

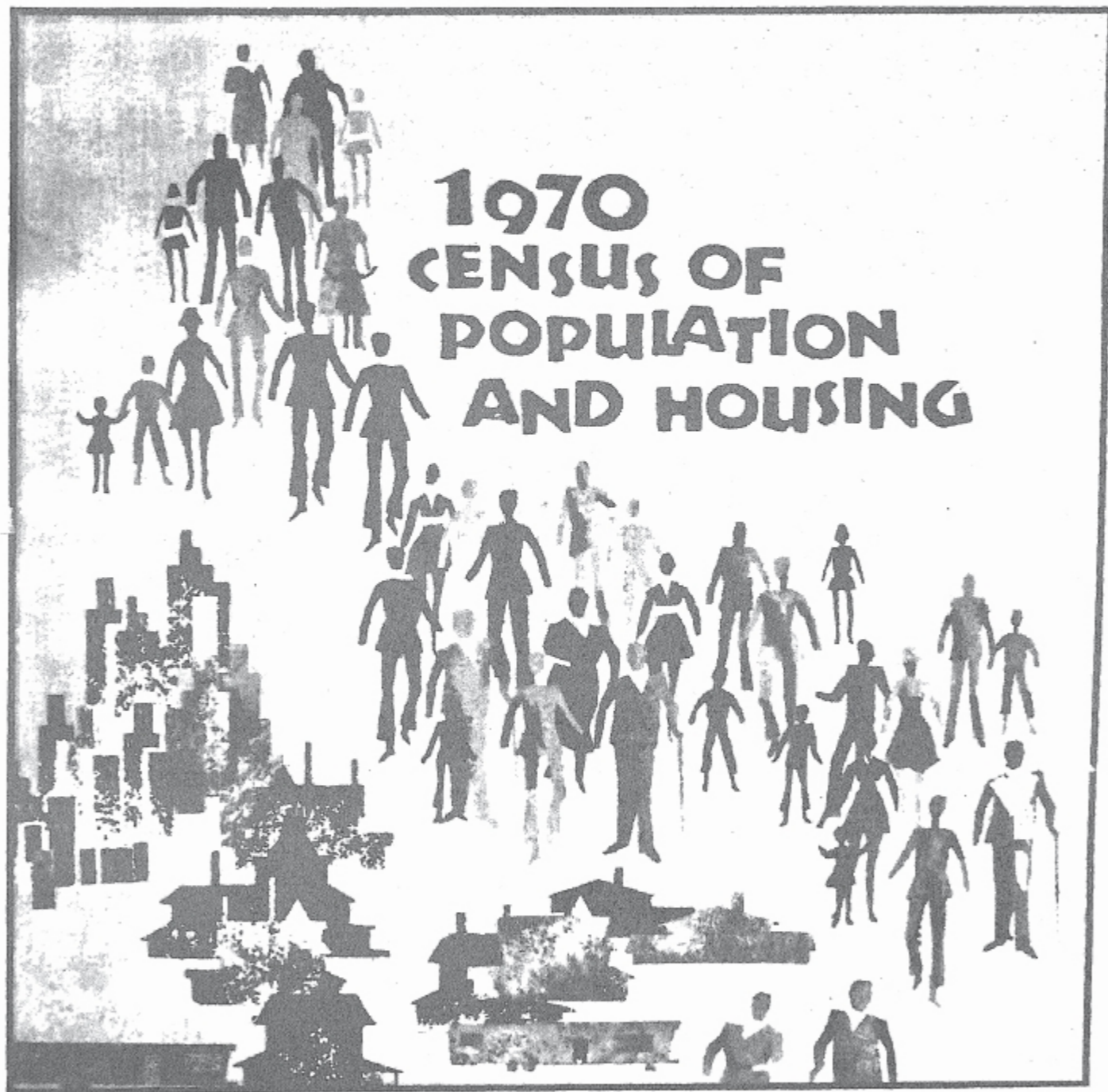
# Procedural History

PHC(R)-1

**CDCES**

Recinto de Ciencias Médicas  
Programa Graduado de Demografía

CENTRO DE  
DATOS CENSALES  
Y ESTADÍSTICAS  
DE SALUD



U.S. Department of Commerce  
BUREAU OF THE CENSUS

# U. S. DEPARTMENT OF COMMERCE

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**ACKNOWLEDGMENTS**—Many persons participated in the various activities of the 1970 census. Primary direction of the program was performed by Conrad Taeuber, formerly Associate Director for Demographic Fields, assisted by David L. Kaplan, 1970 Census Coordinator, and in conjunction with Paul R. Squires, formerly Associate Director for Data Collection and Processing, and Joseph Waksberg, then Associate Director for Statistical Standards and Methodology.

The Population Division, Meyer Zitter, Chief, was primarily concerned with the subject content of the census of population.

The Housing Division, under the supervision of Arthur F. Young, Chief, was primarily concerned with the subject content of the census of housing.

The Statistical Methods Division, under the direction of Morton Boisen, Chief, was responsible for statistical standards and methodology, including planning and implementation of the sample design, estimation of sample data, variance computation, and evaluation and research activities, as well as the development of new procedures for obtaining a more accurate count.

The Statistical Research Division, then under the direction of Thomas B. Jabine, then Chief, developed the overall program for coverage improvement; devised certain

estimating procedures; and provided quality control plans, implemented them in preparatory work and in final processing, and evaluated the quality of the processing operations.

Geographic plans and procedures were developed in the Geography Division under the supervision of William T. Fay, then Chief.

Data collection activities were administered by the Field Division, Richard C. Burt, Chief, with the assistance of the directors of the Bureau's data collection centers.

Systems and processing procedures were developed under the direction of Morris Gorinson, Assistant Chief, Demographic Census Staff.

The manual processing and microfilming of the questionnaires and the review of tabulation controls were performed in the Data Preparation Division (formerly the Jeffersonville Census Operations Division), Robert L. Hagan, then Chief.

FOSDIC and computer processing were performed in the Computer Services Division under the supervision of James R. Pepal, Chief.

The Administrative Services Division, under the supervision of Cecil B. Matthews, Chief, was primarily concerned with the procurement of space, equipment, printed materials, and supplies.

Within the Publication Services Division, many individuals made significant contributions in the areas of publication planning and design, editorial review, composition, and printing procurement.

The Bureau's 1970 census information program was planned and directed by the Public Information Office John J. Casserly, then Chief.

This report was prepared in the Data User Services Division by Frederick G. Bohme, 1970 Census Historian, under the direction of Phyllis G. Carter, Chief, Census History Staff, with the assistance of many persons throughout the Bureau.

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# **1970 CENSUS OF POPULATION AND HOUSING**

## Procedural History

Issued June 1976



## **PREFACE**

This report describes in detail most aspects of the 1970 census, from its early stages of research and planning through the tabulation, publication, and dissemination of the final results. The various chapters were issued originally in "advance issuance" reports prior to assembly, with minor corrections, in this volume.

There is a bibliography at the end of most chapters containing references to sources of detailed background information. The bibliography is restricted to publications, unpublished papers presented at conferences, instruction manuals, and training guides. Additional reference material, consisting of documentation prepared for internal use such as memorandums, specifications, preliminary evaluations, and policy directives, was used in the preparation of this report.

The 1970 Census of Population and Housing was conducted as of April 1, 1970. Legal provision for this census was made in the Act of Congress of August 31, 1954, which codified Title 13, United States Code.

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## Chapter 9. PUERTO RICO AND THE OUTLYING AREAS

### INTRODUCTION

#### Legal Authority

Title 13 of the U.S. Code states that the censuses of population shall include "each State, the District of Columbia; . . . the Virgin Islands, Guam, and the Commonwealth of Puerto Rico, and as may be determined by the Secretary [of Commerce], such other possessions and areas over which the United States exercises jurisdiction, control, or sovereignty." The Census Act further specifies that the inclusion of these "other possessions and areas" shall be subject to the concurrence of the Secretary of State. Accordingly, discussions were held early in 1969 with representatives of the Department of State, and it was agreed to include the following areas in addition to those listed above: American Samoa; the Canal Zone; the Trust Territory of the Pacific Islands; the Swan Islands; and Midway, Wake, and Johnston Islands, together with several small islands associated with them.

#### Historical Background

Puerto Rico.--The island of Puerto Rico was ceded to the United States by Spain in 1898, and acquired the status of a commonwealth in 1952. Under Spanish rule censuses had been taken at irregular intervals between 1765 and 1887. A special census of Puerto Rico was taken by the U.S. War Department in 1889, and Puerto Rico has been included in every decennial census of the United States since 1910. The 1970 Census of Population and Housing of the Commonwealth of Puerto Rico was conducted as a joint project of the U.S. Bureau of the Census and the Puerto Rico Planning Board.

American Samoa.--Following the acquisition of American Samoa by the United States in 1900, censuses were taken at various times under the direction of the governors. In 1920, the population of American Samoa was enumerated in the U.S. decennial census and has been included in all subsequent decennial censuses.

Canal Zone.--In 1904, the year in which the United States took over control of the Canal Zone, a general census of population was taken by order of the newly appointed Isthmian Canal Commission. Another general census was taken in 1912, and a number of special censuses were taken for particular purposes at various times. The Canal Zone was included in the U.S. decennial census for the first time in 1920.

Guam.--The first enumeration of the population of Guam, after its occupation by the U.S. Government in 1899, was made in 1901 under the direction of the second naval governor. Population statistics were included in

the governor's annual reports in subsequent years. Guam was included in the U.S. decennial census for the first time in 1920.

Trust Territory of the Pacific Islands.--This territory was included as part of the regular enumeration for the first time in 1970; in 1960, results from a census conducted in 1958 by the High Commissioner of the Trust Territory were included in the 1960 census reports. The 1950 census was taken by the U.S. Navy, and the area was included in the Japanese censuses of 1930 and 1940.

Virgin Islands.--The Danish Government took periodic censuses of these islands between 1835 and 1911. A Federal census was taken as of November 1, 1917, shortly after the islands were formally transferred to the United States in the same year. The islands were included in the 1920 decennial census of population and in subsequent decennial censuses.

Other islands.--The populations of Midway, Wake, Johnston, and the Swan Islands were separately enumerated in the 1970 decennial census, as they had been in 1950 and 1960. Sand, Canton, and Enderbury Islands, which were enumerated in 1950 and 1960, were not inhabited in 1970. Midway Island was enumerated for the first time in 1930, when its population was included with that of Hawaii. In 1940, the Hawaiian canvass included Midway, Johnston, Sand, Canton, Enderbury, Baker, Howland, and Jarvis Islands; the last three named were uninhabited in 1950, 1960, and 1970. The Corn Islands (leased from Nicaragua in 1914) were included in the Nicaraguan censuses of 1940 and 1950, and in the U.S. census in 1960. In April 1970, negotiations between the United States and Nicaragua were in progress leading to the abrogation on July 27, 1970, of the treaty under which these islands had been leased. It therefore was determined, in consultation with the Department of State, that the Corn Islands should not be included in the 1970 census. (Fletcher's Island, a drifting fragment of shelf ice approximately 7 x 2-1/2 miles in size in the Beaufort Sea several hundred miles off the Alaskan coast, was the site of a U.S. Navy research station at the time of the 1970 census. The personnel, mainly civilians, were included in the overseas population.)

### PUERTO RICO

#### Special Agreement with the Commonwealth Government

In October 1958, a special agreement was concluded between the Bureau of the Census and the Commonwealth Government concerning the conduct of censuses in Puerto Rico. The basic purposes of the agreement were to provide the Commonwealth with a large share of the



responsibility for the planning and conduct of the various censuses and to assure full consideration for the unique statistical needs of the Commonwealth Government. Each census thereafter has been conducted according to subsequent amendments of the basic 1958 agreement.

In November 1969, the agreement for the 1970 Censuses of Population and Housing (and also the 1969 Census of Agriculture) was signed by the Commonwealth Secretary of Education, the Chairman of the Puerto Rico Planning Board, and the Director of the Bureau of the Census. Some of the major provisions of this agreement were as follows:

1. A substantial number of population and housing items would be covered on a 20-percent sample basis.
2. The Bureau would establish a temporary office in Puerto Rico, from which the census would be supervised and coordinated. The supervisor would be a Bureau staff member.
3. The Puerto Rico Planning Board would assist the Bureau in obtaining office space, collecting maps and boundary information, and designating appropriate statistical areas. It also would provide advice on the questionnaire content and assist in publicizing the census.
4. The Commonwealth Department of Education would provide most of the temporary field staff, organized by means of census district offices in the six cities where the regional offices of the Department of Education were located. The agreement spelled out the conditions under which school personnel would be utilized. (See "Field Staff" below.)

### Organization of the Work

The various phases of the population and housing census program were developed by Bureau staff members in consultation with representatives of the Puerto Rico Planning Board and other Commonwealth agencies. Within the Census Bureau, a census coordinator for Puerto Rico was designated to plan and direct the census program. The Population, Housing, Statistical Methods, and Publication Services Divisions provided advice and technical assistance as needed on the development of questionnaire format and content, sampling procedures, tabulation plans, and publications.

The Field Division was responsible for the selection and training of the field staff, and for the collection of the data. The Geography Division was responsible for the preparation of all census maps. The preparation of the maps for the enumeration was contracted out to the Puerto Rico Planning Board, and the Geography Division reviewed the enumeration district (ED) boundaries and the block numbers shown on the maps; the maps in the published reports were designed and prepared by the Geography Division.

The completed questionnaires were coded and micro-filmed at the Bureau's facility in Jeffersonville, Ind., and computer processing was done at Bureau headquarters.

### Census Calendar

In March 1967, representatives of the Bureau met with officials of the Puerto Rico Planning Board to discuss plans for the census. Subsequently, a general plan was outlined, and the principal events in the census operation were scheduled and carried out in the following order:

#### 1968

Development of questionnaire content for the 1970 census with Puerto Rican officials.

#### 1969

Census pretest in Puerto Rico.  
Agreement signed between the Bureau of the Census and the Commonwealth of Puerto Rico regarding the conduct of the census.

Drafting of final census questionnaires, and transmittal to the Government Printing Office for production.

Preparation of instructions and training materials for the field staff.

Review and recording of the boundaries of barrios (minor civil divisions) and places, and numbering blocks by tract.

Preparation of enumeration maps.

#### 1970

Shipment of questionnaires, instructions, and training materials to the census office in San Juan, P.R.

Organization and training of the field staff.

Enumeration.

Preliminary editing of census questionnaires.

Release of preliminary population counts.

Shipment of all census materials to Jeffersonville, Ind.

#### 1971

Completion of specifications for coding, editing, and tabulation.

Tabulation of 100-percent data.

Coding of sample data.

Tabulation of sample data begun.

Preparation of tables for publication.

Publication and distribution of first reports, containing 100-percent data.

#### 1972-1973

Completion of tabulation, publication, and user summary tape programs.

## Changes From Previous Census Procedures

The principal innovation for the 1970 census in Puerto Rico was the use of FOSDIC-readable questionnaires for data collection and processing. In 1968, it was determined that the use of a questionnaire similar in design to the one planned for the United States would result in major advantages in processing the data. Coding, editing, and tabulation procedures developed for the Stateside census operations, as well as the clerical and technical work forces in Jeffersonville, could be utilized extensively. In the 1960 Census of Puerto Rico, standard schedules and punchcard tabulation equipment had been used to process the census data in San Juan. A major objective of the 1969 census pretest in Puerto Rico (see below) was to test the feasibility of using Spanish-language FOSDIC-readable questionnaires.

Another procedural change was to take the 1969 Census of Agriculture for Puerto Rico in conjunction with the population and housing census in 1970. In 1960 the two censuses were conducted separately.

### The 1969 Pretest

A test census was conducted between March and May 1969, in order to evaluate the procedures planned for the actual census to be taken in 1970. The specific objectives of the pretest were to determine (1) the feasibility of using machine-readable questionnaires in the enumeration, (2) the practicality of conducting the population and housing census simultaneously with the agriculture census, and (3) the difference in quality of work between schoolteachers hired as enumerators and other persons recruited from the general public.

The area covered in the pretest included portions of Mayagüez and San Juan cities and surrounding rural territory. One census office was opened in each city and a total of 60 enumeration districts (ED's) were delineated. The ED's chosen were equally represented between urban and rural areas--30 in each. In the Mayagüez area, 20 ED's were assigned to the schoolteacher-enumerators and 20 to the other enumerators.

The results of the test indicated that the FOSDIC-readable questionnaires were usable in the field. With regard to the simultaneous enumeration for the agriculture and population and housing censuses, the procedures were found satisfactory for training and supervising enumerators. The test, however, was not exhaustive enough to uncover a problem that occurred during the actual census followup; namely, the enumerators concentrated on completing the population and housing questionnaires at the expense of the agriculture forms because of the complexities and time associated with the latter. Another finding of the test was that the enumerators recruited from the general public tended to turn in lower quality work than the schoolteachers. The test also served as an aid in establishing piece-rate payments for listing and enumeration operations during the actual census.

A number of modifications were made to the 1970 questionnaires as a result of this pretest. Most of the changes were in wording or format, to make the questions clearer to respondents or to eliminate unnecessary

categories, such as "coal" as a cooking fuel. The categories for two 100-percent housing items, value and contract rent, were changed to allow more detailed description of low-cost housing.

### Questionnaires

Two FOSDIC-readable household questionnaires were developed for the 1970 Census of Puerto Rico based on the 1970 U.S. questionnaires with modifications for Puerto Rico. Both questionnaires were printed in Spanish. One, containing the population and housing inquiries that were asked for all persons and housing units, was used for 80 percent of the households. This questionnaire was issued in two ways: One, Form D-70, included instructions so that householders who received the questionnaire in advance of the census could complete it before the enumerator called. This form was distributed by the Post Office in urban areas. The other, Form D-71, which did not have an instruction sheet, was carried by enumerators who collected all of the data by direct interview in the remaining areas. One sample questionnaire, Form D-72, contained the complete-count items as well as a number of sample items; this form was used by the enumerator at every fifth housing unit. (There was one 20-percent sample in Puerto Rico, whereas in the United States there were two separate samples--15 percent and 5 percent--which, when combined, was a 20-percent sample.)

In rural areas all housing units were enumerated through personal visits beginning about March 17, 1970, 2 weeks before Census Day. The enumerator left a Form D-403, "Change in Household Status," at all units enumerated before April 1. If anyone was added to the household or left it between the time of enumeration and April 1, the respondent was asked to complete the form and mail it to the census central office in San Juan.

Because of the presence of large numbers of transitory non-Spanish-speaking persons on the island, the Individual Census Report (ICR), Form D-73, was printed in both English and Spanish. It contained the same complete-count and sample population items as the household questionnaires. As on the mainland, the ICR was used to enumerate guests and visitors in hotels, motels, and private homes with no one at their usual residences to give information to a census taker. In Puerto Rico the ICR also was used for residents of institutions, military barracks, and other group quarters for which housing information was not collected. The resultant data for these residents later were transcribed to FOSDIC-readable household questionnaires; the data from every fifth ICR were transcribed to a sample Form D-72, while a short Form D-71 was used for the balance.

The D-71, D-72, and D-73 forms for Puerto Rico resembled those used on the mainland in size, format, and number of inquiries. About four-fifths of the population items and half of the housing items were the same. A few of the U.S. questions were modified in order to obtain information useful to the Commonwealth Government. Six of the population items and 15 of the housing inquiries were unique to the Puerto Rico questionnaires, and roughly the same number of Stateside items were excluded. The principal variations were as follows:

Population.--Among the complete-count questions, the marital status inquiry in Puerto Rico included the category

"consensually married." The category was added in 1960 because of the frequency with which this status had been reported in previous censuses. The question on color or race, asked in the United States, was omitted (as it had been in 1960) in accordance with recommendations of officials of the Commonwealth statistical offices.

Several sample population items were added to the Puerto Rico questionnaires that were not included in the census Stateside. These were as follows, by item number (the items are shown in Spanish as they appeared on the questionnaire; the English translation is supplied for this procedural history):

15. ¿Sabe esta persona leer y escribir?  
(en cualquier idioma)  
☐ Sí ☐ No

15. Does this person know how to  
read and write  
(in any language)?  
☐ Yes ☐ No

16. ¿Sabe esta persona hablar inglés?  
☐ Sí ☐ No

16. Can this person speak English?  
☐ Yes ☐ No

18c. Durante los últimos 5 años,  
¿vivió alguna vez en los Estados  
Unidos por 6 meses o más?  
☐ Sí ☐ No (Pase a la 19)

18c. During the last 5 years, did he  
live in the United States at any  
time for 6 months or more?  
☐ Yes ☐ No (skip to 19)

18d. ¿En qué año regresó a Puerto  
Rico la última vez?  
☐ 1965 ☐ 1967  
☐ 1966 ☐ 1968  
☐ 1969 or 1970

18d. What year did he return to  
Puerto Rico last time?  
☐ 1965 ☐ 1967 ☐ 1969 or  
☐ 1966 ☐ 1968 1970

18e. ¿Por cuánto tiempo vivió en los  
Estados Unidos  
(la última vez)?  
☐ 6 meses a un año  
☐ Uno o dos años  
☐ Tres a cuatro años  
☐ Cinco años o más

18e. How long did he live in the  
United States (the last time)?  
☐ 6 months to one year  
☐ One or two years  
☐ Three or four years  
☐ Five years or more

18f. Cuando esta persona vivió en los  
Estados Unidos, ¿estaba--  
(Marque los círculos apropiados)  
Trabajando o dedicado a  
negocios? ..... ☐  
(por jornada completa o  
parcial)  
En las Fuerzas Armadas? .... ☐  
Asistiendo a una escuela o  
colegio? ..... ☐  
Haciendo otra cosa? ..... ☐  
(ama de casa, jubilada, etc.)

18f. When he lived in the United  
States, was he--  
(mark the appropriate circles)  
Working at a job or business  
(full or part-time). .... ☐  
In the Armed Forces ..... ☐  
Attending school or college .. ☐  
Doing something else  
(housework, retired, etc.)... ☐

The questions on duration of residence and activity while in the United States were new in 1970.

The inquiry on means of transportation to work differed slightly from the one used on the Mainland; the Puerto Rican question included the categories "public car" and "ferry boat," and excluded rail transportation. For comparison, the U.S. question follows the Puerto Rican one below.

26d. ¿Qué medio de transportación  
usó para ir a trabajar? (Marque  
el medio usado más recientemente.)  
☐ Carro privado  
(conductor)  
☐ Carro privado  
(pasajero)  
☐ Guagua  
☐ Carro público  
☐ Lancha  
  
☐ Taxi  
☐ A pie solamente  
☐ Trabajó en su  
hogar  
☐ Otro medio--  
especifique \_\_\_\_\_  
Pase a la 30.

(26d. What means of transportation  
did he use to get to work?  
(Mark the most recently used one)  
☐ Driver, private car  
☐ Passenger, private car  
☐ Bus  
☐ Public car  
☐ Ferry Boat  
  
☐ Taxi  
☐ Walked only  
☐ Worked at home  
☐ Other means  
Specify. \_\_\_\_\_)  
Skip to question 30.

(U.S.)=

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  
☐ Passenger, private auto  
☐ Bus or streetcar  
☐ Subway or elevated  
☐ Railroad  
☐ Taxicab  
☐ Walked only  
☐ Worked at home  
☐ Other means--Specify \_\_\_\_\_  
After completing question 29d,  
skip to question 33.

The following sample items, asked in the United States, were not included in the Puerto Rico questionnaires:

Citizenship and year of immigration  
Mother tongue  
Spanish origin or descent  
Marital history  
Activity 5 years ago  
Occupation and industry 5 years ago  
Work disability

Housing.--Several of the complete-count housing items used on the Mainland were modified for Puerto Rico because of the difference in housing characteristics. The question on presence of a basement was not included in the Puerto Rico questionnaire. The following items are shown in the order in which they appeared in Spanish on the Puerto Rico questionnaire (left-hand column) together with the English translation supplied for this procedural history. The question as it was used in the United States appears immediately below.

In the United States, the question, "Do you have complete kitchen facilities?" specified the presence of a sink with piped water, a range or cookstove, and a refrigerator. For Puerto Rico, the question (V3) was limited to "cooking

facilities," which were defined as a permanently installed range or cookstove (electric, gas, or other fuel), whether or not used regularly, or portable electric appliances (electric skillet, electric grill, etc.) if used for the regular preparation of meals. In both versions the question was to be answered by simply marking the appropriate FOSDIC circle.

V3. ¿Tiene usted facilidades de cocina? (Incluya estufa, fogón u hornillo portátil si lo usa regularmente en la preparación de sus comidas.)

☐ Sí, para uso exclusivo de este hogar

☐ Si, pero usadas también por otro hogar

☐ Sin facilidades de cocina

H3. Do you have cooking facilities? (Include a range; stove, or portable cooking facilities if used regularly in the preparation of meals.)

☐ Yes, for this household only.

☐ Yes, but also used by another household

☐ No cooking facilities

(U.S.)=

H3. Do you have complete kitchen facilities? Complete kitchen facilities are a sink with piped water, a range or cook stove, and a refrigerator.

☐ Yes, for this household only

☐ Yes, but also used by another household

☐ No complete kitchen facilities for this household

Questions regarding the availability of a refrigerator and of a kitchen sink with piped water, and the location and type of cooking facilities, were included among the sample items (see below).

In the United States, vacant housing units were classified as "year round," "seasonal," or "migratory." In Puerto Rico (item D) only the first two categories were included, as migratory housing units were virtually nonexistent on the island.

D. Clasificación de la vacante

Todo el año

☐ Para alquiler

☐ Para venta únicamente

☐ Alquilada o vendida, pero desocupada

☐ Para uso ocasional

☐ Otra vacante

☐ Estacional

D. Vacancy status

Year round

☐ For rent

☐ For sale only

☐ Rented or sold, not occupied

☐ For occasional use

☐ Other vacant

☐ Seasonal

(U.S.)=

C. Vacancy status

Year round—

☐ For rent

☐ For sale only

☐ Rented or sold, not occupied

☐ Held for occasional use

☐ Other vacant

☐ Seasonal

☐ Migratory

The question on value (V10) was the same for Puerto Rico as on the Mainland except for the following: The value categories for Puerto Rico ranged from "less than \$500" to "\$30,000 or more," whereas in the United States the categories were "less than \$5,000" to "\$50,000 or more." In the States the value question was asked and tabulated for owner-occupied and vacant-for-sale one-family homes on less than 10 acres and with no business establishment on the property; in Puerto Rico the question was asked for all owner-occupied and vacant-for-sale one-family homes, but tabulation was limited to those that were (a) on less than 3 cuerdas of land, and (b) did not have a business on the property. (A cuerda is approximately 0.97 acre.)

V10. Si vive en una casa de una sola familia que es de su propiedad o que está pagando—

¿Por cuánto usted cree que esta propiedad (vivienda y solar) podría ser vendida si estuviera a la venta? (Si el solar es alquilado, estime el valor del solar y añádasele al valor de la casa.)

☐ Menos de \$500

☐ \$500 a \$999

☐ \$1,000 a \$1,999

☐ \$2,000 a \$2,999

☐ \$3,000 a \$4,999

☐ \$5,000 a \$7,499

☐ \$7,500 a \$9,999

☐ \$10,000 a \$14,999

☐ \$15,000 a \$19,999

☐ \$20,000 a \$29,999

☐ \$30,000 o más

H10. 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 land) would sell for if it were for sale? (If land is rented, estimate the value of the land and combine it with the value of the house.)

☐ Less than \$500

☐ \$500 to \$999

☐ \$1,000 to \$1,999

☐ \$2,000 to \$2,999

☐ \$3,000 to \$4,999

☐ \$5,000 to \$7,499

☐ \$7,500 to \$9,999

☐ \$10,000 to \$14,999

☐ \$15,000 to \$19,999

☐ \$20,000 to \$29,999

☐ \$30,000 or more

(U.S.)=

H11. 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?

☐ Less than \$5,000

☐ \$5,000 to \$7,499

☐ \$7,500 to \$9,999

☐ \$10,000 to \$12,499

☐ \$12,500 to \$14,999

☐ \$15,000 to \$17,499

☐ \$17,500 to \$19,999

☐ \$20,000 to \$24,999

☐ \$25,000 to \$34,999

☐ \$35,000 to \$49,999

☐ \$50,000 or more

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.

The question on contract rent (V11) also was the same for Puerto Rico as for the States, with the following modifications: The contract rent categories for Puerto Rico ranged from "less than \$10" to "\$200 or more," on the Mainland the contract rent categories ranged from "less than \$30" to "\$300 or more." Although in both the States and Puerto Rico the question was asked for all renter-occupied and vacant-for-rent homes, the tabulated data for Puerto Rico excluded one-family homes on 3 cuerdas or more of land, while in the United States tabulation excluded one-family homes on 10 acres or more.

**V11.** Conteste esta pregunta si paga renta por su vivienda.

a. Si paga renta mensual—

¿Cuál es su renta mensual?

Escriba la cantidad aquí

\$ . . . . .00

(Al dólar más cercano)

Y

llene un círculo aquí

☐ Menos de \$10

☐ \$10 a \$19

☐ \$20 a \$29

☐ \$30 a \$39

☐ \$40 a \$49

☐ \$50 a \$59

☐ \$60 a \$69

☐ \$70 a \$79

☐ \$80 a \$89

☐ \$90 a \$99

☐ \$100 a \$119

☐ \$120 a \$149

☐ \$150 a \$199

☐ \$200 o más

b. Si no paga renta mensual,

¿Cuál es su renta, y qué período de tiempo cubre?

\$ . . . . .00

(Al dólar más cercano)

por . . . . .

(Semana, quincena, año,)

**H11.** Answer this question if you pay rent for housing unit.

a. If you pay rent by the month—

What is your monthly rent?

Write the amount here \$ . . . . .00

(Nearest dollar)

AND

Fill one circle here

☐ Less than \$10

☐ \$10 to \$19

☐ \$20 to \$29

☐ \$30 to \$39

☐ \$40 to \$49

☐ \$50 to \$59

☐ \$60 to \$69

☐ \$70 to \$79

☐ \$80 to \$89

☐ \$90 to \$99

☐ \$100 to \$119

☐ \$120 to \$149

☐ \$150 to \$199

☐ \$200 or more

b. If you do not pay monthly rent,

What is your rent, and what period of time does it cover?

\$ . . . . .00

(Nearest dollar)

per . . . . .

(week, half month, year, etc.)

**V12.** ¿Es el dueño de la unidad de vivienda también dueño del solar, o renta el solar?

☐ Propietario o en proceso de comprarlo

☐ Paga renta por el solar

☐ No paga renta por el uso del solar

**H12.** Is the owner of the housing unit also owner of the land or does he rent the land?

☐ Owner or buying the land

☐ Pays rent for the land

☐ Does not pay rent for use of the land

**V13.** Si el solar es rentado—  
¿Cuánto paga mensualmente por el solar?

\$ . . . . .00

(Al dólar más cercano)

**H13.** If the land is rented—  
What is the monthly rent for the land?

\$ . . . . .00

(Nearest dollar)

**V14.** ¿Está hipotecada esta propiedad?

☐ Sí

☐ No

**H14.** Is there a mortgage on this property?

☐ Yes ☐ No

**V16.** Localización y clase de inodoro.

☐ Inodoro en esta estructura

☐ Inodoro fuera de la estructura

para uso exclusivo de este hogar

☐ Inodoro fuera de la estructura,

usado también por otro hogar

☐ Letrina

☐ No hay inodoro o letrina

**H16.** Location and type of toilet

☐ Flush toilet in this structure

☐ Flush toilet outside structure,

for this household only

☐ Flush toilet outside structure,

also used by another household

☐ Privy

☐ No flush toilet or privy

(U.S.)=

**H12.** Answer this question if you pay rent for your living quarters.

a. If rent is paid by the month—

What is the monthly rent?

Write amount here \$ . . . . .00

(Nearest dollar)

and

Fill one circle

☐ Less than \$30

☐ \$30 to \$39

☐ \$40 to \$49

☐ \$50 to \$59

☐ \$60 to \$69

☐ \$70 to \$79

☐ \$80 to \$89

☐ \$90 to \$99

☐ \$100 to \$119

☐ \$120 to \$149

☐ \$150 to \$199

☐ \$200 to \$249

☐ \$250 to \$299

☐ \$300 or more

b. If rent is not paid by the month—

What is the rent, and what period of time does it cover?

\$ . . . . .00 per . . . . .

(Nearest dollar) (Week, half-month,

year, etc.)

**V17.** Localización del agua corriente por tuberías.

☐ En esta estructura

☐ Fuera de la estructura, en

la propiedad

☐ Fuera de la estructura, en

la calle, callejón o carretera

☐ No tiene agua corriente por tuberías

**H17.** Location of piped water

☐ In this structure

☐ Outside structure, on property

☐ Outside structure, on street,

road or highway

☐ No piped water

**V18.** ¿Tiene esta unidad un fregadero con agua corriente por tuberías?

☐ Sí

☐ No

**H18.** Does this housing unit have a kitchen sink with piped water?

☐ Yes ☐ No

**V19.** ¿Qué clase de nevera tiene?

☐ Mecánica (eléctrica o de gas)

☐ De hielo

☐ Ninguna

**H19.** What type of refrigerator do you have?

☐ Mechanical (Electric or gas)

☐ Ice

☐ No refrigerator

(In the United States the presence of a sink and a refrigerator was determined by the answer to the question on "complete kitchen facilities.")

**V20.** Clase o tipo de facilidades de cocina.

☐ Estufa o fogón

☐ Facilidades de cocina

portátiles

☐ No tiene facilidades de

cocina

**H20.** Type of cooking facilities?

☐ Range or cookstove

☐ Portable cooking facilities

☐ No cooking facilities

**V21.** Localización de los facilidades de cocina.

☐ En esta estructura

☐ En otra estructura

☐ Al aire libre

☐ No tiene facilidades de

cocina

**H21.** Location of cooking facilities?

☐ In this structure

☐ In another structure

☐ Outdoors

☐ No cooking facilities

A number of housing items were asked for sample housing units in Puerto Rico which were not included in any of the United States questionnaires. Statistics on these subjects were considered to be especially descriptive of housing in Puerto Rico. These items were as follows by number (the items are shown in Spanish as they appeared on the questionnaire; the English translation is supplied for this procedural history):

**V24. Tipo de construcción.**

Paredes de mampostería o concreto (concreto armado, bloques de concreto, piedra, bloques ornamentales, etc.):

- ☐ Con techo de concreto
- ☐ Con techo de armazón de madera

Paredes con armazón de madera

- ☐ Con base de mampostería o concreto armado, etc.
- ☐ Con base de zancos de madera
- ☐ Otro tipo de construcción

**H24. Type of construction.**

Masonry walls (poured concrete, concrete blocks, stone, ornamental blocks, etc.)

- ☐ With concrete slab roof
- ☐ With wood frame roof

Wood frame walls

- ☐ With masonry foundation, poured concrete, etc.
- ☐ With wood base foundation
- ☐ Other type of construction

**V27. Si no está en una finca--**

¿Produce usted frutas y vegetales o mantiene ganado en esta lugar para el consumo del hogar?

- ☐ Sí
- ☐ No

**H27. If not on a farm--**

Do you produce any fruits or vegetables or keep any livestock on this place for home consumption?

- ☐ Yes
- ☐ No

(U.S.)=

**H18. Last year, 1969, did sales of crops, livestock, and other farm products from this place amount to--**

- ☐ Less than \$50 (or None)
- ☐ \$50 to \$249
- ☐ \$250 to \$2,499
- ☐ \$2,500 to \$4,999
- ☐ \$5,000 to \$9,999
- ☐ \$10,000 or more

**V28. ¿Tiene esta vivienda alumbrado eléctrico?**

- ☐ Sí
- ☐ No

**H28. Does this housing unit have electric lighting?**

- ☐ Yes
- ☐ No

**V34. Condición de esta unidad--**

Construcción original adecuada

- ☐ Buena
- ☐ Deteriorándose
- ☐ Dilapidada

- ☐ Construcción original inadecuada

**H34. Condition of this housing unit--**

Original construction adequate

- ☐ Good
- ☐ Deteriorating
- ☐ Dilapidated

- ☐ Original construction inadequate

In addition to the variations in questionnaire content indicated above, a number of questions asked for sample housing units in Puerto Rico differed in scope or in the response categories provided for the corresponding questions on the Mainland. The principal differences are indicated below.

The farm-nonfarm question answered by the respondent in the United States by marking one of three categories, "On a city or suburban lot," "On a place of less than 10 acres," or "On a place of 10 acres or more," was completed by the enumerator in Puerto Rico by reference to his address register. He then marked one of two response categories.

**V26. Determinelo a base del Libro de Registro--**

¿Está la vivienda localizada en una finca?

- ☐ Sí, en una finca (Pase a la V28)
- ☐ No, no está en una finca

**H26. Determine from the Address Register--**

Is this house on a farm?

- ☐ Yes, on a farm (Skip to H28)
- ☐ No, not on a farm

(U.S.)=

**H17. Is this building--**

- ☐ On a city or suburban lot? (Skip to H19)
- ☐ On a place of less than 10 acres?
- ☐ On a place of 10 acres or more?

**V22. ¿Cuál combustible utiliza principalmente para cocinar?**

- ☐ Madera
- ☐ Carbón de leña
- ☐ Gas flúido
- ☐ Gas en tanques
- ☐ Electricidad
- ☐ Kerosena, aceite combustible, etc.
- ☐ Otro combustible
- ☐ No usa combustible

**H22. Which fuel is used most for cooking?**

- ☐ Wood
- ☐ Charcoal
- ☐ Utility gas
- ☐ Bottled or tank gas
- ☐ Electricity
- ☐ Kerosene, fuel oil, etc.
- ☐ Other fuel
- ☐ No fuel used

(U.S.)=

**H25a. Which fuel is used most for cooking?**

- Gas {
  - From underground pipes serving the neighborhood ☐
  - Bottled, tank, or LP. .... ☐
  - Electricity ..... ☐
  - Fuel oil, kerosene, etc. .... ☐
  - Coal or coke ..... ☐
  - Wood ..... ☐
  - Other fuel ..... ☐
  - No fuel used ..... ☐

The sample questionnaires in the United States carried a question on value of farm production that was limited to housing units not on a city or suburban lot; in Puerto Rico these data were collected only for farms, and were entered on a 1969 Census of Agriculture questionnaire. The Puerto Rico population and housing questionnaire carried the following inquiry:

In the States the question on source of water provided three response categories; in Puerto Rico the corresponding inquiry had five possible responses.

**V29. ¿Qué medios utiliza usted para obtener el agua para su vivienda?**

- ☐ Acueducto público
- ☐ Pozo privado
- ☐ Aljibe, tanques o drones
- ☐ Canal de riego
- ☐ Manantial u otra fuente (rio, etc.)

**H29. What means do you use to obtain water for your housing unit?**

- ☐ Public system
- ☐ Individual well
- ☐ Cistern, tanks, or drums
- ☐ Irrigation canal
- ☐ Spring or other source (river, etc.)

(U.S.)=

**H19. Do you get water from--**

- ☐ A public system (city water department, etc.) or private company?
- ☐ An individual well?
- ☐ Some other source (a spring, creek, river, cistern, etc.)?

The Stateside inquiry on fuels used for cooking, house heating, and water heating, was limited in Puerto Rico to cooking fuel.



In the States the inquiry regarding television sets included a question about UHF equipment; in Puerto Rico no question was asked concerning UHF reception.

V31. ¿Tiene usted televisor?  
(cuente aquéllos que funcionen)

☐ 1 televisor  
☐ 2 televisores o más  
☐ Ninguno

H31. Do you have a television set?  
(Count sets in working order)

☐ 1 set  
☐ 2 or more sets  
☐ None

(U.S.)=

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

The Stateside inquiry concerning radios was limited to battery-operated sets; in Puerto Rico the inquiry asked whether the household had one or more radios of any type or none, and if any of the radios were battery-operated.

V32a. ¿Tiene usted radio?  
(Incluya radios en automóviles)

☐ 1 radio o más  
☐ Ninguno

V32b. ¿Es alguno de éstos radio de  
baterías?

☐ Sí  
☐ No

H32a. Do you have a radio?  
(Include car radios)

☐ 1 or more  
☐ None

H32b. Is any of these battery-operated?

☐ Yes  
☐ No

(U.S.)=

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

The response categories to the U.S. inquiry on automobiles ranged from none to three or more; for Puerto Rico the highest category was two or more.

V33. ¿Cuántos automóviles son  
propiedad o son usados  
regularmente por los miembros  
de este hogar? (Incluya los  
públicos y automóviles propiedad  
de la compañía en que trabaja  
y que se guardan en la casa.)

☐ Ninguno  
☐ 1 automóvil  
☐ 2 automóviles o más

H33. How many passenger cars are  
owned or used regularly by  
members of this household?  
(Include company-owned  
automobiles kept at home.)

☐ None  
☐ 1 automobile  
☐ 2 or more automobiles

(U.S.)=

H23. How many passenger automobiles  
are owned or regularly used by  
members of your household?  
Count company cars kept at  
home.

☐ None  
☐ 1 automobile  
☐ 2 automobiles  
☐ 3 automobiles or more

The following sample housing items asked in the United States were not included in the Puerto Rico questionnaire:

Heating equipment  
Number of bathrooms  
Air conditioning  
Stories, elevator in building  
Clothes washing machine  
Clothes dryer  
Dishwasher  
Home food freezer separate from refrigerator  
Second home

## Preparatory Work

Map preparation.--Maps showing the area to be covered by each enumerator, crew leader, and supervisor were prepared specifically for use during the enumeration. In 1969 the Bureau of the Census negotiated a contract with the Puerto Rico Planning Board for \$30,000 to define and delineate enumeration districts (ED's) and to acquire an up-to-date set of place maps for some towns and villages. The ED's were drawn on U.S. Geological Survey "quad" sets, Metropolitan Map Series maps, and place maps. These were then sent to the Bureau's Jeffersonville facility where final office, supervisor, crew leader, and enumerator maps were prepared along with various control listings. All materials then were shipped to Puerto Rico.

Approximately 4,870 ED's were defined and delimited geographically, so that urban ED's would contain approximately 150 housing units and 650 persons, and rural ED's would contain approximately 100 housing units and 550 persons.

Three SMSA's (standard metropolitan statistical areas) -- San Juan, Mayagüez, and Ponce -- comprised the tracted areas, and 221 census tracts were defined in them. The urbanized areas of the three SMSA's and four other cities -- Arecibo, Caguas, Guayama, and Humacao -- were included in the block statistics program for 1970. This involved the numbering and separate identification of approximately 6,900 blocks on the enumerators' maps.

Instruction and training materials.--The Enumerator's Handbook was the basic document prepared for the field staff. It identified the duties and responsibilities of the enumerator and described in detail the procedures to be followed in obtaining the desired information for the items on the questionnaires. Enumerators were required to carry their manuals with them during the taking of the census and to consult the handbook when questions arose in the field. Other instruction materials prepared for Puerto Rico included the Field Supervisor's Handbook, the Crew Leader's Handbook, and the Administrative Handbook. Training guides were written to correspond with the principal handbooks, and numerous reporting forms were designed for the control of field operations.

All of these materials were prepared in Spanish as well as in English. Whenever possible, the standard U.S. census instructions and training materials were adapted for use in Puerto Rico in 1970, as had been done in 1960. While the Puerto Rico Planning Board provided some assistance, most of the translations were

made by two Census Bureau staff members, who were Puerto Ricans by birth and had had considerable experience in the 1960 Census of Puerto Rico, and by a consultant under contract from the State Department.

The training materials were assembled in the Bureau's Jeffersonville facility and shipped to the island. The following table indicates the number of training kits assembled, by type:

Type	Kit No.	Quantity
Total		<u>8,800</u>
Rural enumerators	670A PR	2,500
Urban enumerators	670B PR	5,500
Instructor's kit (enumerators)	671 PR	400
Crew leaders	671A PR	400

Space and facilities.--Space for the seven census offices (one central office and six district offices) was obtained through the General Services Administration. Four of the offices were located in Government buildings and three were in commercial space. The cost of the latter averaged \$2.91 per square foot per annum, or a total of approximately \$7,000 for the 5 months they were in use. Some office furniture was borrowed from other Federal agencies and some equipment, such as typewriters and adding machines, was rented. Telephone service was arranged locally.

The central office, in San Juan, was opened in mid-January 1970; the six district offices--one each in San Juan, Ponce, Caguas, Mayagüez, Arecibo, and Humacao--were opened in early February.

Other preparatory work.--To aid in the enumeration of group quarters, a list of institutions and of certain other types of group quarters was prepared in advance of the census. For the enumeration, large institutions and group quarters were designated as separate ED's and assigned to special enumerators.

In January 1970, the Director of the Census Bureau met with the Governor of Puerto Rico in San Juan to review plans for the census. In mid-March the Governor issued a proclamation to the people of Puerto Rico, encouraging them to support the census activities and assuring them of the importance and benefits of cooperation.

The following supply kits were assembled in Jeffersonville and shipped to San Juan:

Kit No.	Description	Quantity
	Total number of kits	<u>13,422</u>
--	Office supplies	7
7PR	Administrative forms	7
7APR	Administrative forms	1
8PR	Envelopes and address labels	7
9PR	Crew leader's portfolio	400
9APR	Crew leader's notebook of forms	400
10PR	Enumerator's portfolio	5,100
10PR	Enumerator's supplies--rural	2,300
11APR	Enumerator's supplies--urban	2,800
11CPR	Rural enumerator's supplement	2,400

The following data-collection forms (in addition to those used for the agriculture census) were printed and shipped to Puerto Rico, either in bulk or as parts of supply kits listed above:

Form No.	Description	Quantity
D-70	Short questionnaire	410,000
D-71	Short questionnaire	540,000
D-72	Long (sample) questionnaire	180,000
D-73	Individual Census Report (ICR)	200,000
D-76	Return envelope for ICR	170,000
D-403	Change-in-household-status report	200,000

(The questionnaires are described on p. 3.)

The materials and supplies needed for the enumeration in Puerto Rico were shipped to the census central office in San Juan, and distributed from there. Most initial shipments arrived by March 17. Some of the enumerators' maps, notably those for rural parts of San Juan and Mayagüez, did not arrive until almost a week after the beginning of enumeration in rural areas. This caused some delay in the field operation.

### Field Organization

To collect the desired information for the 2.7 million persons and more than 700,000 housing units in Puerto Rico required a temporary field staff of approximately 5,500 persons. This included a central office director and his principal assistant, who directed the field operations; six district office managers and their six assistants; approximately 390 crew leaders; about 5,000 enumerators; and several dozen clerks in the central office.

The central office director and his assistant were detailed to San Juan from Census Bureau headquarters for approximately 6 months, and central office clerks were recruited in San Juan. The remaining organization was supplied by the Commonwealth Department of Education. The six census district offices covered areas roughly corresponding to the Department's six regions. Regional directors of education served as census district office managers, local school superintendents or principals served as crew leaders or field supervisors, and teachers comprised the staff of enumerators. In order to interfere as little as possible with the normal operation of the schools, most teachers used were from the lower grades where children were not in school all day. In some cases, however, classes were suspended for the 2-week enumeration period. All candidates were given selection aid tests to determine their eligibility for appointment. Space was allocated in the schools for training and administrative operations.

A small number of enumerators were recruited from outside the school system to complete the enumeration of institutions and other special living quarters. Military personnel within the larger installations were appointed as temporary census employees to complete the enumeration of barracks personnel.

### Payroll

A payroll unit was set up in the census central office in San Juan, and the field staff was paid through the San Juan branch of the U.S. Treasury regional disbursing office in New York. The following pay rates were set



for Puerto Rico (Note: Pursuant to the Federal Employees Salary Act of 1970, each pay period the gross earnings were computed using the rates shown, then increased by a flat 6 percent):

Position title

Enumerator	A. Hourly rate, \$1.90 per hour (except for training or when working at piece rates).		
	B. Piece rates as follows:		
		<u>Urban</u>	<u>Rural</u>
	Short questionnaire (including vacant units)	\$0.20	\$0.40
	Each person enumerated	.06	.08
	Long questionnaire (including vacant units)	.50	.85
	Each person enumerated	.15	.15
	Individual census report	.10	.10
	C. Additional payments:		
	Satisfactory completion of group training	19.00	28.50
Administrative clerk	Satisfactory completion of on-the-job training	5.00	7.50
	Mileage (where authorized)	.06	.06
Processing clerk	\$2.50 per hour		
Office clerk	\$2.00 per hour		
Crew leader	\$1.75 per hour		
	\$2.30 per hour		

The above rates were based on the Bureau's pay scale for temporary census field employees on the Mainland (see chapter 5 for details), adjusted downward to reflect a differential between the Puerto Rican and Stateside economies. Teachers and principals normally were paid \$3.50 to \$4.50 an hour for additional work in the Puerto Rico school system. The census pay scale therefore was considered extremely low, and many teachers acted as enumerators only because they considered the census as part of their job. Given the pay scale, recruiting office help outside the school system also was difficult; hence in some places fewer clerks were hired than authorized, and the staff was paid overtime instead. (Overtime was at the regular-time rate.)

### Data Collection

The enumeration of Puerto Rico was conducted in two phases. The enumeration of rural areas, constituting about 2,600 ED's, or one-half of the island's population, began on March 17. The purpose of the early start was to avoid the rainy season which normally begins in early April and makes passage in rural areas difficult and at times impossible, and also to allow the extra time needed to take the agriculture census. Enumeration of urban areas began on April 1.

This split enumeration worked extremely well for the population and housing census; by April 1, when the urban enumerators started to work, the rural enumeration was

about 90-percent complete. This resulted in an equitable distribution of the office clerical workload, and also in better control over the operations by the central office in San Juan.

Rural procedures.--Enumerators personally visited each housing unit and completed a population and housing questionnaire. The sample questionnaire was used at every fifth housing unit, selected through a random-start procedure. The enumerator also left a change-of-household-status report form which the respondent was asked to complete and mail to the census office if any changes took place in the composition of the household between the time of enumeration and April 1. (Few of these forms were received, however.) If the enumerator determined that the housing unit was located on a farm with value of sales less than \$1,200, he was instructed to complete an agriculture census report form as well; if value of sales exceed \$1,200, a longer agriculture census report form was left instead for the farm operator to complete and mail directly to the census office in San Juan. The enumerator pasted a label at the front door to indicate that the household had been enumerated. Thus duplication was avoided.

Urban procedures.--The urban enumeration was conducted by a combination of self-enumeration and personal interview similar to the conventional procedure used in the United States (see chapter 5). A form D-70 short questionnaire with a detachable instruction sheet was left in advance of Census Day by the letter carrier at every housing unit on his route. The householder was requested to complete this questionnaire and hold it for the enumerator's visit. Inconsistent answers were resolved and unfilled or incomplete forms were completed by interview during the enumerator's visit, and additional questions were asked for those households and housing units designated for the 20-percent sample.

Control of field operations.--As in previous censuses, the work of each enumerator was reviewed by a crew leader before the enumerator was paid. Work of less than acceptable quality was returned to the enumerator for additional work. Along with other checks on quality and completeness, the crew leader performed a partial prelisting of the households in each of his ED's which was compared with the enumerator's completed listing book. Several progress-reporting forms were utilized to determine whether enumerators were on schedule and to keep the central office informed of overall progress.

Problems.--The enumeration was hampered by shortages of certain field forms and training kits, and late installation of telephone equipment hindered communication among the field staff. There also were short supplies of Form D-71 and D-72 questionnaires; these had to be shifted from place to place, and Form D-70 advance household questionnaires had to be used by enumerators. The short supply of Form D-72 (long) questionnaires, in particular, was caused by an underestimate of the number of housing units on the island. The Commonwealth Government had underwritten an extensive building program in which households were moved from older wooden buildings into masonry structures. The original buildings, vacant and still standing, had to be enumerated on separate census questionnaires in order to account for their status. A number of private condominiums also were under construction and

not ready for occupancy, but building had reached the stage where the units had to be enumerated. Approximately 30,000 Form D-72 questionnaires were printed locally on pink paper, to distinguish them from the regular (white) FOSDIC-readable forms. After the census was completed, a staff (averaging 30 clerks) spent about 3 weeks removing the pink questionnaires from the returns and transcribing the data to unused FOSDIC-readable forms that were salvaged from enumerators' kits.

Field processing.--The enumeration was virtually complete by the end of April 1970, and, with extensive overtime, all district offices were closed by the middle of May. The questionnaires and other materials were collected at the central office in San Juan for preliminary processing. Certain written entries for industry and occupation classifications on the sample questionnaires were reviewed, and the nearest English equivalent of the Spanish entry was entered just above the response on the questionnaire. (The review and translation of the entries was supervised by two technical experts made available from the Bureau of Labor Statistics of the Commonwealth Department of Labor.) This translation made it possible to have the industry and occupation entries coded by the trained coding staff in Jeffersonville. The preliminary population counts were compiled, and the counts for the island and all municipios and large cities were released on May 25, 1970. Central office operations were completed in June, when all population and housing census materials were shipped to Jeffersonville. However, the office space was utilized until September in order to complete the census of agriculture enumeration, which required extensive work throughout the summer months. (While the enumeration staff from the Puerto Rico school system successfully completed the population and housing census within the time allotted, this was done in part at the expense of the agriculture census: In enumerator training and in the conduct of the censuses, primary emphasis was given to locating and counting all persons and housing units. The schoolteacher-enumerators were not as well prepared either by training or by their own personal backgrounds to identify farming operations--particularly in places where there was no knowledgeable respondent living on the land.)

### Processing the Data

At the Bureau's facility in Jeffersonville, the Puerto Rico questionnaires were processed in much the same manner as those for the United States. (These procedures are described in detail in chapter 8.) Minor variations were necessary in the manner in which the Puerto Rico questionnaires were handled, and these are described briefly below.

Coding.--General coders reviewed the entries for certain items, and detected missing or inconsistent responses through familiarity with the question sequence and with technical guidance. For written entries concerning relationship to head of household, coders used a list of translations, and referred problem cases to a technician with an understanding of Spanish. Industry and occupation entries were coded according to the established procedures (a number of the entries already had been translated into English in San Juan), but problem cases were referred to Spanish-language

technicians. A universal area code (UAC) scheme unique to Puerto Rico was prepared for the place-of-work coding operation which corresponded in format with the UAC for the United States. This resource permitted the coders to enter numeric codes for each place for which these data were to be tabulated.

Computer editing and allocation procedures.--After the Puerto Rico questionnaires were microfilmed data were transferred to magnetic tapes in the FOSDIC operation at Bureau headquarters in Suitland. These tapes then were processed through the various computer programs prepared for Puerto Rico. The programs for editing unacceptable entries and allocating missing information were adapted from the U.S. computer programs (described in chapter 15). The weighting of the sample data followed the U.S. pattern, modified to accommodate the single, 20-percent sample used in Puerto Rico. Editing procedures were designed for the items on the Puerto Rico questionnaires that did not appear on the U.S. questionnaires.

### Tabulation and Publication

The tabulation program for Puerto Rico was designed to provide data as nearly comparable as possible to those published for the United States. In 1970, table outlines for the several printed publication series planned for Puerto Rico were prepared by the Bureau and reviewed by officials of the Commonwealth Government. The final table outlines were generally satisfactory to the reviewers, but the need for comparability with United States statistics and the use of Stateside computer processing procedures imposed some restrictions on the kinds and level of detail that could be provided in the printed reports.

As for the United States, six tabulation counts were prepared for Puerto Rico. These counts were used for the publication of printed reports and for the production of six census summary tape files for users which were similar in scope and content to the user tapes prepared for the States.

Printed reports for Puerto Rico, containing both English and Spanish captions and text, were included in the preliminary (but not the advance) population and housing report series and in the following final series: Population Series PC(1)-A, B, C, and D, and Population Volume I; Housing Series HC(1)-A and B, and Housing Volume I; Housing Series HC(2) and HC(3); and Joint Population and Housing Series PHC(1). The following steps were taken to prepare the final reports for Puerto Rico:

#### Text

1. Preparation of text in English
2. Translation of text into Spanish
3. Text typed in English and Spanish
4. Text reviewed and corrected

#### Tables

1. Table outlines approved
2. Table outlines translated into Spanish
3. Data on high-speed printer output reviewed
4. Tables typed with English and Spanish headings
5. Tables reviewed and corrected

Charts

1. Black-and-white chart sketches prepared and data provided in manuscript form
2. Charts prepared in Spanish and English by graphics contractor
3. Charts reviewed and corrected

Text and tables

1. Page numbers and titles added
2. Report reviewed and corrected
3. Report sent to print

Virtually all of the printed reports for Puerto Rico were prepared manually, using conventional cold-type composition. Only the tables in the block statistics reports, series HC(3), were composed by means of the Linotron phototypesetting system (the system used for the bulk of the tables in the U.S. reports). Because all Puerto Rico tables required both English and Spanish headings, the Bureau was unable to produce the more complicated tables efficiently by the phototypesetting process, which lacked certain diacritical marks. (For further information on Linotron, descriptions of the various printed report and summary tape series, and release dates for those pertaining to Puerto Rico, see chapter 10.)

Editorial planning and typing of the Puerto Rico reports was time-consuming because of two factors: (1) difficulties in editing, typing, and proofreading Spanish text and table headings by non-Spanish-speaking publications personnel, and (2) the uniqueness of all components of each publication compared with the "billerplate" standard text, front matter, and table elements of the State reports. In effect, the editorial planning and typing of a single Puerto Rico report required nearly the same amount of time as that for a complete series of State reports.

## OUTLYING AREAS

### Arrangements for the Censuses

For American Samoa, the Canal Zone, Guam, and the Virgin Islands, agreements were negotiated with the respective Governors to collect the desired information. For the Trust Territory of the Pacific Islands, a similar agreement was reached with the High Commissioner. The Bureau of the Census agreed to furnish the maps, questionnaires, instructions, training materials, and office supplies. The ranking official of each area, or his designated representative, was to recruit and train his own staff, handle appointments and payrolls, arrange for space and equipment, submit regular reports on the progress of the enumeration, and review and ship all census forms to the Bureau. For the five areas in which agreements were made with the Governor or ranking official to conduct the census, the censuses included both population and housing inquiries. In each of the areas except the Canal Zone the census also included agriculture.

For Midway Island, arrangements were made with the Commanding Officer, Midway Naval Station, to distribute, collect, and return the necessary census forms. Similar arrangements were made for the enumeration of Johnston

Island. For Wake Island, the Federal Aviation Administration's Island Manager conducted the enumeration, and for the Swan Islands forms were distributed and returned through the Weather Bureau (i.e., the Environmental Science Services Administration, now the National Oceanic and Atmospheric Administration).

Data-collection forms.--For the four small islands mentioned above, a limited census form, D-83, containing several population items, was used to determine the total number of inhabitants of each island. No information concerning characteristics of the population was tabulated or published. For the five major outlying areas, a single household questionnaire, Form D-81 (FOSDIC-readable for the first time), was used to collect population and housing information. There was no sample. The front cover of the questionnaire was identical for each area, except for name; it allowed the entry of unique geographic information, as well as street address, housing-unit serial number, and ED number. The back cover contained screening questions whereby the enumerator determined if the place should be included in the agriculture census. (The farm screening questions for the Virgin Islands varied from those used elsewhere. Separate agriculture questionnaires were designed for each area.) The housing items appeared first on the D-81 questionnaire, followed by two facing pages for each person (up to eight persons) in the household. This arrangement was the most efficient for subsequent automatic data processing.

Form D-82, an Individual Census Report (ICR), was a reproduction of the Form D-81 pages for persons, and thus contained only the population items. This form was used for the enumeration of persons living in hotels, group quarters such as college dormitories, barracks, institutions, or boarding houses; and for visitors in private households. This ICR was FOSDIC-readable, so the data did not have to be transcribed.

In 1969, the proposed housing and population items were submitted for comments to each of the governing officials of the five major areas, and to the extent feasible their comments were incorporated in the design of the final questionnaires.

The data-collection forms for the outlying areas were printed in the following quantities:

<u>Form No.</u>	<u>Title</u>	<u>Quantity</u>
D-81	Household questionnaire	132,000
D-82	Individual Census Report for Territories	65,000
D-83	1970 Census Questionnaire for Specified Areas	6,000
D-84	Return envelope for Form D-82	50,000

These forms are reproduced in U.S. Bureau of the Census, 1970 Census of Population and Housing: Data-Collection Forms and Procedures, Series PHC(R)-2.

The Form D-81 household questionnaire contained 24 population and 20 housing items. These generally were the same as in the United States, with some modifications to meet local needs and interests. The definition of a housing unit was modified to reflect local usage: any living quarters with direct access, or with cooking facilities for exclusive use, whether inside or outside the structure, was considered to be a separate housing unit. The housing items included inquiries on sources of water and on the use of salt water for toilet-flushing purposes.

The population items differed from those for the United States as follows: The item on race was included only on the form for the Virgin Islands; marital status included a separate category for "consensually married;" the place-of-birth item included separate categories for the identification of aliens and on length of residence for persons born outside the area of enumeration. In other respects the population items were virtually identical to the complete-count and 15-percent sample items asked on the U.S. questionnaires.

Geographic preparations.--In 1969, boundary and map information was obtained by the Bureau of the Census for each of the five major areas from all available sources. Each area was divided into ED's for assignment to enumerators. The original number of ED's delineated in each area was as follows:

American Samoa	95
Guam	122
Virgin Islands	60
Canal Zone	82
Trust Territory	272

The ED's ranged in average size from approximately 100 persons in the Virgin Islands to approximately 600 persons in Guam. However, during the actual enumeration a number of ED's were subdivided into two or more ED's in order to reduce or equalize workloads of individual enumerators. ED's were delineated so that their boundaries were as consistent as possible with the boundaries of administrative or political subdivisions of each area. The primary divisions were administrative or judicial districts, or islands; certain of these were further subdivided into counties in American Samoa, quarters in the Virgin Islands, and municipalities in the Trust Territory of the Pacific Islands. Cities, towns, and villages also were identified insofar as possible; however, these places generally were closely settled centers of population without corporate limits. Boundaries were based on local information, and in a few cases were determined arbitrarily for enumeration purposes. In the Trust Territory, many ED's consisted of individual islands or atolls scattered throughout more than 3 million square miles of the Pacific Ocean.

Staffing and other preparatory work.--In accordance with terms of the agreements the recruitment, training, and supervision of the field staff in each of the five major areas was the responsibility of a census supervisor designated by the Governor (or High Commissioner). In consultation with each of these officials, the Bureau of the Census established a budget for the field work, together with a suggested allocation of expenditures among wages, travel, office expenses, and other items. With minor exceptions, these budgets were adequate for completing the field work.

Candidates for employment were given selection aid tests by the census supervisor; those selected completed appointment affidavits and took the oath of office required of all census employees. They thereby became temporary Federal employees without direct compensation from the Census Bureau. Payroll procedures were handled by the local government, and the Bureau reimbursed the local government for the costs incurred.

Several aids to enumeration were prepared in Washington for use by supervisors, assistant supervisors, and enumerators. These aids were as follows:

Form D-581	Enumerator's Reference Manual
Form D-583	Supervisor's Reference Manual
Form D-409	Enumerator's Daily Record of Progress
Form D-410	Supervisor's Record of ED Assignments
Form D-411	Supervisor's Progress Report

In addition, ED maps, census forms and questionnaires, and office supplies were issued to each census supervisor. Additional written instructions were issued from time to time to resolve problems that arose and to assure the completion of all steps in the enumeration.

### The Enumeration

Although the censuses in each area were scheduled to be taken as of April 1, 1970, and conducted as close to that time as possible, the late arrival of materials and local difficulties in recruiting adequate field staffs resulted in delays of one to 3 weeks in most areas. In the Trust Territory, where it was necessary to rely heavily on schoolteachers, most of the enumeration was conducted during the summer months.

After an office review of all completed questionnaires to determine that each area had been enumerated properly, the materials were packaged and shipped by air freight to the Bureau's facility in Jeffersonville, Ind. Materials generally were received between June and September 1970, but the final shipment from the Trust Territory was not received until January 1971.

### Processing the Data

The editing, coding, and processing of the questionnaires followed the same general procedures established for the United States. Special clerical sections were organized in Jeffersonville to handle the editing and coding of the questionnaires, which started in December 1970. Difficulties in editing were encountered as a result of inadequate geographic information on the covers of many of the questionnaires, and because of the occasional failure on the part of the enumerator to assign housing-unit serial numbers properly. Geographic problems were referred to the appropriate specialists, who allocated questionnaires to the proper geographic areas whenever possible. Mechanical edits, which were designed in advance, resolved some of the problems of identifying separate housing units where serial numbers were missing or incorrect.

Codes were assigned clerically to written entries for detailed family relationship, place of birth, residence 5 years ago, and, for persons in the labor force, industry and occupation. Coding instructions and referral procedures generally were the same as those used for U.S. questionnaires. The standard classification systems for the United States were used for industry and occupation codes.

The questionnaires were microfilmed and processed through the FOSDIC operation, in which corrections were made for certain missing, incomplete, or inconsistent entries. Diaries were produced and reviewed, and units

of work requiring further correction were referred to clerks for action. These units then were recycled through the FOSDIC operation until satisfactory quality was obtained for input to the computer tabulation operations.

Using computer tabulation programs adapted from those prepared for the U.S. data, the data for the five major outlying areas were processed and sorted to assemble basic record files. These files were processed through additional computer programs in order to produce (1) final population and housing counts for each area and its geographic subdivisions, and (2) tabulations of characteristics of the population and the housing in the detail required for publication.

## Publication Program

For American Samoa, the Canal Zone, Guam, the Trust Territory of the Pacific Islands, and the Virgin Islands, separate reports were issued in Population Series PC(1)-A, Number of Inhabitants. These reports presented population counts for each area, its principal subdivisions (by urban and rural residence for the Canal Zone, Guam, and the Virgin Islands), and places.

For each of the five areas, Series PC(1)-B, General Population Characteristics, and Population Volume I present general social and economic characteristics for the area (by urban and rural residence where applicable), its principal districts or islands, and for places of 1,000 inhabitants or more.

Series HC(1)-A, General Housing Characteristics, and Housing Volume I present characteristics of occupied and vacant housing units for the area (by urban and rural residence where applicable), for districts and islands, and for selected places.

Because of the uniqueness of the text, front matter, and table elements, these reports required much custom preparation in comparison with the State reports. Even though the number of pages was small, an inordinate amount of editorial planning, typing, review, and correction was necessary. For the method of composition and issue dates of these reports, see chapter 10.

Most of the data for the outlying areas were included in the publications described above. For some items the data were tabulated in somewhat greater detail than is shown in the published reports, and unpublished data were made available for the cost of performing special tabulations of the desired information.

## COSTS

The costs for the enumeration and related work for the Nineteenth Decennial Census shown below include depreciation, but they do not include the cost of general administration, other general expense, or capital outlay which were recorded only at the appropriation level. These costs are shown in the 1970 Census of Population and Housing cost summary in chapter 1 of the procedural history. The costs associated with Puerto Rico and the outlying areas, distributed by fiscal year, were as shown below.

Project	1969	1970	1971	1972	1973 <sup>2</sup>	Total
Total.....	\$43,196	\$1,665,862	\$363,435	\$216,611	\$140,582	\$2,429,686
Puerto Rico, pretest.....	43,196	-	-	-	-	43,196
Puerto Rico, preparation.....	-	80,756	2,764	-	-	83,520
Puerto Rico, data collection.....	-	1,458,094	<sup>2</sup> (125,565)	-	-	1,332,529
Puerto Rico, data processing.....	-	62,829	189,615	150,760	40,982	444,186
Outlying Areas, data collection..	-	45,139	202,578	635	-	248,352
Outlying Areas, data processing..	-	19,044	94,043	31,054	-	144,141
Puerto Rico, publication.....	-	-	-	25,439	99,600	125,039
Outlying Areas, publication.....	-	-	-	8,723	-	8,723

- Represents zero.

<sup>1</sup>Estimated

<sup>2</sup>Correction of costs; amount transferred to 1969 Census of Agriculture.

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\*Crew Leader's Handbook [Puerto Rico]. 1970 Census. 1969. 126 pp. (Form D-571).

\*Enumerator's Handbook [Puerto Rico]. 1970 Census. 1969. 162 pp. (Form D-570).

\*Field Supervisor's Handbook [Puerto Rico]. 1970 Census. 1969. 89 pp. (Form D-572).

Guide for Training Enumerators [Outlying Areas]. 1970 Census. 1969. 45 pp. (Form D-681).

\*Office Operations Manual [Puerto Rico]. 1970 Census. 1969. 121 pp. (Form D-573).

Supervisor's Reference Manual [Outlying Areas]. 1970 Census. 1969. (Form D-583).

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\*Also issued in Spanish translation, using the same form numbers.