

DOCUMENT RESUME

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[Review of Certain Costs Associated with Pretests for the 1980 Census]. GGD-78-2; B-78395. October 11, 1977. 10 pp.

Report to Rep. William Lehman, Chairman, House Committee on Post Office and Civil Service: Census and Population Subcommittee; by Elmer B. Staats, Comptroller General.

Issue Area: Intergovernmental Relations and Revenue Sharing:  
Long-range Improvements in Assistance (403).

Contact: General Government Div.

Budget Function: Commerce and Transportation: Other Advancement  
and Regulation of Commerce (403).

Organization Concerned: Bureau of the Census.

Congressional Relevance: House Committee on Post Office and  
Civil Service: Census and Population Subcommittee.

Cost data of the 1980 census pretests were examined to determine problems experienced, their cause, and their potential impact on the cost estimates of the 1980 census.

Findings/Conclusions: The pretests cost significantly more than anticipated, but an accurate projection of 1980 census costs was not possible because: data were not accumulated in a manner to facilitate projection; procedures were experimental; geographic areas chosen were not representative; and better public cooperation may be obtained in the actual census. Major problem areas revealed by the pretests which could have an impact on the 1980 census include: poor mail response to questionnaires, lower productivity achieved by enumerators than for the 1970 census, and higher personnel turnover than in the 1970 census. Cost overruns of 28.6% for Travis County, Texas, and 73.4% for Camden, New Jersey, reflected the impact of these problems. The Bureau of the Census estimate for the cost of the 1980 census was revised from \$565 million to \$874 million in August 1977. This estimate may need to be revised upward because no provision was made for cost escalation. (HTW)

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COMPTROLLER GENERAL OF THE UNITED STATES

WASHINGTON, D.C. 20548



B-78395

October 11, 1977

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

*Released*  
*10/27/77*

Dear Mr. Chairman:

In response to your letter of August 9, 1977, we examined estimated and actual cost data of the 1980 census pretests to determine problems experienced, their cause, and their potential impact on the cost estimate of the 1980 census. We reviewed the completed pretests in Travis County, Texas, and Camden, New Jersey, and the ongoing pretest in Oakland, California. We reviewed budgetary and accounting records, and related documents such as evaluation reports. We also interviewed Bureau officials. As requested, we did not obtain the Bureau's written comments on our findings. We did, however, obtain agency views through informal conferences.

The pretests cost significantly more than anticipated. However, an accurate projection of 1980 census costs based on pretest data is not possible because:

- pretest budget and accounting data was not accumulated in a manner which would facilitate such a projection,
- many pretest procedures were experimental and used for determining which procedures would be used in the actual census,
- geographic areas chosen for the pretests were not selected to be representative of the Nation as a whole, and
- better public cooperation may be obtained in the actual census because of greater publicity and the public's recognition that it is the real thing.

GGD-78-2

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A \$565 million estimate for the cost of the 1980 decennial census, prepared by the Bureau in February 1977, and introduced into the appropriations hearings earlier this year, was considerably less than an August 1977 estimate. The August estimate is about \$874 million and incorporates, to some extent, the potential impact of problems experienced in the pretests, including lower than anticipated mail response rates and higher than anticipated personnel turnover. The \$874 million estimate may need to be revised upward because no provision was made for cost escalation.

PROBLEM AREAS WHICH COULD AFFECT  
THE COST OF THE 1980 CENSUS

Several major problem areas surfaced during the pretests which could impact on the 1980 census. These include:

- poor mail response to the questionnaires,
- low enumerator productivity, and
- high personnel turnover.

Poor Mail Response 1/ Increases  
Followup Costs

A key item that impacts on costs is the mail response to the questionnaire. When persons do not respond by mail to the questionnaire, the Bureau has to do costly followup work. The mail response rate in all three pretests was below anticipated levels.

In the Camden pretest, for example, the Bureau estimated a 65-percent response rate to all questionnaires mailed. However, the response rate experienced was only 41 percent before followup started. The experience in the 1970 census for Camden was much better--an 82-percent response rate was obtained. The Bureau attributes the low response rate in the Camden pretest to a change in the area's population composition since 1970 and to an increased distrust of the Government.

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1/There are two mail responses that 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 is used in this report because we are attempting to measure effort. The Bureau follows up on all non-responses.

Mail response rates in the other two pretests were better than that experienced in Camden although still below anticipated levels. A 65-percent rate, before followup, was experienced in Travis compared to an estimated 75-percent response rate. Travis is considered an easier area to enumerate than Camden. In Oakland, the most recent pretest, a relatively low estimate of 55 percent was made, influenced by experience in the Camden and Travis pretests. However, here again the actual response rate before followup was below the estimate--only 49 percent.

Bureau officials advised us that the response rate in the actual census should be higher than that experienced in the pretests. They believe that the public is prone to cooperate more for the actual census than for the pretests. This position is somewhat substantiated by the results obtained in the pretests and census for 1970. The mail response to questionnaires mailed to occupied households improved between the 1970 pretests and the actual 1970 census. Data on the response to total mail outs in the 1970 pretests was not available.

### Low Productivity

Productivity during the 1980 pretests was below that achieved during the 1970 census. In the 1970 census, each enumerator completed about 15 cases a day. During the pretests, the enumerators completed only about 9.5 cases a day, representing a decrease in productivity of 37 percent. Bureau officials commented that a different type of person is being employed. For the 1970 census, the Bureau employed a large number of housewives. However, according to Bureau officials, housewives are no longer available for this type of short-term work. Pretest employees consisted primarily of the "hard core" unemployed and recent college graduates who were not from the areas being enumerated. Bureau officials also attributed the low productivity to a changed work ethic. Further, they believed that the piece rate incentive system to promote productivity may be adversely affected by provisions of the Fair Labor Standards Act which require a minimum hourly wage and overtime pay.

### High Personnel Turnover

Personnel turnover rates during the 1970 census ranged from 20 to 25 percent according to Bureau officials, whereas the turnover rates for the 1980 pretests ranged from 40 to 60 percent, requiring the Bureau to hire and train more employees.

Bureau officials commented that the higher turnover can be attributed to less public cooperation and the different type of employee. They pointed out that much of the work performed by temporary employees is unpleasant and sometimes dangerous. Enumerators are often required to work at night and sometimes in high crime neighborhoods.

### COST OVERRUNS

Significant cost overruns occurred in the two completed pretests, reflecting to some degree, the impact of the problems. Data obtained from the Bureau showed the following:

#### Travis and Camden Pretest Overruns (in thousands)

<u>Pretest Area</u>	<u>Original Estimated Cost</u>	<u>Recorded Cost 7/31/77</u>	<u>Overruns</u>	
			<u>Amount</u>	<u>Percentage</u>
Travis	\$1,769	\$2,275	\$506	28.6
Camden	\$ 620	\$1,075	\$455	73.4

We attempted to compare budgeted and actual pretest cost data by operation to isolate the causes of the cost overruns. However, the Bureau's budgeting practices for the pretests do not generally provide a valid basis for a comparison with actual costs. Some Bureau divisions did not prepare budgets or submitted them after the pretests were underway. Further, the headquarters divisions do not prepare budgets by operations. In addition, recorded cost data is of questionable validity because large amounts were charged to incorrect operational cost codes. Consequently, any analysis based on a comparison of estimated and actual costs, by operation, is of questionable value.

Recognizing the limitations on the Bureau's data, we reviewed cost overruns for a few key operations which will be performed in the 1980 census. We compared available budget estimates and actual cost data for followup and related operations in the Travis and Camden pretests to gain some insight into how the problems experienced may impact on the 1980 census cost estimate.

Travis County

In the Travis County pretests, the Bureau experienced an overrun of about 29 percent in costs directly related to the followup work. The cost overruns are presented below.

Cost Overruns for Travis Followup Work

<u>Operations</u>	<u>Budget Estimate</u>	<u>Recorded Costs</u>	<u>Overrun</u>
Followup #1	\$131,494	\$161,685	\$30,191
Training for followup #1	34,306	32,591	(1,715)
Followup #2	51,989	83,545	31,556
Training for followup #2	<u>5,811</u>	<u>10,682</u>	<u>4,871</u>
Totals	<u>\$223,600</u>	<u>\$288,503</u>	<u>\$64,903</u>

The Bureau's district manager for the Travis County pretest cited several reasons for the cost overruns in the followup operations, including:

- a high employee turnover rate,
- underestimating the number of housing units,
- overestimating the mail response rate, and
- lower productivity than anticipated.

Because of the high employee turnover rate, more personnel had to be trained thereby increasing costs incurred for training. Because the number of housing units were underestimated, more staff had to be hired to do the work. And, because the mail response was overestimated, more followup work than anticipated had to be done.

The district manager said that the lower productivity could be attributed to several factors including:

- a change in the work ethic since the 1970 census, and

--the Bureau's inability to obtain the type of employee used in the 1970 census.

For the 1970 census, the Bureau's typical employee was a middle-aged housewife from the area being enumerated. In the Travis County pretest the Bureau employed recent college graduates who were not from the area. The district manager believed that higher productivity is obtained from employees who reside in the areas being enumerated.

Bureau officials pointed out that problems such as those discussed above caused project stretchouts which contributed to increased overhead costs for such items as space rental, utilities, and supervision.

#### Camden Pretest

In the Camden pretest, the Bureau experienced an overrun of about 57 percent in direct costs for followup work. The cost overruns are presented below:

#### Cost Overruns for Camden Followup Work

<u>Operations</u>	<u>Budget Estimate</u>	<u>Recorded Costs</u>	<u>Overrun</u>
Followup #1	\$ 60,752	\$ 87,115	\$26,363
Training for followup #1	11,053	25,127	14,074
Followup #2	28,747	40,130	11,383
Training for followup #2	<u>3,196</u>	<u>10,505</u>	<u>7,309</u>
	<u>\$103,748</u>	<u>\$162,877</u>	<u>\$59,129</u>

We were advised by key Bureau officials who worked on the project that the major problem was the lower than anticipated mail response rate. In addition, many of the questionnaires that were received were not properly completed. As a result, for followup #1 there was a case load of 21,537 whereas the Bureau budgeted for 14,110 cases. For followup #2 the Bureau had budgeted for a case load of 9,100 whereas there was actually a

case load of 14,202. This situation resulted in more persons working longer periods of time as well as more money being spent on training. Further, the Bureau had difficulty in obtaining a sufficient number of qualified job applicants from the areas being enumerated. Also because of personnel turnover the Bureau was never able to obtain the desired number of enumerators. These problems and low productivity compounded the problem of higher case loads.

BUDGET FOR 1980 DECENNIAL CENSUS

In February 1977 the Bureau estimated the cost of the 1980 decennial census at \$565 million. This estimate, introduced into the March 1977 appropriations hearings, had very little documentary support. The estimate was developed by adjusting the \$221.6 million cost of the 1970 decennial census as shown below:

Derivation of the February Estimate  
(in millions)

Cost of 1970 census	\$221.6
Adjustments basically for cost increases and a larger workload	224.8
Increases for coverage improvement	<u>123.7</u>
	570.1
Savings from increased processing efficiency	<u>(5.0)</u>
Estimated cost of 1980 census	<u><u>\$565.1</u></u> -----

Six months later in August 1977, the Bureau revised its estimate to \$874 million. Bureau officials stated that the revised budget was computed from a zero base using recent experience, including information from the pretests. The following schedule shows the comparison between the 1970 costs and the two 1980 budgets by fiscal year.

Comparison of Actual 1970 Census Costs  
With 1980 Budgets  
(in millions)

<u>1970 Census</u>		<u>1980 Census 1/</u>		
<u>Fiscal Year</u>	<u>Actual Cost</u>	<u>Fiscal Year</u>	<u>Feb. 1977</u>	<u>Aug. 1977</u>
1964	\$ .5	1974	\$ .6	\$ .6
1965	.9	1975	2.2	2.2
1966	1.5	1976	5.2	5.2
Transition quarter	-	Transition quarter	2.6	2.6
1967	3.1	1977	20.4	20.3
1968	5.7	1978	31.9	31.7
1969	15.6	1979	149.1	145.6
1970	121.4	1980	239.9	524.9
1971	45.8	1981	69.8	86.2
1972	16.0	1982	26.8	34.6
1973	<u>11.1</u>	1983	<u>16.6</u>	<u>20.0</u>
Totals	<u>\$221.6</u> -----		<u>\$565.1</u> -----	<u>\$873.9</u> -----

1/ Actual costs through transition quarter; budget estimates for subsequent years.

Budget estimates and supporting rationale were not available for all of the Bureau's divisions. The field division was the only organization for which a detailed estimate was available. About \$515 million of the overall estimate is for field use, \$430 million of which is for use in the year of the census--fiscal year 1980.

The budget for the field division includes considerable detail on how the estimates were derived. We did not analyze the basis for this estimate. However, we did note that factors for mail response and personnel turnover are included in the computations.

Bureau officials are estimating that mail response and personnel turnover rates will be more favorable during the actual census than they were during the pretests. For areas like Camden and Oakland, a 55-percent response rate is anticipated versus the 41 and 49 percent, respectively, experienced during the pretests. For areas like Travis, a 75-percent response rate is anticipated versus the 65 percent experienced in the pretest. For rural areas, in which no pretests were conducted, a 70-percent response rate is anticipated. With respect to personnel turnover, the field estimate assumes a 20 to 40 percent turnover rate for the enumerators versus the 40 to 60 percent experienced during the pretests.

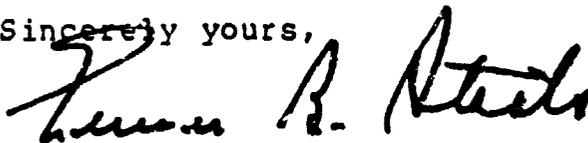
Based on experience related to the pretests for the 1970 census and the actual census, the Bureau's optimism may be justified. The above mail response and enumerator turnover rates are critical to the cost of the 1980 census. If any of the factors are overly optimistic there could be a substantial increase in the total cost of the 1980 census.

We noted that the budget estimates are based on October 1976 dollars and do not provide for cost escalation for such items as: future salary increases to Federal employees; increases in the minimum wage for temporary employees; and potentially higher costs for travel, space rental, and procurement. Increases in these costs will result in an upward budget revision.

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.

If we can be of further assistance in this matter, please let us know.

Sincerely yours,

A handwritten signature in cursive script, appearing to read "Kenneth B. Steeds". The signature is written in black ink and is positioned to the right of the typed name.

Comptroller General  
of the United States