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Analysis of 1990 Census Operations

Statement of  
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Committee on Governmental Affairs  
United States Senate



## ANALYSIS OF 1990 CENSUS OPERATIONS

### SUMMARY OF STATEMENT OF L. NYE STEVENS DIRECTOR, GOVERNMENT BUSINESS OPERATIONS ISSUES

The Census Bureau has been facing difficult challenges in completing the 1990 census. A lower than expected census questionnaire mail response rate, recruiting and staffing difficulties, and funding shortfalls have hindered the 1990 census and contributed to delays in early operations, particularly the nonresponse follow-up operation, which seeks to obtain completed questionnaires from households that did not mail back their census questionnaire.

The Bureau has taken actions to address these problems and appears to have generally put the census back on schedule. It also has corrected early difficulties with the completeness and accuracy of its management information system for the nonresponse follow-up operation, and it has taken several actions to address its staff shortages--including increasing pay rates for enumerators and other field staff in 31 percent of its district offices, which were experiencing staffing shortages.

However, despite recent progress, much remains to be done before the census is complete. Important coverage improvement operations that will significantly affect the quality of census data are either just beginning or will begin in late summer. GAO believes that the quality of census data is heavily dependent on how well the Bureau carries out remaining census operations.

Field interviewing for the post enumeration survey (PES), which is a matching study of households to determine if each person was counted correctly or missed in the census, is now underway in most of the Bureau's 449 district offices. The PES will play a major role in the Secretary of Commerce's decision on whether to adjust census counts. Under a court-approved stipulation and order, adjusted counts must be published by July 15, 1991, if the Secretary determines that adjustment is warranted. GAO believes that PES schedule compressions already made, coupled with changes in basic 1990 census procedures, could impair the quality of both the census and the PES. GAO urges the Bureau and other interested parties to carefully consider the implications of future operational and schedule changes--in order to maintain an appropriate balance between time allowed to complete operations and the quality of data produced.

GAO believes that the 1990 census experience demonstrates the need for fundamental rethinking of how the 2000 and future censuses should be taken. GAO urges Congress to maintain a strong and continuing interest in early planning for the 2000 decennial census.

Mr. Chairman and Members of the Committee:

We welcome this opportunity to contribute to your oversight of the 1990 Decennial Census and planning for future censuses. We have been monitoring the 1990 census since the mid-1980s at the request of this Committee and the House oversight Subcommittee. A complete listing of GAO reports and testimonies on census activities since 1984 is attached to my statement.

The Census Bureau has been facing some difficult challenges in completing the 1990 census, including

- adapting to a reduced level of public cooperation,
- dealing with recruiting and staffing shortages,
- funding the census, and
- improving the quality of the census data.

A lower than expected census questionnaire mail response rate, recruiting and staffing difficulties, and funding shortfalls have hindered the 1990 census and contributed to delays in early operations. I am pleased to report that the Bureau has taken actions to address these problems and appears to have generally put the census back on schedule. However, despite this progress, it is important to keep in mind that the census is not over. Much remains to be done in the months ahead. Critical ongoing census operations must be completed and others begun. The

ultimate success of the census--as measured by the quality of census data--hinges on how well these operations are executed.

### Reduced Public Cooperation

For the 1990 census the Bureau asked about 95 percent of the Nation's estimated 106 million households to mail back their census forms--the other 5 percent were asked to hold their questionnaires for pick-up by census enumerators. An indicator of public cooperation is the mail response rate--which compares the number of questionnaires mailed back to the total sent out. The 1990 mail response rate was 63 percent--12 percentage points lower than the 75 percent rate achieved in 1980. On the basis of its experience with decennial census field tests and other surveys, the Bureau expected and budgeted for a 70 percent response rate in 1990. The lower than expected response rate increased the Bureau's questionnaire nonresponse follow-up workload, significantly increasing staffing requirements and census costs, which I will discuss in more detail later.

There has been considerable speculation in the media and from other sources--including the Bureau--about the reasons for the lower than expected response rate. Some of the potential reasons discussed include a growing reluctance of the public to respond to questionnaires and surveys, a perception that the census questionnaire is burdensome and intrusive, a general increase in

the volume of third-class mail reducing the visibility of the census questionnaire, and the language barriers for some segments of the population. However, definitive data is not now available, and we urge the Bureau to follow through with a recently designed study to determine what motivated some people to return census questionnaires and others not to do so. We believe that the results of this research are critical to planning for future censuses, and indeed for government information collection efforts in general.

We believe that early mail delivery problems for census questionnaires may have exacerbated apparent public apathy, further compounding the Bureau's challenge of securing the cooperation of an already less responsive public. The Bureau attempted to resolve these initial mail delivery problems by expanding its telephone assistance efforts and having census enumerators deliver about 1.8 million questionnaires returned as undeliverable by the Postal Service. The Bureau is currently assessing the reasons for questionnaire delivery problems. We believe that the results of this review will also have important implications for developing address lists for future censuses.

The Bureau attempts to stimulate public cooperation and responsiveness through various promotion and outreach programs. For 1990, the Bureau estimates that it will spend about \$82 million for these programs. This represents about 2-1/2 times

the amount spent for 1980 census promotion and outreach, as measured in constant dollars. These costs do not include the market value of free media time made available to the Bureau through the efforts of the Advertising Council.

In September, 1989, we reported that there were delays in establishing the Census Promotion Office and that the absence of an appointed Census Director was hampering organization of the promotion campaign. We also said, however, that measuring the effectiveness of census promotion and outreach is difficult to separate from other factors that influence the level of public cooperation.

#### Recruiting and Staff Shortages

The decennial census requires the largest short-term mobilization of human resources in peacetime America. Approximately 400,000 temporary census workers are needed for the 1990 census, most of whom operate out of 449 district offices blanketing the country.

As we reported to this Committee in May, 1989, problems in attracting and retaining a quality workforce historically have plagued decennial census operations. During peak operations in 1980, the Bureau was unable to fill 30 percent of its enumerator positions and suffered high turnover rates. We also said that staffing difficulties for the Bureau's 1990 suburban and rural

address list development operation, known as prelist, which began in 1988, foreshadowed continued staffing problems for the 1990 census.

We recommended that the Bureau adopt a geographic pay scale to improve its staffing competitiveness. We also recognized that because of a diminished pool of discretionary workers and the temporary nature of census employment, pay alone would not solve the Bureau's staffing problems. Because of this concern, we supported legislation to expand the potential labor pool by enabling federal civilian and military retirees to accept temporary census jobs without reductions in their retirement benefits or salaries.

In late 1989, the Bureau implemented a geographic pay scale and, with the support of this Committee, legislation was enacted in August 1989 to enable federal annuitants and military retirees to work on the census without reductions to their census salary or military retired pay.

In two reports on staffing and pay issues released in the spring of 1990, we raised concerns about the Bureau's ability to attract sufficient staff in 1990 and said that because the Bureau did not have the opportunity to test its geographic pay rates under census-like conditions, the Bureau may find that its pay rates are not competitive in some areas.

More recently, in our May 21, 1990, testimony before the House Subcommittee on Census and Population on the status of the nonresponse follow-up operation, in which the Bureau seeks to obtain questionnaires from households that did not mail back their questionnaires, we reported that the Bureau had met 61 percent of its 1990 recruiting goals and, contrary to its management reports, many district offices were understaffed. For example, in late May 1990, at the height of major field activity, the Bureau had only 73 percent of the full-time staff needed nationwide. Because of this staff shortage, census operations were delayed.

I am pleased to report that since the May hearing the Bureau has taken several actions to address its staff shortages. On June 3, the Bureau increased enumerator and other field staff pay in 140, or about 31 percent, of its district offices. Pay was raised between \$.50 and \$2.00 an hour--with the highest rate being \$10.00 an hour in New York City. The Bureau also expanded its supplemental pay program for field staff in district offices nationwide--making enumerators eligible to receive \$1.50 for each census case they complete. In addition, the Bureau moved enumerators to offices experiencing staff shortages. These actions, coupled with correcting early difficulties with the completeness and accuracy of its management information system



for the nonresponse follow-up operation, have generally put the census back on schedule.

### Funding the Census

The costs of taking the census have risen dramatically in recent decades. To count each housing unit (in constant 1980 dollars), the Bureau spent \$5.04 in 1950 and \$12.10 in 1980. In 1990, the cost to count each housing unit will increase again, rising to about \$16.96. Per capita costs (in constant 1980 dollars) more than tripled between 1950 and 1980, rising to \$4.72; and we estimate per capita costs could rise to about \$7.20 in 1990.

Overall, the Bureau estimates that it will spend about \$2.6 billion to complete the 1990 census. This amount is a significant increase over the \$1.1 billion spent for the 1980 census and \$221 million spent for the 1970 census. In terms of constant 1980 dollars, the cost of the 1990 census will have increased about 73 percent over the cost in 1980.

The Bureau has had to adjust its fiscal year 1990 spending plans to shift resources to accommodate unanticipated cost increases. For example, the Bureau decided to reduce edit follow-up procedures for mail-back short form questionnaires. Rather than do follow-up work on the entire inventory of short-form questionnaires, as originally planned, the Bureau will do follow-

up work on a 10-percent sample of these questionnaires. This could affect the quality of population characteristics data. We are concerned that the Bureau decided to reduce short-form questionnaire follow-up without having thoroughly studied its impact on data quality.

Funding adjustments for 1990 census operations were also needed this spring. The lower than expected response rate, coupled with the difficulty of attracting and retaining a sufficient temporary workforce and increased costs for some activities, triggered a Department of Commerce request for a dire emergency supplemental appropriation, which was enacted in May 1990. This appropriation provided \$110 million in new funding for the Bureau. Additionally, the act included a provision that is intended to free up for these census operations another \$70 million originally appropriated for projected unemployment benefits.

The Bureau plans to use this additional funding for several purposes. About \$70 million is to be used to cover the additional costs associated with the lower mail response rate and about \$14 million to cover the costs of the recent pay increases. In addition, the Bureau plans to use about \$60 million to reinstate a program to recheck housing units initially reported as vacant or nonexistent--a coverage improvement program that added 1.7 million persons to the count in 1980.

## Improving Census Data Quality

The final and, in our opinion, the most important management challenge is meeting the Bureau's goal of improving the quality of census results, particularly the census count. Taking a complete and accurate decennial census is important to the Nation. The 1990 census will provide the basis for reapportioning the House of Representatives; redrawing congressional, state, and municipal legislative district lines; and will be used during the decade for allocating billions of dollars of federal and state funds to political subdivisions. Census data also provides a basis for both public and private decisionmaking on a wide range of policy and commercial matters.

In theory, the census should count everyone in the population, but historically the census has disproportionately undercounted certain population groups, especially blacks. Although the net national undercount has declined over the past four decades, according to the Bureau's estimates, the disproportionality of the undercount has not. For example, while the net national undercount was estimated to have declined from 4.4 percent to 1.4 percent between 1950 and 1980, the net undercount of the black population was estimated to have declined from 9.6 percent to 5.9 percent, and the net undercount of the white (and other non-black) population was estimated to have declined from 3.8 percent to 0.7 percent.

Adjusting census counts to compensate for undercounts or overcounts has been the subject of considerable debate since the 1980 census. The Department of Commerce, in accordance with a court-approved stipulation and order, agreed that if the Secretary decides to adjust 1990 census counts it would publish adjusted counts no later than July 15, 1991.

A major tool in the adjustment process is the post enumeration survey (PES). In basic terms, a PES is a matching study in which the Bureau interviews a sample of households independent of the census. The persons enumerated in the PES households are matched to census questionnaire records to determine whether each person was counted correctly or missed in the census.

On January 30, 1990, we testified before the House Subcommittee on Census and Population reporting on the results of our review of the 1988 dress rehearsal PES and our concern about whether the Bureau can complete 1990 PES and related activities at an acceptable level of quality by the July 15, 1991, deadline.

Primarily on the basis of our review of the 1988 dress rehearsal PES, we concluded that it was unlikely that the Bureau would be able to meet the July 15, 1991, deadline, despite compressions of 1990 PES time schedules. We said that schedule compressions, coupled with changes that have been made in basic 1990 census procedures, could impair the data quality of both the census and

the PES, and Bureau officials also believed that accelerated time schedules posed certain risks. We testified that there is a tradeoff between the time allowed to complete census operations, including the PES, and the quality of the data produced. We urged that future changes in planned operations or time schedules be carefully considered in light of the potential risk to both PES and census data quality.

Meeting the court-approved July 15, 1991, deadline has presented a significant challenge to the Bureau and has influenced many of its operational decisions for both the census and the PES. For example, the Bureau has compressed some of its scheduled operations, such as the time needed to match the PES sample to census records. The Bureau also accelerated its PES interview schedule to begin in late June 1990, rather than late July as originally planned. Starting PES interviewing a month earlier presented the possibility of overlapping with nonresponse follow-up, a major census data collection operation. We were concerned that this overlap could compromise the quality of the data needed for possible adjustment decisions and confuse respondents. The Bureau decided not to start PES interviewing in district offices until nonresponse workload was generally completed.

Another, and related, example involves the nonresponse follow-up operation. Because less than 2 percent of district offices completed nonresponse follow-up by the scheduled June 6, 1990,

completion date, the Bureau took a series of actions--including raising enumerator pay, which I discussed earlier--to expedite nonresponse follow-up operations and avoid significant delays in the PES. Because of these actions, about 335 of the district offices were able to complete nonresponse follow-up by the end of June, 1990, within 3 weeks of schedule and an improvement over the 1980 experience. However, despite these efforts, about 40 offices will start PES interviewing 2 or more weeks behind the current schedule. Recognizing the tight time schedule and the scope and complexity of the PES, we still believe that it will be very difficult for the Bureau to complete the PES, including planned evaluations, by the July 15, 1991, deadline.

Regardless of whether the Bureau accomplishes its work by the July 15, 1991, deadline, it should still complete the PES process and do the planned evaluations. The PES and related evaluations are vitally important for providing users with information on the quality of the 1990 census counts and for planning for future censuses.

While nonresponse follow-up is winding down in most parts of the country and PES interviewing is getting underway, the census is far from over. Other important coverage improvement operations that will significantly affect the quality of census data are either just beginning or will begin in late summer. They include (1) the "Were You Counted Program," which will allow

those people who believe they or members of their households have been missed in the census to fill out and mail in a form published in a local newspaper or obtained at various locations; (2) the recheck of housing units originally classified as being vacant or nonexistent; and (3) the post-census local review program, which affords almost 40,000 local governments the opportunity to review housing and population counts before they become final.

We again urge the Bureau and other interested parties to carefully consider the implications of operational decisions that will be faced in the months ahead--particularly should time constraints become even more severe, as we expect they will. A critical body of both census and PES work remains to be done, and every effort must be made to maintain an appropriate balance between time and quality. First and foremost, the Bureau must strive to take as complete and accurate a census as possible. The quality of census data and PES results will depend, in part, on how well the Bureau carries out remaining census operations.

#### FUTURE PLANNING

Before closing, I would like to take a few moments to reflect on the future. As we pointed out in our Department of Commerce transition report, the Bureau's past census planning efforts generally started late; experienced delays; were incomplete; and,

perhaps most importantly, generally failed to seriously explore innovative approaches. We believe that the Bureau will need to complete its plans for the 2000 census early in the decade, especially if a full range of methodological changes and other promising avenues of reform are given the serious level of examination and testing that will be needed to change the census approach.

We believe that the experiences of 1990 have clearly shown that a fundamental rethinking of how we take the 2000 and future censuses must be a top priority for both the Bureau and Congress in the next several years. A repetition of the 1980 experience must be avoided where, after the census was completed, we believe general interest in the census waned. This, in part, is understandable in view of how far apart decennial censuses are.

To the Bureau's credit, a 21st Century staff was established in 1988 to begin the planning process for 2000. The Census Director also has said that planning for the future is one of her major objectives. While we applaud these early efforts and commitments, we believe that they will only succeed if there is sufficient funding and a strong, continuing interest and commitment by Congress to fully explore all reasonable possibilities for reform and hold the Bureau accountable for results.



We believe that there are many opportunities for change. For example, the Bureau needs to pursue efforts to simplify its address list development process and make greater use of the Postal Service for its data collection efforts. In addition, for a number of years we have advocated using a streamlined questionnaire. We believe that shortened census questionnaires will improve response rates and reduce staffing and overall census costs. For example, in 1990, the long form response rate was 8 percentage points lower than the short form response rate in hard to enumerate areas.

Streamlining the census questionnaire also raises broader questions about the Nation's overall information needs and the adequacy, timeliness, and utility of our current collection methods. While the decennial census is but one source of information collection, it is by far the largest. This Committee has been considering similar questions in developing the "Federal Information Resources Management Act."

Finally, I would suggest that increased use of modern statistical methods should be explored and tested. The Bureau already makes use of statistical procedures to impute missing data. We believe as statistical methods are developed and refined, they afford a potential alternative to improving census data quality at a lower cost.

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This concludes my prepared statement, Mr. Chairman. My  
colleagues and I would be pleased to respond to questions.

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Decennial Census: Pretests Could Be Used More Effectively in Census Planning  
(GAO/GGD-87-24BR, Jan. 8, 1987).

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(GAO/GGD-87-56BR, Apr. 1987).

Decennial Census: A Comparison of the 1980 and 1990 Census Questionnaire Contents  
(GAO/GGD-87-76FS, May 1987).

Decennial Census: Automation of the Geographic Support System  
(GAO/GGD-87-75BR, May 1987).

Decennial Census: 1980 Post Census Day Coverage Improvement Programs  
(GAO/GGD-87-98FS, July 1987).

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(GAO/GGD-87-99FS, July 1987).

Decennial Census: Minicomputer Procurement Delays and Bid Protests: Effects on the 1990 Census  
(GAO/GGD-88-70, June 1988).

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(GAO/GGD-89-77BR, July 1989).

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(GAO/GGD-89-74, July 1989).

1990 Census: Comparison of Coverage Improvement Programs for 1980-1990  
(GAO/GGD-90-8, Nov. 1989).

1990 Census: Change in Minicomputer Acquisition Strategy  
(GAO/GGD-90-10, Dec. 1989).

1990 Census: Enhanced Oversight Should Strengthen Recruitment Program  
(GAO/GGD-90-65, Apr. 1990).

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(GAO/GGD-90-78, May 1990).

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Bureau of the Census Planned 1985 Pretest for the 1990 Decennial Census (June 26, 1984).

The Census Bureau's Activities, Particularly on the 1990 Decennial Census (Apr. 18, 1985).

The Census Bureau's Preparations for the 1990 Decennial Census (July 25, 1985).

The Census Bureau's 1984 Address List Compilation Test (Mar. 13, 1986).

Questionnaire and Data Capture (May 15, 1986).

Status of Census Bureau Plans and Preparations for the 1990 Census (GAO/T-GGD-87-6, Mar. 12, 1987).

Status of the 1990 Decennial Census (GAO/T-GGD-88-42, June 17, 1988).

Status of the 1990 Decennial Census (GAO/T-GGD-88-53, Sept. 27, 1988).

Status of Plans for the 1990 Decennial Census: An Update (GAO/T-GGD-89-15, Mar. 23, 1989).

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Expanding the Decennial Census Applicant Pool (GAO/T-GGD-89-22, May 23, 1989).

Status of 1990 Census Promotion and Outreach Activities (GAO/T-GGD-89-40, Sept. 20, 1989).

Critical Issues For Census Adjustment: Completing Post Enumeration Survey on Time While Protecting Data Quality (GAO/T-GGD-90-15, Jan. 30, 1990).

Decennial Census: Potential Risks to Data Quality Resulting From Budget Reductions and Cost Increases (GAO/T-GGD-90-30, Mar. 27, 1990).

Progress of the 1990 Decennial Census: Some Causes for Concern (GAO/T-GGD-90-44, May 21, 1990).

1990 Census: Status of Questionnaire Follow-up Efforts (GAO/T-GGD-90-52, July 2, 1990).