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BY THE COMPTROLLER GENERAL
Report To The Chairman, Subcommittee
On Census And Population, Committee On
Post Office And Civil Service
House Of Representatives
OF THE UNITED STATES

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Problems In Test Censuses Cause Concern For 1980 Census

The 1980 Decennial Census, which is now underway, affects the distribution of seats in the Congress as well as the disbursement of billions of dollars.

Tests conducted by the Bureau of the Census in preparation for the 1980 census significantly overran scheduled completion dates. Principal problems were low mail response, difficulties in recruiting and retaining personnel, and lower than expected productivity.

To meet statutory reporting deadlines for the 1980 census, the Bureau took measures to remedy these problems. However, mainly because of budgetary limitations, the Bureau has not adjusted its payment scale, which contributed to staff turnover in the test censuses. Additionally, the Bureau has not actively recruited part-time help, which could have aided in obtaining needed staff.

Because of operational difficulties, the Bureau has advised the Congress that it may not have sufficient funds to complete the census as planned. GAO believes the responsible congressional committees should consider the effect on the census (population count and quality of data) if plans must be altered.



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COMPTROLLER GENERAL OF THE UNITED STATES
WASHINGTON, D.C. 20548

B-198891

The Honorable Robert Garcia
Chairman, Subcommittee on
Census and Population
Committee on Post Office
and Civil Service
House of Representatives

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Dear Mr. Chairman:

In a previous report, 1/ we responded to your February 27, 1979, request to review the Bureau of the Census' ability to compile an accurate and complete mailing list for the 1980 Decennial Census. This report responds to additional questions in your letter concerning (1) the Bureau's low mail response rate in the last test census and (2) the Bureau's experience with temporary personnel in the test censuses and its plans for them in the 1980 census.

Public cooperation in returning census questionnaires, the Bureau's ability to recruit and maintain needed staff, and the productivity of temporary census enumerators in obtaining questionnaires from nonrespondents are critical to timely and successful completion of the census. The Bureau's expected response rates for questionnaires mailed for the 1980 census reflect test and past census experience and the expected benefits of a national census promotion. However, the basis for enumerator pay, which caused high turnover resulting in work not completed on schedule in the census tests, has not changed. Bureau officials advised us if the census process falls behind schedule, procedures for taking the census will have to be altered or eliminated. These changes would affect procedures designed to improve population coverage and data quality.

1/ "Problems in Developing the 1980 Census Mail List," (GGD-80-50, Mar. 31, 1980).

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In the census tests using the mail-out/mail-back procedure, higher than expected workloads, staff shortfalls, and generally lower than expected productivity combined to delay completing the tests. The workload and time for taking the census are greatly affected by the questionnaire mail response rates. Followup by enumerators is required for mailed-out questionnaires that are not returned and some of those not completely filled out by the respondents. The time needed for completing the census is also affected by enumerator productivity and the Bureau's ability to recruit and maintain an adequate work force.

The mail response rate in test censuses was generally far below the Bureau's expectations, particularly in Lower Manhattan where a 36 percent response rate 1/ occurred. However, the Bureau believed that increased promotion for the 1980 census would encourage greater public cooperation resulting in a higher response rate. The Bureau estimated that for areas like Lower Manhattan it would achieve a 52.5 percent response rate and for all other areas a 72 percent response rate. Bureau data as of April 10, 1980, shows that the estimates are being achieved--the mail response rate nationwide is about 72 percent, 64 percent for large urban areas and 73 percent for all other areas.

Enumerator productivity during test censuses was generally lower than anticipated. This low productivity, combined with problems in recruiting and retaining enumerators, resulted in significant delays in completing test censuses. The Bureau has expanded its enumerator recruiting and training for the actual census to improve production. However, some problems that affected test censuses and could affect the actual census have not been resolved.

1/Two mail response rates are used in census counts. A mail response from occupied households and a mail response to all mail-outs which consists of the total number of questionnaires mailed, including those sent to vacant households. The second response rate is used in this report because we are attempting to measure effort. The Bureau follows up on all nonresponses.

In four of five test censuses about which data are available, enumerator turnover ranged from 37 to 74 percent. Inadequate pay was the major reason given by the enumerators who quit during the test censuses. The Bureau has not remedied this problem. During the test censuses many enumerators did not earn the hourly wage advertised by the Bureau. Most enumerators are paid on a piece rate basis and must complete questionnaires at an expected standard of work to achieve the hourly wage. Enumerator production standards and piece rates for the 1980 census do not adequately reflect test census experience. According to the Bureau's records, the average enumerator productivity needed in the 1980 census to achieve the advertised hourly rate of pay is generally greater than that achieved in the test censuses.

Top Bureau officials acknowledge that some enumerators will not make the targeted wage and some will not make the minimum wage. However, they advised us that it is too late to raise the piece rates because of budgetary limitations. They said an increase in piece rates would be costly and no guarantee to reduce turnover.

Enumerators in the test censuses were paid at least the minimum hourly wage under the provisions of the Fair Labor Standards Act. For the 1980 census, to promote productivity and help control costs, the Bureau obtained an exemption from the minimum wage provisions of the act. If enumerator productivity in the 1980 census is similar to test census productivity, some enumerators will not earn the Federal minimum wage.

The Bureau is not taking full advantage of the part-time labor force. Enumerator recruiting is directed primarily towards persons willing to work a 40-hour week. Bureau studies show that the most productive enumeration work is in the evenings and on weekends. However, the Bureau will only actively seek part-time employees when it is unable to employ a sufficient number of full-time workers. We believe that waiting to actively recruit part-time employees places a greater burden on production needed to meet schedules for completing the census.

Significant delays in completing the census will make it difficult to meet the statutory dates for reporting the census results. The dates for taking and reporting the census results are governed by 13 U.S.C. 141. Census Day was April 1, 1980. The counts must be reported to the President by January 1, 1981, for determining the number of seats each State will have in the House of Representatives. Also, by April 1, 1981, the population totals for subdivisions within States, such as counties and cities, must be reported to State legislatures for potential redistricting.

We previously reported to the Subcommittee Chairman (GGD-79-7, November 9, 1978), that the Bureau planned to spend \$367 million for the 1980 census to improve population coverage and the quality of data. The Bureau recently advised the Congress that more funds may be needed to complete the planned census procedures. Estimates ranged from \$25 million to \$50 million. The Bureau has already made some program reductions and identified some census procedures that will be either conducted at a reduced level of effort or eliminated, depending on funding deficiencies.

We believe that the appropriate committees of the Congress should consider the Bureau's plans for altering census procedures. The Bureau's plans should include the effect on population coverage improvement and data quality if procedures are altered or eliminated because of funding shortages or other potential operational problems, such as low enumerator productivity and greater than expected turnover.

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The appendix contains more detailed information on the mail response rates to questionnaires and production experienced in the census tests and expectations for the 1980 census. We have also included information on average enumerator hourly wages that might be achieved for the 1980 census, considering the experience of the census tests, and the census procedures identified by the Bureau which may be curtailed if funding or other operational difficulties arise.

In this review we examined Bureau records on the test censuses, including progress reports, correspondence, operations manuals, and budgets. We also interviewed Bureau officials and obtained the views of enumerators who worked on the Lower Manhattan test census. Our analysis of enumerator

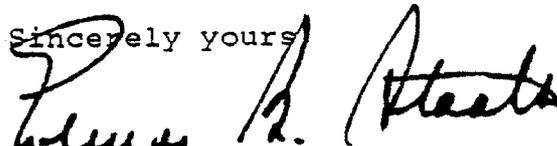
productivity in the test censuses was restricted by data limitations, such as the lack of records on the number of enumerators who were paid the minimum wage, composite payroll information on the tests, hours worked, and the number of persons working as reported on test census progress reports.

The findings in this report were provided to your staff on February 12, 1980. At your request, we did not obtain written agency comments on the report. However, our findings were discussed with Bureau officials and their comments are considered in the report.

As agreed with your office, we plan no further distribution until 30 days from the date of this report unless you publicly announce its contents earlier. At that time we will send copies to interested parties and make copies available to others upon request.

We are available to discuss our findings and to provide any further assistance you might need on the matters discussed in this report.

Sincerely yours



Lawrence H. Steets
Comptroller General
of the United States

PROBLEMS IN TEST CENSUSES
CAUSE CONCERN FOR 1980 CENSUS

INTRODUCTION

The 20th Decennial Census of Population and Housing, conducted by the Bureau of the Census, began March 28, 1980, when, according to the Bureau's plan, about 86 million questionnaires were delivered by mail to nearly all households in the United States. Census Day was April 1, 1980, and the results will have lasting importance over the next decade for determining seats in the Congress and affecting the distribution of billions of Federal dollars annually.

The census is required at 10-year intervals by article I, section II of the U.S. Constitution. By law (13 U.S.C. 141) the total population by States for apportionment is required to be given to the President by January 1, 1981. By April 1, 1981, the State legislatures receive the population totals for counties, cities, and certain recognized political and statistical subdivisions in their States for potential use in redistricting of their legislatures.

The census was authorized to determine the number of representatives each State could have in the Congress. However, census data is also used as a basis for the distribution of billions of Federal dollars annually through such programs as general revenue sharing to States, counties and cities, and for grants for job training, education, and other programs.

1980 census process

In the 1980 census, the Bureau is asking about 90 percent of the estimated 86 million households to return their questionnaire in the mail. The procedure is called mail-out/mail-back. The remaining 10 percent of the households are counted using the conventional procedure whereby households are requested to hold their questionnaires for pickup by a temporary census employee (enumerator). Two questionnaires are being used in 1980: a "short form" containing 19 questions asked of all households and a "long form" containing an additional 43 questions asked of approximately one out of five families.

Counting the Nation's estimated 222 million population requires the temporary service of 220,000 enumerators and 55,000 office personnel, and 409 temporary census district offices. Of the 409 offices, 373 use the mail-out/mail-back technique, 24 the conventional door-to-door enumeration, and 12 a combination of both methods.

Of the mail-out/mail-back districts, 347 are located in the Standard Metropolitan Statistical Areas (SMSA) ^{1/} and contain about 89 percent of the Nation's households. Eighty-seven of these districts are classified as centralized and 260 as decentralized. The centralized offices are located in the inner cities where the population is more difficult to count. The decentralized offices are responsible for counting the population for larger geographic areas, often including several counties. Other distinctions between the two types of offices relate to management. In centralized offices the district manager is a permanent Bureau employee whereas in decentralized offices, the manager is a political referral. Also, many employees in the decentralized districts work from their homes.

As questionnaires are returned to the local census office, they are checked off against master address registers used to insure each household is counted. Population counts from the questionnaires are manually entered on these registers. Also, all questionnaires receive an editing check to insure that a sufficient number of questions are properly answered. If discrepancies are noted, a followup will be made, by telephone first, or by a visit to the home if the household cannot be reached by telephone. The number of incomplete or improperly answered questions that is acceptable has been established by measurements of personal visit effectiveness. There is a point of questionnaire completeness where followup will not yield more information. Conversely, the likelihood of obtaining more information increases as the number of improperly answered questions increases.

Personal visit enumeration of households not returning their questionnaires, known as followup 1, began April 16, 1980, about 2 weeks after census day. To improve quality and coverage over the 1970 census, the Bureau has incorporated several new or improved procedures into a second stage of enumeration, designated followup 2.

The first half of followup 2 consists of a field check to verify the actual status of all addresses previously reported in followup 1 as vacant or nonexistent. In 1980 the Bureau plans to do a 100 percent verification as an improvement over the sample check of vacant houses done in

^{1/}An SMSA is defined as a county containing at least one city with 50,000 inhabitants or more, or several economically and socially related contiguous counties with at least one city of 25,000 inhabitants or more. In the New England States, where SMSA's are comprised of cities and towns, the minimum population size is 75,000.

1970. Historically, this procedure has shown that 10 percent of the houses classified as vacant are actually occupied. At the same time, the Bureau plans to recheck about 15 million addresses in rural areas to look for possible missed houses. The recheck is being done because of the historic undercount in rural areas and the difficulties experienced in identifying addresses for the 1980 census. The Bureau estimates that the recheck will increase the number of households by 2 percent.

In the second half of followup 2, the remaining questionnaires that have failed the edit check or quality control reviews and those having additional household members identified by independent source lists are followed up. To reduce the disproportionate rate of the 1970 minority undercount, lists of names of primarily black and Spanish/Hispanic males obtained from sources independent of census enumeration will be compared to names listed on questionnaires. The independent sources include State driver's license files, and alien registration lists. Names of people not found on questionnaires will be assigned for telephone followup, and, if necessary, a personal visit.

When the district offices are closed the questionnaires and address registers are shipped to processing centers. At the processing centers, the total counts from the questionnaires making up each master address register are compared with the manual counts from the master address registers. This comparison is an edit procedure to identify errors in the recording of population counts in the master address registers. This edit is about a 19-week operation, assuming a constant flow of questionnaires beginning about July 14. The timing of this process is important to insure that the President will receive edited population counts on the required date.

Related GAO reports

Other reports on the 1980 census include "Programs to Reduce the Decennial Census Undercount," (GGD-76-72, May 5, 1976); letter reports on census pretests (GGD-78-2, Oct. 11, 1977) and Bureau of the Census' planning, budgeting, and accounting for the 1980 census (GGD-79-7, November 9, 1978), and "Problems in Developing the 1980 Census Mail List," (GGD-80-50, March 31, 1980).

GOOD PROMOTION AND PUBLIC COOPERATION COULD IMPROVE CENSUS RESPONSE

The success of the 1980 census is largely dependent upon the public's cooperation in mailing back completed census

questionnaires. The Bureau believes that public cooperation in answering the census questionnaire is a crucial but an uncontrollable variable.

While the mail response rates during test censuses were not encouraging, the Bureau has designed a large scale promotional campaign to induce better public cooperation. Moreover, the Bureau believes that public cooperation in the actual census should be better than that for test censuses because of the recognition that it is the real census.

The Bureau estimated that the 1980 census mail response rates will be 52.5 percent for large urban areas and 72 percent in all other areas receiving mail-out/mail-back questionnaires. A small change in the percentage of questionnaires mailed-back can make a substantial difference in questionnaire followup cost. For example, a 1 percent mail response rate variance would result in a cost change of about \$2 million. Preliminary Bureau data for the 1980 census indicates that public cooperation is better than in test censuses. As of April 10, 1980, according to a Bureau report, the national mail response rate was about 72 percent, 64 percent for large urban areas and 73 percent for all other areas.

Overall test census mail response rates fell short of expectations

Of the five test censuses which used the mail-out/mail-back procedures, as shown below, only the Richmond, Virginia test met the expected mail response rate.

Test Census Mail Response Rates

	<u>expected</u>	<u>actual</u>
	----- (percent) -----	
Travis County, Texas	75	65
Camden, New Jersey	65	42
Oakland, California	55	49
Richmond, Virginia	70	71
Centralized	55	66
Decentralized	75	74
Lower Manhattan	52	36

According to the Bureau, the response rate in the actual census should be higher than that experienced in test censuses. Bureau officials advised us that the public is prone to cooperate more for the actual census than for tests. This position is somewhat substantiated by the higher mail response in the actual 1970 census than that experienced in the 1970 test censuses. Better public cooperation is partially the

reason for the Bureau estimating that the mail response for the 1980 census will be higher than that experienced in the 1980 test censuses.

The Bureau attributes the high response rate in the Richmond test census partially to its promotional campaign. Basically, the promotional campaigns used in each of the test censuses were similar. However, the test censuses' promotional campaigns in both Richmond, Virginia, and Lower Manhattan had some unique differences.

The promotional campaign in Richmond, Virginia, was an increased full scale effort over the three previous tests in Travis County, Texas; Camden, New Jersey; and Oakland, California. The Richmond promotional campaign incorporated several significant features not used in the prior tests, including the use of the Advertising Council ^{1/} to prepare and distribute public service announcements to the print and broadcast media.

Several unique circumstances existed in the Lower Manhattan test census which affected its promotional campaign and possibly its mail response rate:

- The restricted dimension of the test census area (about 1 percent of the metropolitan area population) caused major media publicity not to be used because of its much larger coverage area.
- The Bureau's late decision to change census day from September 12 to the 26th.
- The strike by employees against New York City's three major daily newspapers.

Bureau uses full scale promotional campaign
to increase 1980 response rate

To improve mail response rates during the 1980 census, the Bureau, with the assistance of the Advertising Council, used a full scale promotional campaign. The goal of this campaign was to reach the entire population with a series of messages designed to motivate public cooperation. This cooperation helps in getting full and accurate response to the mailed questionnaires and in obtaining greater assistance from persons who need to be contacted by followup enumerators.

^{1/}The Advertising Council is a private, nonprofit organization which conducts public service advertising campaigns in the public interest.

To achieve this goal the promotional campaign has been developed using public information, advertising, national organization communications, and a grassroots program.

- Public information involves informing the public about the census through materials such as press releases, pamphlets, posters, and editorials. Information kits were sent to about 100,000 various media throughout the country. The American Telephone and Telegraph Company, covering 90 million employees and customers throughout the country, used envelope and check "stuffers" (notices) on the census. These "stuffers" were also used by Federal agencies in mailings and payments to citizens. With assistance from educational television outlets, a school curriculum program on the census was distributed to the Nation's 100,000 public and private elementary and secondary schools. In addition, the Boy Scouts of America distributed flyers to about 30 million households.
- Advertising is the cornerstone of the Bureau's promotional campaign. The Advertising Council, with its volunteer agency Ogilvy and Mather--one of the world's 10 largest advertising agencies--developed and distributed all advertising materials to the media nationwide. Using the Council, all census advertising time and space provided by the media was free. The only cost the Bureau incurred was a charge by the Council of about \$757,000, which is small compared to the \$40 million worth of advertising the Bureau estimated it received.
- The Bureau established the Broadcasters of Eighty Committee to amplify its promotional campaign in the broadcast media. This committee consists of broadcasting owners and managers, including minority representatives, throughout the country. The purpose of the committee is to obtain support for the Bureau's promotional campaign from the broadcast media to assure good broadcasting coverage. The Bureau expects that this committee's efforts will increase the frequency of census announcements and specials broadcasted.
- The National Organization Communications is a program to contact about 2,000 national organizations, including minority organizations, to get assistance in communicating census messages to its membership. For example, the AFL-CIO has included a census message in one of its periodicals. Each message is tailored to the interests of the various organizations' members.

--The "Grassroots" Program is an effort to contact local media and assist local organizations in promoting the census. Located in key areas throughout the country, 40 information specialists (trained news media people) were hired to provide this contact. Additional contact at the local level was provided by approximately 200 Community Services Program Specialists, in the most difficult to enumerate areas nationwide. These specialists, from the communities, worked primarily with minority organizations, their leaders, and the media to obtain cooperation in getting people counted.

PERSONNEL PROBLEMS NOT COMPLETELY RESOLVED

In the test censuses, recruiting shortfalls and high turnover delayed the completion of followup enumeration. The Bureau has expanded enumerator recruiting and training programs. However, the basis for enumerator pay--the major cause of high turnover in the test censuses--has not been changed, and the Bureau is not taking full advantage of the part-time work force.

Followup 1 in the actual census was scheduled to start on April 16, 1980, and be completed in 4 weeks. This operation was similarly scheduled for 4 weeks in the test censuses, but in four of five tests about which data were available, it took an additional 2 to 6 weeks. In the same tests completion of followup 2 was delayed 2 to 6 weeks.

Recruiting part-time employees could aid the census

Although the Bureau has expanded enumerator recruiting for the actual census to preclude shortfalls experienced in the tests, it is not planning to recruit part-time workers unless sufficient full-time workers are not forthcoming. In four of five tests about which data are available, enumerator shortages averaged 13 percent in the first week and due to turnover, grew to 28 percent by the fourth week of operations.

In the test censuses the Bureau had difficulty in recruiting enumerators, particularly from minority groups and from areas being enumerated. Shortfalls in recruiting stemmed in part from late or limited publicity and low unemployment. To meet required staffing, the Bureau resorted to hiring enumerators to canvass neighborhoods in which they did not live, an alternative which may not be as feasible in 1980 because all areas are to be enumerated.

In the Lower Manhattan test, 64 percent of the enumerators hired did not reside in the test census area. According to the

Bureau, this lack of neighborhood, linguistic, and cultural familiarity contributed to public resistance and enumerator difficulty in meeting production rates which were necessary to earn the wages advertised by the Bureau. The Bureau had to waive the citizenship requirement for enumerators because of difficulty recruiting bilingual Chinese persons to work in Chinese neighborhoods. Similarly, in the Camden, New Jersey census test, it was difficult to recruit white and Puerto Rican enumerators for the areas in which they resided.

Recruiting of enumerators for the 1980 census will have the benefit of a national publicity campaign, referral of candidates by Members of the Congress, State and local employment agencies, National and local civic and political organizations, and Federal and State agencies, and use of approximately 200 community service specialists to seek the assistance of national and local minority groups. In addition, the Bureau has developed selection procedures which give priority to hiring enumerators who live in the areas in which they will work and are familiar with dominant neighborhood cultures and languages.

Bureau data shows that the Bureau is not fully meeting recruiting goals for the 1980 census. As of early May, the Bureau had on its rolls 70.2 percent of the required number of enumerators. Four of the 12 regions had less than 70 percent: New York, 59.5 percent; Dallas, 62.9 percent; Philadelphia, 64.4 percent; and Denver, 67.1 percent. The Bureau considers that a regional office with less than 70 percent is having recruiting problems.

Bureau studies show that the most productive time for enumeration work is the evenings and on weekends and that each weekday contains only 4 to 5 hours in which enumeration work is likely to be productive. The Bureau is not, however, planning any large scale efforts to recruit persons who can only work part-time. Enumerator recruiting is directed primarily toward persons willing to work a 40-hour week. Typical recruiting materials state "Applicants should be available to work 40 hours a week. Applicants for part-time work will be considered as necessary." There may be many persons, however, who can not work a 40-hour week but who can work in the evenings and on weekends when enumerator work is most productive. Drawing on this potential pool of workers might better assure that a sufficient number of enumerators are available to carry out the census.

Bureau officials recognize that sufficient numbers of full-time enumerators may not be forthcoming in some areas and have authorized district offices to recruit and hire

part-time workers if necessary. Part-time hiring will be restricted, however, to instances in which whole enumeration crews (7-13) can be found to work part-time. In general, the Bureau will actively seek part-time employees only when it is unable to employ a sufficient number of full-time workers.

Recruiting efforts will be localized to areas where shortfalls are being experienced. Local referral sources, such as employment agencies, civic groups, and political organizations, will be advised that part-time workers are needed. Use of paid advertising will require the approval of Bureau headquarters.

Training program revised

Because poor training of enumerators may have also contributed to enumerator turnover and difficulty in meeting expected production in test censuses, the Bureau has improved its training program.

Observing enumerator training in the Camden, New Jersey, test, one member of the Census Advisory Committee on Asian and Pacific Island Americans felt that:

- Instructions were sometimes vague and confusing, even contradictory.
- Training did not prepare enumerators adequately for performance of their duties.
- Training was bland with little discussion by trainees.

A Bureau study team which observed enumerator training in the Oakland test stated in a report that: "We suspect that the turnover in enumerators early on reflects frustration over training."

The Bureau has reworked the enumerator training program. Under a technical assistance contract with the Bureau, personnel from the Bureau of Training, Office of Personnel Management (OPM) provided day-to-day consultation and assistance in the development of enumerator training for 1980. According to an OPM report and our discussions with Bureau staff, training for 1980 now consists of paired practice interviews using actual questionnaires and film strips. These methods are used in conjunction with sound cassettes to train on specific procedures and convey background information instead of references to and reading from manuals. In addition, emphasis will be placed on learning the tasks of the most common situations and encouraging enumerators to work those hours when people are most likely home.

Wages cause high turnover

In four of five test censuses about which data are available, enumerator turnover ranged from 37 to 74 percent. Bureau observations of the Oakland test census show that low pay and misunderstanding of the pay method were major causes of high turnover. Data we obtained from enumerators who worked in the Lower Manhattan test census show that dissatisfaction with pay continues to be a major cause of turnover. Pay was low because enumerators were unable to meet production quotas required to earn advertised wages. Although the Bureau has changed both the content and timing of its explanations of enumerator pay, production quotas are still higher than those which enumerators achieved in the tests.

The Oakland test census experienced a 37 percent enumerator turnover rate. Bureau observers of the 1977 Oakland test census, reporting on enumerators commented:

"If they expressed one universal complaint it concerned pay. Pay became more and more an issue as enumeration progressed and callbacks mounted. Most enumerators who quit probably quit because of pay."

A Bureau enumerator separation study conducted during the same test noted:

"The enumerator salary was rendered inadequate because of the demands that were placed on one in terms of type of work involved, i.e., accomplishing interviews under less than optimal, even adverse conditions, and in terms of the time and effort therefore necessary to produce a completed 'piece' or questionnaire."

The same study concluded that the "* * * problem of pay and the problem of dealing with an often resistant public are the primary factors eliciting enumerator resignations."

In the last test census in Lower Manhattan, there was a 62 percent enumerator turnover. We attempted to obtain the views of the approximate 500 enumerators who worked in the test census. Many could not be located or provided incomplete responses to our questionnaire. However, of the 213 who responded to the significance of pay as a reason for quitting, 122 or 57 percent said that the salary was too low for the work they did.

Followup enumerators in the 1980 census are paid through a "piece rate" method. Under such a system, earnings are dependent upon the amount of work produced. Enumerators are

paid a fixed fee (called a "piece rate") for each completed questionnaire/case. The piece rates are based upon estimates of the time required for the work and a predetermined hourly wage believed by the Bureau to be fair and adequate compensation for enumeration work. The hourly wage is called a "targeted wage." The Bureau has categorized 1980 district offices into three types according to enumeration difficulty and procedures required: centralized, decentralized, and conventional. For each type the Bureau has established a set of piece rates and a set of production standards. To earn the targeted wage, the enumerator must meet the appropriate production standard. The 1980 targeted wage is \$4.45 per hour in centralized districts and \$4.00 in decentralized and conventional districts.

The Bureau's enumerator separation study, conducted during the Oakland test census, found that many enumerators who resigned had assumed, based on information communicated prior to training, that they would be paid at a fixed rate per hour. Many enumerators did not clearly understand that their pay was dependent on the number of questionnaires/cases completed and not on hours worked. When realizing that they may not earn the advertised hourly wage, many enumerators felt deceived by recruiting advertisements and quit. A National Academy of Sciences report dated September 1978, which appraised plans for the actual census, noted that

"Clarity about the basis and the frequency of payment of enumerators is probably as important in affecting turnover and morale among enumerators as is the actual rate of pay."

A member of the Census Bureau Advisory Committee on the Black Population, in testimony before the House Subcommittee on Census and Population in June 1977, indicated that resignations occurred when enumerators felt they had been treated unfairly due to unclear explanations of pay in recruiting advertisements.

Recognizing the need to better explain to enumerators how piece rate pay works, the Bureau has prepared and plans to distribute a one page explanation of piece rate pay to potential enumerators when they report for testing. This paper will supplement explanations of pay also contained in the enumerator training program and in procedural and payroll manuals.

Limited basis for production standards

Production standards which the Bureau has established for enumerators in the 1980 census do not reflect all test

census experience. The piece rates and production standards to be used are based on estimates of the time required for enumeration work from time studies conducted in three test censuses. Bureau officials did not analyze all test census data to determine actual production levels achieved and how many enumerators earned targeted wages. In some instances Bureau officials adjusted time study estimates on the basis of production records of only one test census. A memorandum to the Assistant Chief of Decennial Census Operations noted that time study observations of only three test sites may not be representative of all areas. The memorandum noted that

"* * * generally the adjustments made * * * were based on intuition, budgetary and scheduling concerns, and known changes in procedures that were not reflected in the expected times (estimated in time studies)."

Test census production records indicate that average enumerator productivity in most test censuses was generally well below that which will be required in 1980 to earn the advertised target wage. Average enumerator productivity in the tests was less than 1980 requirements, even in the early weeks of test census followup operations when enumeration is considered relatively easy.

The following table shows average enumerator test census productivity compared to that which is required in the actual census to earn the targeted wage.

Table 1

Average Enumerator Production in Each Test Census
Compared to Production Required in the
Actual Census to Earn Advertised Hourly Wage

<u>District office/ operation</u>	<u>Production required in the actual census to earn advertised hourly wage (note a)</u>	<u>Average production achieved in test census (note b)</u>
<u>Centralized</u>		
Camden, New Jersey		
Followup 1	12	8.6
Followup 2	c/14	13.4
Phase 1 - 1980 only	16	
Phase 2 - 1980 only	13	
Oakland, California		
Followup 1	12	10.7
Followup 2	c/14	12.8
Phase 1 - 1980 only	16	
Phase 2 - 1980 only	13	
Richmond, Virginia		
Followup 1	12	13.1
Followup 2	c/14	8.8
Phase 1 - 1980 only	16	
Phase 2 - 1980 only	13	
Lower Manhattan		
Followup 1	12	8.8
Followup 2	c/14	8.7
Phase 1 - 1980 only	16	
Phase 2 - 1980 only	13	
<u>Decentralized</u> (Balance of SMSA)		
Travis County, Texas		
Followup 1	d/14 e/12	11.6
Followup 2	c/19 c/18	(f)
Phase 1 - 1980 only	d/16 e/16	
Phase 2 - 1980 only	d/21 e/19	
Richmond, Virginia		
Followup 1	d/14 e/12	16.1
Followup 2	c/19 c/18	9.9
Phase 1 - 1980 only	d/16 e/16	
Phase 2 - 1980 only	d/21 e/19	

a/Questionnaires/cases per 8 hours of work.

b/Questionnaires/cases per 8 hours of work as reported in test census' progress reports.

c/Estimated for comparison purposes--1980 production standards are specified for each phase of followup 2. Pretest production data broken down by phases was not available.

d/Production required in areas where 1/6 of the population receives a long form questionnaire.

e/Production required in areas where 3/6 of the population receives a long form questionnaire.

f/Production data incomplete.

In the test censuses, enumerators were guaranteed payment of the Federal minimum hourly wage. For the 1980 census however, the Bureau has obtained an exemption from the requirement of the Fair Labor Standards Act that guarantees minimum wages. The exemption was obtained to promote productivity and help control costs.

Based on the low production achieved, many test-census enumerators would not have earned the Federal minimum wage had it not been guaranteed. If enumerator productivity in the actual census is similar to that of the test censuses, many enumerators will not earn the targeted wage and some will not earn the Federal minimum wage.

The following table shows the average hourly wage enumerators, working in test census areas, would earn in the actual census if their production was the same as in the tests. Estimated wages are compared to advertised wages and the Federal minimum wage.

Table 2

Estimated 1980 Enumerator Wage Achievement
Test Census Areas Compared to
Advertised Wage and Federal Minimum Wage

<u>District office/ operation</u>	<u>Estimated average hourly wage</u>	<u>Advertised hourly wage</u>	<u>Federal minimum hourly wage</u>
<u>Centralized</u>			
Camden, New Jersey			
Followup 1	\$3.24	\$4.45	\$3.10
Followup 2	3.79	4.45	3.10
Oakland, California			
Followup 1	4.03	4.45	3.10
Followup 2	3.62	4.45	3.10
Richmond, Virginia			
Followup 1	4.93	4.45	3.10
Followup 2	2.85	4.45	3.10
Lower Manhattan			
Followup 1	3.31	4.45	3.10
Followup 2	2.46	4.45	3.10
<u>Decentralized</u> <u>(Balance of SMSA)</u>			
Travis, Texas			
Followup 1	3.32	4.00	3.10
Followup 2	2.24	4.00	3.10
Richmond, Virginia			
Followup 1	4.61	4.00	3.10
Followup 2	2.18	4.00	3.10

AGENCY POSITIONS ON FUNDING, PERSONNEL,
AND PRODUCTIVITY PROBLEMS

Top Bureau officials acknowledge that some enumerators will not make the targeted wage and some will not make the minimum wage. However, they advised us that it is too late to raise the piece rates because of budgetary limitations. They said an increase in piece rates would be costly and no guarantee to reduce turnover.

Because of higher costs than expected for Fiscal Year 1980, the Bureau has made changes to its planned activities. The Bureau has also identified additional measures that it may have to take if

- additional funding is not obtained for Fiscal Year 1980,
- the mail response does not reach expected rates, and
- enumeration productivity and staffing does not reach the expected levels.

In its Fiscal Year 1981 budget estimate submitted to the Congress in January 1980, the Bureau identified several program reductions and two activity postponements to reduce Fiscal Year 1980 costs. For example, it has (1) reduced the number of cases to be reviewed to identify enumerators who are preparing false census forms and (2) reduced the level of quality control on the followup on nonresponse cases. The Bureau's 1981 budget estimate also included the following statement:

"Experience in FY 1980 with such interdeterminate factors as recruitment, the mail return rates for questionnaires, and enumerator productivity will determine the need for additional adjustments in program or resources for supplemental appropriation requests, if this becomes necessary."

In February 1980, we met with the Deputy Director to discuss the prospect, based on our analysis of test censuses, that production in the actual census may not reach the budgeted levels. He said that if the Bureau falls behind in the enumeration process, streamlining will be necessary. The streamlining would include a relaxation in the tolerance of accepting questionnaires with missing or improper data and a reduction in the followup 2 operation. According to the Deputy Director, this type of streamlining will result in a sacrifice of population coverage and reduction in the quality of data.

The Bureau's Director testified in March 1980, before the House and Senate Appropriations Subcommittees, that the Bureau may have an estimated \$25 million shortage of funds for Fiscal Year 1980. The Director said that additional program cutbacks are not possible without serious loss of census coverage. He also stated that a better than expected mail response rate would reduce the fund shortfall, but that a poor response rate could increase the need for funds to \$50 million.

The Director identified, for the House Appropriations Subcommittee, various census procedures that would have to be eliminated or curtailed at different levels of fund shortfalls. For example, with a \$10 million shortfall, the Bureau would eliminate the personal visit followup for missing data on questionnaires. Telephone followup would be continued where possible. If there is a \$50 million shortfall, additional program reductions would be made, including (1) the elimination of rechecking about 15 million households in the rural sections of the country to look for housing units not on the Bureau's mail address register and (2) the elimination of checking the housing units initially reported as vacant or nonexistent. The Bureau estimated that eliminating the rechecking would result in a loss of 387,500 housing units. No estimate of population was offered. The Bureau estimated that eliminating the vacant/delete check procedure would reduce the census count by about 1,420,000 housing units with an associated population of about 2,840,000.

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