United States General Accounting Office 136079

GAO

Testimony

For Release
on Delivery
Expected at
9:30 a.m. EDT
Friday
June 17, 1988

Status of the 1990 Decennial Census

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Before the
Subcommittee on Federal Services, Post Office
and Civil Service
Committee on Governmental Affairs
United States Senate

STATUS OF THE 1990 DECENNIAL CENSUS

SUMMARY OF STATEMENT BY
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Conducting a decennial census is a mammoth and costly task. For the 1990 census, estimated to cost about $2.6 billion, the Census Bureau will hire over 300,000 temporary employees to staff about 450 temporary offices. In planning for the 1990 census, the Bureau analyzed problems experienced in past censuses to identify the causes and work towards viable solutions. These problems included: delays in data dissemination; slow, error-prone clerical operations; difficulties in producing timely and high-quality maps; and cost escalation. To help address these problems in 1990, the Bureau decided to automate map production and management information systems and process census data concurrently with collection activities. A critical strategy in the Bureau's attempts to automate was the purchase of several hundred minicomputers.

While we were encouraged by the movement to automate, the Bureau may not be making sufficient and timely progress and, as a result, may not take full advantage of the opportunities that automation offers. For example:

-- The delayed minicomputer procurement has reduced the time needed to develop and test software for the 1990 census, posing a risk that automated procedures will not function as intended. In addition, the failure to plan properly for and manage the procurement resulted in the Bureau paying $1.1 million to settle a bid protest.

-- The Bureau has not systematically validated the software for the minicomputers under census-like conditions in the dress rehearsal. As a result, the dress rehearsal's value has been diminished, and changes will have to be made during actual census operations.

-- The Bureau has experienced delays and difficulties in completing its geographic support system, which delayed map production and significantly increased costs.

-- Late map production has forced the Bureau to postpone the development of address lists for suburban and rural areas--a critical early census operation.

The Bureau will be able to conduct the 1990 census and provide the counts to the President by the statutory deadline. But the census will not be as cost efficient as it could have been.

Mr. Chairman and Members of the Subcommittee:

I am pleased to appear here to discuss our observations on the Bureau of the Census' preparations for the 1990 Decennial Census.

Conducting a decennial census is a mammoth and costly task, involving over 300,000 temporary staff and about 450 temporary offices. According to current Bureau estimates, the 1990 census will cost $2.6 billion, as compared to $1.1 billion to complete the 1980 census.

Early in the decade the Bureau analyzed the problems experienced in the 1980 census. These problems included: delays in data dissemination; the use of slow, error-prone clerical operations; difficulties in providing timely and high-quality maps; and cost escalation. This analysis identified opportunities for improving census operations, particularly increasing the use of automation. However, late decisionmaking and procurement delays have diminished the potential effectiveness of the Bureau's automation initiatives.

First, I would like to focus on problems the Bureau has experienced in procuring and testing minicomputer systems to be used to carry out critical census activities. As discussed in our June 14, 1988, report, DECENNIAL CENSUS - Minicomputer

Procurement Delays and Bid Protests: Effects on the 1990 Census (GAO/GGD-88-70), such problems resulted in the payment of $1.1 million to settle a bid protest and, most importantly, have reduced the time available to develop and test software to process census data and manage operations. This also has diminished the value of the dress rehearsal, which is the Bureau's last major opportunity to assess and fine-tune the systems and operations to be used in 1990.

Secondly, I will discuss our concerns about problems the Bureau is experiencing with implementing the first 1990 Decennial Census operations. Problems and delays occurring in such critical early activities as developing address lists for suburban and rural areas are reminiscent of problems that occurred in 1980. They could ultimately have repercussions on later census operations and adversely affect the quality and cost of the census.

MINICOMPUTER PROCUREMENT PROBLEMS RESULT IN DELAYS AND INCREASED COSTS

Let me first address the minicomputer issue. A key component of the Bureau's plans for the 1990 Decennial Census involved the increased use of automation to improve the accuracy and timeliness of census activities. To help accomplish this, in January 1986 the Bureau decided to procure about 550 minicomputers at a maximum potential cost of $80 million. The

vast majority of the minicomputers were expected to be used in the 1990 Decennial Census for such purposes as checking in questionnaires, keying address and questionnaire data, preparing management information reports, and generating and updating automated maps.

Before the minicomputer contract was awarded, a bid protest was filed with the General Services Administration Board of Contract Appeals by three offerors who contested the Bureau's determination that their proposals did not adequately respond to technical provisions of the request for proposals (RFP). After a hearing, the Board temporarily suspended Commerce's procurement authority.

Rather than contesting the protest, Commerce and the Bureau decided to settle the bid protest by making a cash settlement to the three offerors. Commerce and the Bureau felt they could not afford the additional time required for the Board to decide the protest, regardless of its merits. Commerce also discovered a procedural flaw in the procurement process that it believed would have jeopardized the government's case.

The settlement agreement reached on the minicomputer protest provided that each of the three offerors would receive up to $400,000 for proposal preparation and protest costs after submitting appropriate supporting documentation. After making a

cursory review of the documentation submitted, the Bureau paid a total of $1.1 million to the three offerors, which represented all claims submitted by each offeror up to the $400,000 maximum.

Although the concern for time was not without merit, the cash settlement could have been avoided if the Bureau had not initially created its own management dilemma by failing to plan properly for and manage the minicomputer procurement. Incomplete and untimely planning for the 1990 Decennial Census' organization and procedures prevented the Bureau from fully identifying, documenting, and planning for its automatic data processing needs. This resulted in a late decision to procure the minicomputers and contributed to an additional 6-month delay in the procurement process.

In addition to the cash payment, the problems in the minicomputer procurement (1) overburdened the Bureau's understaffed procurement office, contributing to delays in obtaining other needed equipment for the census; and (2) contributed to the Bureau's decision to lease additional computer capacity because the minicomputers were not available when planned.

LACK OF QUALITY ASSURANCE PROGRAM FOR COMPUTER SOFTWARE IN DRESS REHEARSAL

A principal objective of the dress rehearsal was to conduct a full-scale system test of the minicomputers, under census-like

conditions. The minicomputer contract, however, was not awarded until May 1987, which was several months after the start of the dress rehearsal. As a result the equipment was not available for use in initial dress rehearsal operations, such as keying addresses and updating automated maps.

When the new minicomputer system became available for later phases of the dress rehearsal, it could not be effectively utilized because of insufficient time to develop and fully test software. Although our review to date has found that Bureau officials have identified and corrected many software errors, they have not systematically validated, verified, and tested the software in accordance with recommended federal standards.

I will now discuss some of the problems the Bureau has experienced with its newly automated management information system in the dress rehearsal.

-- District offices experienced problems with the automated applicant file, which is supposed to identify the status of all job applicants and their availability for work. Because the reports failed to accurately reflect applicant status on a timely basis, supervisors lost confidence in the system and did not use it for making hiring decisions. This file also serves as the master file for employees and is used to generate

production reports. The problems with the file precluded district office officials from getting accurate information on employee production and turnover they needed to efficiently manage operations.

-- Automated staff performance reports used to manage follow-up activities and calculate enumerator bonuses were limited because of missing data and inaccuracies. Consequently, to avoid improper payment, district office personnel had to partially rely on manual records to calculate bonuses.

-- Reports used to assess training needs and performance of clerks editing questionnaires were not used as a basis for taking personnel actions because supervisors were not confident that the information provided was accurate.

Using software before it is fully tested is risky and can result in the systems not functioning as intended. In the 1986 pretests for the 1990 census, the Bureau did not allow sufficient lead time to adequately test software programs for its previous computer system. As a result, many software programs initially did not work for some operations and had to be modified. To resolve these problems, headquarters staff provided technical assistance to the pretest sites. If similar problems occur

during the decennial census, however, sufficient staff to provide assistance may not be available to support several hundred locations across the country.

Similar problems contributed to the Internal Revenue Service's (IRS) much-publicized difficulties in converting to new automated equipment in 1985. IRS did not establish an adequate quality assurance program, and some programs ran inefficiently while other programs failed to meet users' needs. This contributed to inaccurate notices to taxpayers, untimely responses to inquiries, and increased interest paid by the government on delayed refunds.

Without sufficient time to adequately test the software, problems will have to be resolved during early census activities, which could jeopardize the quality of census data and lead to increased costs. Because of such risks we recommended in our minicomputer report that the Census Bureau prepare a formal contingency plan in the event the minicomputer system does not operate properly. This plan should include provisions to use available mainframe capacity and, if necessary, do some operations manually.

DELAYS AND CHANGES IN PRELISTING

Next let me discuss some concerns we have about changes and delays in the Bureau's development of address lists for suburban

and rural areas. Address lists are important because they are used to deliver census questionnaires and serve as a control list of nonrespondents for follow-up activities. Originally, the Bureau planned to canvass suburban and rural areas, called prelisting, to develop address lists for an estimated 45 million households starting in February 1988.

The planned starting date for the 1990 prelist operation was a year earlier than in the 1980 census. This additional time was provided as a contingency because of the delays experienced in completing the prelist for the 1980 census. In that census the Bureau cancelled a planned independent Postal Service check of rural and suburban addresses and compensated by initiating an expensive recanvassing procedure.

Primarily because of late map production and concerns about the ability to develop good mailing addresses, the Bureau changed its prelist plans. Automated files needed to develop the maps are being generated by the Bureau's automated geographic support system, which the Bureau estimates will cost about $371 million for the 1990 census, or about twice its 1982 estimate. The Bureau significantly underestimated the computer capacity requirements and the time needed to prepare software for these automated files. These problems were compounded by the late acquisition of the minicomputers, which were to be used to prepare computer tapes needed to print the maps.

The Bureau changed its plans for prelisting in the following three ways:

-- First, the Bureau decided not to prelist 2 million housing units. Instead, the Bureau will enumerate these units using its traditional door-to-door canvass enumeration procedure, without the aid of a control list. This could result in a less accurate census count.

-- Second, it deferred the prelist of 10.5 million housing units to the fall of 1989, representing a minimum 1-year delay. For these units the Bureau, rather than the Postal Service, will deliver the questionnaires. No independent Postal Service address check is planned for these units. A Bureau study of its delivery of questionnaires in the 1986 pretest did not reveal positive results. The study commented that some housing units did not receive a questionnaire and some received two questionnaires. The study stated, "The actions of the enumerators resulted in gaps in coverage, misdirected mail, and increased nonresponse workload."

-- The third change involved postponing for 4 months, from February 1988 to June 1988, the start of prelist operations for the remaining 32.5 million units. At this point, it is too early to speculate what effect this delay will have on prelist operations.

CHANGES IN SPACE REQUIREMENTS

Finally, I would like to make some brief comments on the Bureau's space acquisition. In 1986, when the Bureau was proposing to use 10 to 15 processing offices, we were concerned that this significantly higher number of offices, compared to the 3 used in 1980, would create management problems and would increase the cost of the census. In 1987, the Bureau revised its estimate for the number of processing offices to 11. The Bureau is currently considering using seven offices, two of which have been opened. The Bureau stated in a recent appropriations hearing that the final number will be reflected in its fiscal year 1990 budget. We are concerned that this decision has not been finalized at this late stage of the census cycle. Changes in the number of processing offices will affect census workflows, operations, and the use of automation. This is but another example of untimely decision-making that we have noted throughout the 1990 Decennial Census planning process.

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Overall, we believe that the Bureau will be able to conduct the 1990 census and provide counts to the President by the statutory deadline. However, we are concerned that the lack of time to develop and test software for the 1990 census, particularly under census-like conditions in the dress rehearsal, could adversely affect the accuracy and increase the cost of the 1990 census. Because of this situation I want to reemphasize the importance of our recommendation that the Bureau prepare a contingency plan in case the minicomputers do not operate as intended.

This concludes my statement, and I would be happy to respond to any questions.