water heating?
 From underground pipes serving the neighborhood.
 Bottled, tank, or LP
 Electricity
 Fuel oil, kerosene, etc.
 Coal or coke
 Wood
 Other fuel
 No fuel used

H26. How many bedrooms do you have?
Count rooms used mainly for sleeping even if used also for other purposes.
 No bedroom
 1 bedroom
 2 bedrooms
 3 bedrooms
 4 bedrooms
 5 bedrooms or more

H27a. Do you have a clothes washing machine?
 Yes, automatic or semi-automatic
 Yes, wringer or separate spinner
 No

b. Do you have a clothes dryer?
 Yes, electrically heated
 Yes, gas heated
 No

c. Do you have a dishwasher (built-in or portable)?
 Yes No

d. Do you have a home food freezer which is separate from your refrigerator?
 Yes No

H28a. Do you have a television set? *Count only sets in working order.*
 Yes, one set
 Yes, two or more sets
 No

b. If "Yes"--- Is any set equipped to receive UHF broadcasts, that is, channels 14 to 83?
 Yes No

H29. 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.
 Yes, one or more No

H30. Do you (or any member of your household) own a second home or other living quarters which you occupy sometime during the year?
 Yes No

5 percent

Figure 1. 1970 Census Questionnaire--Continued

Sample Population Questions

5 percent

27a. Has this person ever completed a vocational training program?
For example, in high school; as apprentice; in school of business, nursing, or trades; technical institute; or Armed Forces schools.

Yes No—Skip to 28

b. What was his main field of vocational training? *Fill one circle.*

Business, office work
 Nursing, other health fields
 Trades and crafts (*mechanic, electrician, beautician, etc.*)
 Engineering or science technician; draftsman
 Agriculture or home economics
 Other field—Specify *→*

28a. Does this person have a health or physical condition which limits the kind or amount of work he can do at a job?
If 65 years old or over, skip to question 29.

Yes
 No

b. Does his health or physical condition keep him from holding any job at all?

Yes
 No

c. If "Yes" in a or b—How long has he been limited in his ability to work?

Less than 6 months 3 to 4 years
 6 to 11 months 5 to 9 years
 1 to 2 years 10 years or more

QUESTIONS 29 THROUGH 41 ARE FOR ALL PERSONS BORN BEFORE APRIL 1956 INCLUDING HOUSEWIVES, STUDENTS, OR DISABLED PERSONS AS WELL AS PART-TIME OR FULL-TIME WORKERS

29a. Did this person work at any time last week?

Yes—*Fill this circle if this person did full- or part-time work. (Count part-time work such as a Saturday job, delivering papers, or helping without pay in a family business or farm; and active duty in the Armed Forces.)*

No—*Fill this circle if this person did not work, or did only own housework, school work, or volunteer work.*

Skip to 30

b. How many hours did he work last week (at all jobs)?
Subtract any time off and add overtime or extra hours worked.

1 to 14 hours 40 hours
 15 to 29 hours 41 to 48 hours
 30 to 34 hours 49 to 59 hours
 35 to 39 hours 60 hours or more

15 and 5 percent

c. Where did he work last week?
If he worked in more than one place, print where he worked most last week.
If he travels about in his work or if the place does not have a numbered address, see instruction sheet.

(1) Address (*Number and street name*) _____
 (2) Name of city, town, village, etc. _____
 (3) Inside the limits of this city, town, village, etc.?
 Yes
 No
 (4) County _____
 (5) State _____ (6) ZIP Code _____

15 percent

d. How did he get to work last week? *Fill one circle for chief means used on the last day he worked at the address given in 29c.*

Driver, private auto Taxicab
 Passenger, private auto Walked only
 Bus or streetcar Worked at home
 Subway or elevated Other means—Specify *→*
 Railroad

After completing question 29d, skip to question 33.

30. Does this person have a job or business from which he was temporarily absent or on layoff last week?

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

31a. Has he been looking for work during the past 4 weeks?

Yes No—Skip to 32

b. Was there any reason why he could not take a job last week?

Yes, already has a job
 Yes, because of this person's temporary illness
 Yes, for other reasons (in school, etc.)
 No, could have taken a job

15 and 5 percent

32. When did he last work at all, even for a few days?

In 1970 1964 to 1967 1959 or earlier | *Skip to 36*
 In 1969 1960 to 1963 Never worked
 In 1968

- continued -

Figure 1. 1970 Census Questionnaire--Continued
Sample Population Questions

33-35. Current or most recent job activity
Describe clearly this person's chief job activity or business last week, if any. If he had more than one job, describe the one at which he worked the most hours.
If this person had no job or business last week, give information for last job or business since 1960.

33. Industry
a. For whom did he work? If now on active duty in the Armed Forces, print "AF" and skip to question 36.

(Name of company, business, organization, or other employer)
b. What kind of business or industry was this?
Describe activity at location where employed.

(For example: junior high school, retail supermarket, dairy farm, TV and radio service, auto assembly plant, road construction)
c. Is this mainly— (Fill one circle)
 Manufacturing Retail trade
 Wholesale trade Other (agriculture, construction, service, government, etc.)

34. Occupation
a. What kind of work was he doing?

(For example: TV repairman, sewing machine operator, spray painter, civil engineer, farm operator, farm hand, junior high English teacher)
b. What were his most important activities or duties?

(For example: Types, keeps account books, files, sells cars, operates printing press, cleans buildings, finishes concrete)
c. What was his job title?

35. Was this person— (Fill one circle)
Employee of private company, business, or individual, for wages, salary, or commissions...
Federal government employee...
State government employee...
Local government employee (city, county, etc.)...
Self-employed in own business, professional practice, or farm—
Own business not incorporated...
Own business incorporated...
Working without pay in family business or farm

36. In April 1965, what State did this person live in?
 This State
OR
(Name of State or foreign country; or Puerto Rico, etc.)

37. In April 1965, was this person— (Fill three circles)
a. Working at a job or business (full or part-time)?
 Yes No
b. In the Armed Forces?
 Yes No
c. Attending college?
 Yes No

38. If "Yes" for "Working at a job or business" in question 37— Describe this person's chief activity or business in April 1965.
a. What kind of business or industry was this?

b. What kind of work was he doing (occupation)?

c. Was he—
An employee of a private company or government agency...
Self-employed or an unpaid family worker...

39a. Last year (1969), did this person work at all, even for a few days?
 Yes No— Skip to 41

b. How many weeks did he work in 1969, either full-time or part-time? Count paid vacation, paid sick leave, and military service.
 13 weeks or less 14 to 26 weeks 27 to 39 weeks 40 to 47 weeks 48 to 49 weeks 50 to 52 weeks

40. Earnings in 1969— Fill parts a, b, and c for everyone who worked any time in 1969 even if he had no income. (If exact amount is not known, give best estimate.)
a. How much did this person earn in 1969 in wages, salary, commissions, bonuses, or tips from all jobs? (Before deductions for taxes, bonds, dues, or other items) \$ _____ .00 (Dollars only) OR None
b. How much did he earn in 1969 from his own nonfarm business, professional practice, or partnership? (Net after business expenses. If business lost money, write "Loss" above amount.) \$ _____ .00 (Dollars only) OR None
c. How much did he earn in 1969 from his own farm? (Net after operating expenses. Include earnings as a tenant farmer or sharecropper. If farm lost money, write "Loss" above amount.) \$ _____ .00 (Dollars only) OR None

41. Income other than earnings in 1969— Fill parts a, b, and c. (If exact amount is not known, give best estimate.)
a. How much did this person receive in 1969 from Social Security or Railroad Retirement? \$ _____ .00 (Dollars only) OR None
b. How much did he receive in 1969 from public assistance or welfare payments? Include aid for dependent children, old age assistance, general assistance, aid to the blind or totally disabled. Exclude separate payments for hospital or other medical care. \$ _____ .00 (Dollars only) OR None
c. How much did he receive in 1969 from all other sources? Include interest, dividends, veterans' payments, pensions, and other regular payments. (See instruction sheet) \$ _____ .00 (Dollars only) OR None

15 and 5 percent

15 and 5 percent

5 percent

15 and 5 percent

5 percent

Table 1 provides a summarized comparison of the 1970 census items with the 1960 content. That the 1970 items do not differ strikingly from 1960 is not surprising. Although many new items were proposed, the dominant tone through most discussions of improvement of the 1970 product by users was for a greater exploitation of the existing (1960) items by more intensive cross-tabulation and by providing additional data for small areas. Thus, while a number of new items have been added on a sample basis (primarily to meet the program needs of Federal agencies), the subject needs which the decennial census serve have not changed greatly during the decade.

The stability of the census items stems from a desire to develop historical continuity in data series. This continuity is sometimes lost, however, and should be examined carefully on a case-by-case basis. A question asked for one census may not be asked for the next because it no longer yields useful data, or it is no longer important in most localities, or it may yield unreliable data. For example, the 1960 item on structural condition was dropped because it was based on a subjective rating made by the enumerators, which post-census evaluation studies found in many cases to be unreliable and inaccurate.

Table 1. 1970 Census Items Compared With 1960 Content

Population items	Complete-count or sample percentage	
	1960	1970
Relationship to head of household.....	100	100
Color or race.....	100	100
Age (month and year of birth).....	100	100
Sex.....	100	100
Marital Status.....	100	100
State or country of birth.....	25	20
Years of school completed.....	25	20
Number of children ever born.....	25	20
Activity 5 years ago.....	-	20
Employment Status.....	25	20
Hours worked last week.....	25	20
Weeks worked last year.....	25	20
Last year in which worked.....	25	20
Occupation, industry, and class of worker.....	25	20
Income last year:		
Wage and salary income.....	25	20
Self-employment income.....	25	¹ 20
Other income.....	25	² 20
Country of birth of parents.....	25	15
Mother tongue.....	25	15
Year moved into this house.....	25	15
Place of residence 5 years ago.....	25	³ 15
School or college enrollment (public or private).....	25	15
Veteran status.....	25	15
Place of work.....	25	⁴ 15
Means of transportation to work.....	25	15
Mexican or Spanish origin or descent.....	-	5
Citizenship.....	-	5
Year of immigration.....	-	5
Marital history.....	25	⁵ 5
Vocational training completed.....	-	5
Presence and duration of disability.....	-	5
Occupation-industry 5 years ago.....	-	5

¹Single item in 1960; two-way separation in 1970 by farm and nonfarm income.

²Single item in 1960; three-way separation in 1970 by social security, public assistance, and all other receipts..

³This item is also in the 5-percent sample but limited to State of residence 5 years ago.

⁴Street address included for 1970.

⁵In 1960, whether married more than once and date of first marriage; in 1970 also includes whether first marriage ended by death of spouse.

Table 1: 1970 Census Items Compared With 1960 Content--Continued

Housing items	Complete-count or sample percentage	
	1960	1970
Number of units at this address.....	-	⁶ 100
Telephone available.....	25	⁷ 100
Access to unit.....	100	100
Kitchen or cooking facilities.....	100	-
Complete kitchen facilities.....	-	100
Condition of housing unit.....	100	-
Rooms.....	100	100
Water supply.....	100	100
Flush toilet.....	100	100
Bathtub or shower.....	100	100
Basement.....	20	100
Tenure.....	100	100
Commercial establishment on property.....	⁸ 100	100
Value.....	⁸ 100	100
Contract rent.....	⁸ 100	100
Vacancy status.....	100	100
Months vacant.....	25	100
Heating equipment.....	25	20
Components of gross rent.....	25	20
Year structure built.....	25	20
Number of units in structure and whether a trailer.....	20	20
Farm residence (acreage and sales of farm products)....	⁹ 25	20
Land used for farming.....	¹⁰ 25	-
Source of water.....	⁹ 20	15
Sewage disposal.....	⁹ 20	15
Bathrooms.....	20	15
Air conditioning.....	5	15
Automobiles.....	¹¹ 20	15
Stories, elevator in structure.....	¹² 20	5
Fuel--heating, cooking, water heating.....	5	5
Bedrooms.....	5	5
Clothes washing machine.....	5	5
Clothes dryer.....	5	5
Dishwasher.....	-	5
Home food freezer.....	5	5
Television.....	5	5
Radio.....	5	5
Second home.....	-	5

⁶Collected primarily for coverage check purposes.

⁷Required on 100-percent basis for field follow-up purposes in mail areas.

⁸100-percent in places of 50,000 or more inhabitants, 25-percent elsewhere.

⁹Omitted in places of 50,000 or more inhabitants..

¹⁰For renter-occupied and vacant-for-rent units outside places of 50,000 or more inhabitants.

¹¹20-percent in places of 50,000 or more inhabitants, 5-percent elsewhere.

¹²Collected only in places of 50,000 or more inhabitants.

Sampling

People

Only five questions are asked of all individuals. The "complete count" or "100-percent" items on relationship to household head, sex, race, age, and marital status permit an accurate count of persons in each area as required by the Constitution to determine representation in Congress. These facts about a person together with his name and address are used to establish his identity and insure against double counting. However, the basic record tapes and summary tapes do not contain names or addresses, because these items are never used in Census Bureau tabulations. The complete-count tabulations provide only totals and cross-tabulations of the five items listed above.

All other information concerning individuals is obtained from questions asked of only a sample of the population. Sampling permits the collection of data about an area which reflect the characteristics of all persons in the area even though only a small number of individuals were actually questioned. This process allows the data to be obtained at a much lower cost. The sample cases are weighted to reflect the sampling percentages. For example, in a tabulation based on the 20-percent sample, the average case will have a weight of 5, that is, all figures are multiplied by approximately 5 so the final results will provide estimates for all people in an area. Thus, if the sample indicated that 51 families have an income between \$5,000 and \$6,000, and that 40 families have an income between \$7,000 and \$8,000, tabulations for that area would show that there are 255 families which have an income between \$5,000 and \$6,000, and 200 families which have an income between \$7,000 and \$8,000. This aspect of sample tabulations makes identification of particular individuals impossible. As an additional protection, the sampling procedures used a random start to select those households which were asked to answer the sample questions.

There was a 15-percent and a 5-percent sample in the 1970 census, and certain questions common to both samples resulted in a 20-percent sample (see Table 1). Whether a question was asked of everyone or of a sample of people depends in part on the size of the area for which statistics are to be tabulated and published. Information required for apportionment purposes and that which is to be tabulated for city blocks was collected on a 100-percent basis; that which is to be tabulated for larger areas, the smallest being a census tract, was asked on a 15- or 20-

percent sample basis. The 5-percent sample will provide reliable data for all large counties, and States.

Although the average census tract has a population of about 4000 persons, tracts having a population of as few as 1000 persons are not unusual. A tract with just 1000 inhabitants would be expected to have perhaps 300 households (and household heads). For a 5-percent sample this would mean 15 households, of which 10 might be owner-occupied and 5 renter-occupied. When combined for larger areas, such as an entire SMSA, 5-percent data could be expected to be fairly reliable. However, it should be noted that 5-percent sample data for census tracts, available on census summary tapes, can be used for statistical analysis only with great caution.

Housing units

The basic unit in census sampling is the housing unit. Therefore, the sample percentages (20, 15, and 5) are the same for housing units as for people. For example, in a household where each person answers 15-percent sample population questions, 15-percent sample housing data is also obtained. There are more complete-count housing unit questions (15) than population questions because of the need for housing data on a city block basis where a sample would not be reliable because of the small number of cases. These block data are essential to public and private housing programs, renewal, city planning, and other work related to the physical characteristics of our environment.

Group quarters

In addition to the private living quarters or "housing units," there are other living arrangements known as group quarters. Group quarters are institutions such as mental hospitals, homes for the aged, prisons, dormitories, military barracks, or any house or apartment with five or more occupants unrelated to the head of household.

The population questions are asked either on a "complete-count" or a sample basis as explained above; however, no housing information is collected.

Geographic Preparation

Geographic identification is crucial to every stage in the taking and processing the decennial census. Census tabulations are always prepared

in terms of specific geographic areas--whether the entire United States or a city block. Geographic areas also provide the basis of administrative control in taking the census in the field and in processing the returned questionnaires.

The Bureau engages in substantial geographic work preparatory to the census such as determining boundaries, mapping, and geographic coding. These activities result in geographic products--maps, code schemes, etc.--which are of value to users as well as the Bureau. These activities also determine which areas will be recognized in general census tabulations and which areas will require special procedures to produce data summaries. (See section on Data Products and Services, page 33.)

Boundary definitions

The Bureau of the Census is not responsible for establishing the boundaries of most geographic areas for which it generally tabulates data. Political boundaries for States, counties, minor civil divisions, cities, and wards are established by appropriate authorities. In a number of States, however, the minor civil divisions (MCD's) are not satisfactory units for reporting statistics because they no longer serve any local administrative purpose (e.g., townships in Oklahoma), or are unsuitably small (e.g., some Georgia militia districts), or they have frequently shifting boundaries (e.g., election precincts in Washington and Oregon). To provide divisions with stable and meaningful boundaries in these States, the Bureau established, in cooperation with State and local groups, census county divisions (CCD's) as permanent statistical areas.

The Bureau also defines and delineates densely populated but unincorporated population centers. Data is tabulated for those unincorporated places with a population of 1000 or more inhabitants. Within urbanized areas, only those unincorporated places with a population of 5,000 or more are identified.

Statistical boundaries are determined by groups with special interests, often with the advice and assistance of the Bureau of the Census. The Bureau of the Budget, with the help of other Federal agencies, is responsible for defining standard metropolitan statistical areas. Local census tract committees determine tract boundaries. Several kinds of economic regions have been set up by specialists in regional economics.

Functional or administrative boundaries are established by the appropriate agencies. The Post Office defines ZIP code coverage, police departments define police precincts, marketing departments and firms draw sales territories, and so on. (With the exception of ZIP codes, census tabulations do not recognize these kinds of areas; however, special tabulations may be feasible on a contract basis.) For purposes of taking the census, the Bureau itself defines an administrative area known as an enumeration district (ED), which represents a work assignment for a single enumerator. An ED may range in size from a city block to several hundred square miles, but usually encompasses from 750 to 1,500 persons.

Boundary changes

A general problem for the Bureau in all its geographic work (and to users interested in historical analysis) is that boundaries change over time. Geographic areas of all sizes are affected.

While State and county boundaries remain relatively unchanged, MCD or CCD boundaries are altered by incorporation of new places or annexations to existing ones and in other ways. Records of such changes are kept by the Bureau and extensive footnotes on the changes that have occurred since the previous census are provided in the first series of population reports (PC(1)-A).

Census tracts are designed to permit comparison from census to census. However, changes in their boundaries do occur. Tracts are often subdivided because of an increase in population, tract boundaries which follow corporate limits may change with shifts in these limits, and boundaries can change with alterations to the street pattern. Comparability tables are prepared to aid users in recognizing changes in these boundaries. The tables are available with each printed tract report.

Because enumeration districts are created for administrative purposes and are based on population size, their boundaries are generally not comparable from census to census. Comparability is usually only possible where block data are available to aggregate to the earlier ED boundaries.

The point to be recognized is that a user wishing to compare areas at two points in time should design a plan permitting adjustments necessary to produce comparability.

Boundary identification and coding

Maps provide a means of showing the location of various types of geographic and political boundaries. The Bureau, working with the best sources available, prepares maps defining the boundaries of the areas recognized in the general tabulations: States, counties, standard metropolitan statistical areas, minor civil divisions, places, tracts, blocks, and other areas, such as wards.

For purposes of identifying the data for each of the geographic areas, the basic data record for each individual housing unit contains a series of codes, one code for each level in the geographic hierarchy down to the enumeration district or block in areas where block data are to be produced. These code numbers are derived from the maps and a geographic coding scheme prepared by the Bureau. The basic record tape (BRT) is put through a tallying program which aggregates each data item into totals for specified geographic areas using the identification codes as "keys" to the desired areas.

The geographic codes and associated place names (where relevant) for each political and statistical subdivision of the United States for which data will be tabulated will be contained in the 1970 Master Enumeration District List (MEDList). The MEDList will be an expanded version of the 1960 Geographic Identification Code Scheme and will be available either on tape or in printed form. A detailed description of the MEDList is found in the section on Data Products and Services.

Sources of geographic error and their correction

None of the mapping can be any better than the geographic material on which it is based. The Bureau obtains the best source maps it can locate in preparing its own maps. Local cooperation is sought to ensure accuracy; nevertheless, errors may be present in the final product.

These maps were one of the sources used in preparing the Address Coding Guide (ACG) for those areas to be covered by a mail-out/mail-back enumeration process (see below). Conflicts between the areal definition of the maps and the residential listings were resolved with local cooperation at this stage also.

At the time the census was taken, errors in the geographic descriptions were exposed. A

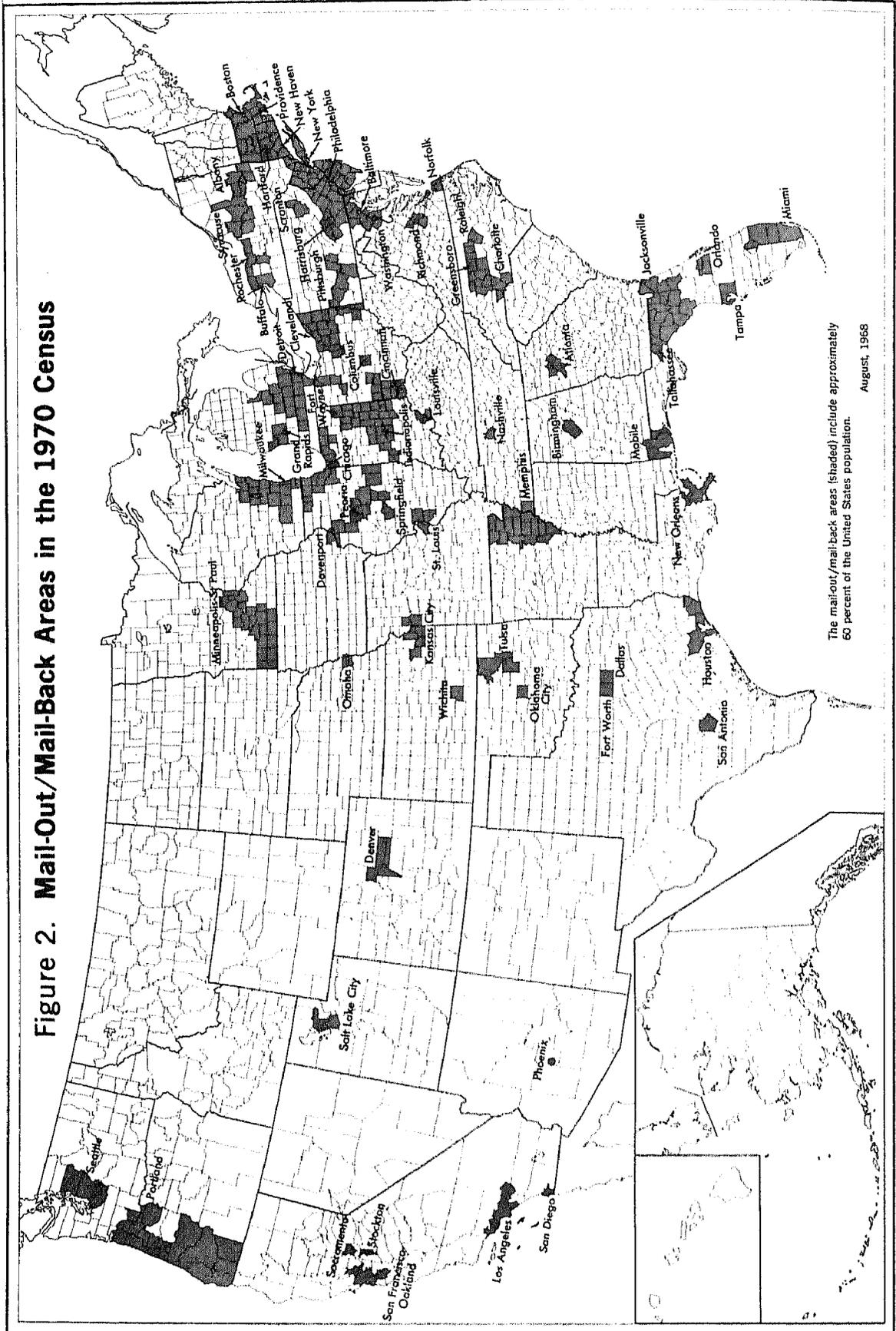
record of geographic changes is kept to facilitate correction of the maps. Users depending on these maps for determination of user-defined small geographic areas should work with the post-census versions of these maps.

Collecting the Data

In 145 of the larger SMSA's and some rural test counties (altogether including about 60 percent of the total U.S. population), householders were asked to fill in questionnaires and return them by mail to the local census field office (see Figure 2). Enumerators obtained the necessary information from households that either did not respond or returned incomplete questionnaires. For the balance of the country, the traditional house-to-house canvass was used, supplemented (as in 1960) by the distribution to all households shortly before Census Day of a questionnaire containing the 100-percent population and housing questions.

The major steps in the mail-out/mail-back system are as follows: Over a span of approximately 6 months in 1969, about 40 million individual address labels were printed out from a computer tape containing city-type residential addresses--the Address Register. (These addresses were derived from a commercial mailing list.) The labels contained apartment designation (in multiunit structures), house number, street name, city, and ZIP code; however, they did not contain the name of the householder. Each label was affixed to a card, and the cards were turned over to the Post Office Department for transmittal to their respective letter carriers. Each carrier checked his cards for completeness and accuracy, i.e., nonexistent addresses were marked for deletion, incorrect addresses were corrected, and addresses for which the carrier had not been given a card were listed for addition to the Address Register cards. Lists then were returned to the Census Bureau and the necessary revisions were made to the computer tape.

The corrected tape was then processed through an Address Coding Guide so that each address could be assigned the appropriate geographic identification codes, e.g., tract, block, ward, city, county, etc. (See previous section.) Finally, the addresses were identified by the Census field control codes for district office, enumeration district (ED), and serial number within ED; and each address was designated through a random-start serialization technique to receive one of the three types of questionnaires. The three types were (1) the "short form" which contained the 100-percent items and



went to 80 out of every 100 housing units; (2) the "15-percent long form" which contained the "5-percent long form" which contained the 100, 20, and 5-percent items and went to 5 out of every 100 housing units.

From this corrected, geographically-identified, field-coded, and sample-designated set of addresses, two primary sets of materials were printed. One was the individual address labels, which were affixed to the mailing pieces. Each mailing piece contained the appropriate type of questionnaire, an instruction booklet, and a return envelope. The second was a listing (or Address Register) of all the addresses in a particular ED which was used for control purposes.

Because addresses are, in a sense, individual information, the Address Registers will not be released to the public. The Address Coding Guides (ACG), however, are simply a record of address ranges for each blockface together with codes corresponding to the geographic areas of which a particular blockface is a part; i.e., block, tract, ward, 5-digit ZIP, congressional district, place, MCD or CCD, county or county equivalent, and State. The ACG in no way presents individual information. Therefore, ACG copies are available. (See section on Data Products and Services for further information).

This process did not cover the entire SMSA, but only the portion which received city delivery service from the Post Office Department. For the balance of the SMSA, temporary Census employees performed a special listing operation in late 1969 or early 1970. The listing procedure involved the location of each housing unit within an assigned enumeration district and the determination of its mailing address. The mail address for each housing unit (whether a city delivery type such as 121 Main Street or a rural delivery type such as Box 210, RFD #2) together with the name of the household head were recorded onto an Address Register listing sheet. Block numbers were also recorded if they appeared on the maps of the enumeration district.

The Address Registers which were developed in this manner were then used to prepare hand-addressed mailing pieces comparable to the computer generated ones discussed above.

About March 15, 1970, all mailing pieces were transmitted to local post offices. The carriers sorted the mailing pieces to recheck whether any

residential address had been omitted. The missing addresses were sent to the appropriate local Census office where they were added to the Address Registers, and mailing pieces were prepared. About four days before Census Day--Wednesday, April 1, 1970--all the mailing pieces were delivered. During the delivery process, the carriers made a final check for missing addresses and informed the Census office accordingly.

Householders were requested to fill out and mail back their questionnaires on Census Day. This request was reinforced by a widespread publicity campaign.

Within a few days after Census Day, check-in and review of the mail returns began. Incomplete questionnaires and nonresponse cases were followed up. The goal of the operation was to have a complete questionnaire for each address on the register, or an explanation on the register of why a listed address was not included in the census (e.g., it was really part of another housing unit, or it was not a residential address despite the letter carrier's belief).

The mail-out/mail-back system was developed after many years of study and field testing. The procedures developed for the 1970 census were successfully tested under as near census conditions as possible in 1968 in dress rehearsals in Dane County, Wisconsin and Trenton, New Jersey. The primary purposes of a mail census are to improve coverage, to improve the data from respondents, and to reduce the number of enumerators needed for the census. On the first point, by bringing the letter carrier's knowledge of his delivery area into the census process and by the repeated checks which this system makes feasible, improvement in coverage was evidenced. In the test areas, the postal check virtually eliminated that portion of the under-enumeration which results from an enumerator skipping an entire structure and its residents. Mail enumeration gives each respondent a chance to answer questions for himself at his own speed and to check his records if necessary, thus assuring privacy and increasing the likelihood of accuracy. The mail census system also permits the Census Bureau to concentrate effort on hard-to-enumerate areas by reducing demands on employees time in areas where cooperation in mailing back questionnaires is high.

With regard to reducing the total number of enumerators, the mail approach permitted a reduction in the number of field workers who

would have been needed for a house-to-house canvass of the areas where the mail system was used. The reduction eased to some extent the intense problems of staff recruitment and retention in the large cities, and sped up the completion of the enumeration process.

Problems in acquiring a mailing list and in locating the addresses on the list to a particular physical area--Box 283, RFD #1, for example--dictated that the country's more rural areas be excluded from the mail enumeration system at this time. Certain tests however, were carried on during the 1970 operation to help determine whether the scope of the mail system could be extended in future censuses.

In the nonmail areas, a technique much like the 1960 "single stage" approach was used. Several days before Census Day, letter carriers left at every housing unit an unaddressed short form questionnaire identical in content with the one used in mail areas. This questionnaire was similar to the Advance Census Report of 1960, except that the 1970 form was a FOSDIC document and used for final processing, whereas in 1960 the information was transcribed by the enumerator into a FOSDIC book. (FOSDIC stands for Film Optical Sensing Device for Input to Computers, an optical scanning device which is capable of "reading" information from a microfilm copy of an appropriately designed and marked questionnaire and "transferring" the data to magnetic tape for processing on electronic computers.) The purpose of this advance distribution was to obtain the advantages of self-enumeration for the 100-percent items. At every fifth unit, the 1970 enumerator completed the same long-form (15- or 5-percent) questionnaire as was used in mail areas.

Processing the Data

Figure 3 provides a greatly simplified diagram of the 1970 census data processing steps. The complete-count data handled separately from the sample data in the processing operations. Although both types of data undergo similar steps, the complete-count data are prepared on a priority time schedule while the sample data require a time-consuming hand-coding operation.

The questionnaires were specially designed for optical scanning by FOSDIC. Questions were answered by blackening in a limited number of circles. In preparation for processing, a "breaker sheet," a geographic identification page in FOSDIC readable form, is prepared and

placed at the beginning of each enumeration district grouping of questionnaires. Because the complete-count items do not require hand-coding, the short form together with the 100-percent portion of the sample questionnaires can be microfilmed for FOSDIC processing with a minimum of handling.

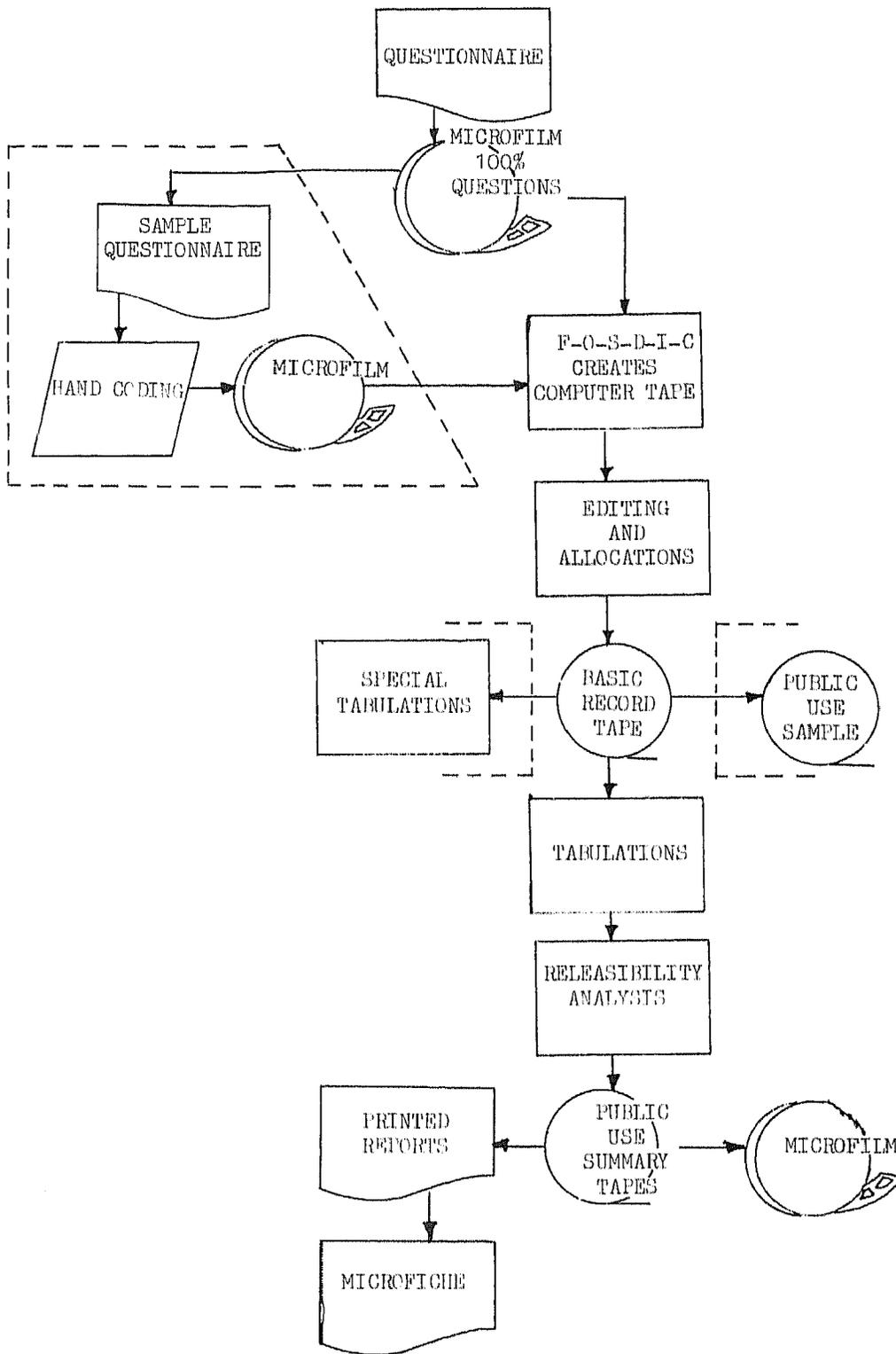
Several of the sample questions, such as those on income, occupation, and place-of-work have many possible answers, so the answers were hand-written. Because FOSDIC can read only darkened circles, a Bureau coder determines a code for each hand-written entry and then fills the appropriate circles. Therefore, after the 100-percent entries are accepted, the sample questionnaires are separated from the 100-percent forms and sent to the coding sections. After coding, the sample forms are microfilmed in their entirety for FOSDIC. When the microfilming is completed, the original questionnaires are destroyed, and the microfilm will ultimately be stored under security conditions in Pittsburg, Kansas.

The new FOSDIC machine (called FOSDIC-70 for the 1970 census) scans the microfilm, noted in each section the position of the darkened circles (light spots on the film negative), and converts these marks to bit patterns on magnetic tape. FOSDIC is also equipped with internal memory and programming capacity and performs some preliminary consistency checks and edits on the tape. The tape then will carry the information in a form that can be read and manipulated by electronic computers.

Instructions for the operations carried out by the computer are given in programs prepared for each major operation which are fed into the computer with the data from the census. Controlled by the stored program, the computer processes the data for each person (as coded by FOSDIC) through the editing, tallying, and cross-tabulating. An edit program checks the information on each record to determine whether any items are inconsistent or missing. For example, a record for a person identified as the wife of a household head but with a marital status of "single" is automatically changed to a marital status of "now married."

Some missing information will be supplied by allocation. The allocation procedure begins with a set of items stored in the computer. Substitutions are then made for missing items using the most recent record processed containing the item. The stored information is then used to make allocations for missing data items.

Figure 3. The Processing of the 1970 Census Data Products



This is necessarily a simplified presentation. Dashed lines indicate separate processing operations.

For example, in processing the 100-percent data, the stored information has an entry of age 25 for a male, white, head of household, with wife present. As another record with this set of characteristics comes through the computer with age reported as 26, the new age is substituted in the stored information for the original entry of 25. Now, if another record comes through for a person with the same characteristics but with age missing, the age of 26 is allocated to this individual. This procedure insures that the distribution of ages assigned by the computer for persons of a given set of characteristics will correspond closely to the reported age distribution of such persons in the current census.

The sample data are then processed through a sample weighting procedure in addition to the above processing. The goal of this procedure is to arrive at weights (multipliers) which, when applied to the sample respondents in a given small area, would match certain complete-count characteristics of that small area. In the 20-percent sample, for instance, a number close to 5 is found, which would produce an inflated population from the sample items that would be the same as the observed population in total and with respect to race, sex, age, family size, and housing characteristics. (See section on Sampling, page 21.)

Edited data about individuals, together with associated geographic information, are contained

on computer tapes known as the basic record tapes (BRT's). All complete-count and sample tabulations are made from these tapes. Because the BRT's contain information about individuals, they are confidential and may be tabulated for statistical purposes only by Census Bureau employees. Names and addresses of persons do not appear on the BRT's because there is no need for this information in statistical data summaries.

Data summaries are prepared on computer tapes from the BRT's for each of the geographic areas--blocks, tracts, places, counties, etc. The tapes containing these area tabulations are called census summary tapes. Summary tapes in turn are used to prepare more limited sets of tabulations which appear in the printed reports, complete with table headings, footnotes, etc. Some tabulations contained on the summary tapes and in the printed reports will also be released on microfilm. Other special tabulations of the basic record tapes may be prepared at user request and expense. (See section on Data Products and Services.)

All tabulations--general and special--pass through a variety of releasability analyses as they are prepared for delivery to the user. These analyses take many forms but their basic objective is to insure that no confidential data are released and that all data delivered are properly tabulated.

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