

U.S. DEPARTMENT OF COMMERCE
Office of Inspector General



**PUBLIC
RELEASE**

BUREAU OF THE CENSUS

*Dress Rehearsal Quality Check Survey
Experience Indicates Improvements
Needed for 2000 Decennial*

Audit Report No. ESD-11449-9-0001 / September 1999

Office of Audits, Economics and Statistics Audits Division



TABLE OF CONTENTS

EXECUTIVE SUMMARY	i
INTRODUCTION	1
PURPOSE AND SCOPE OF AUDIT	4
FINDINGS AND RECOMMENDATIONS	5
I. Delayed Start in Dress Rehearsal Operations May Have Degraded Data Quality	5
Recommendations	6
Agency Response	6
OIG Comment	7
II. Quality Assurance Needed to Prevent Fraud	7
Recommendation	8
Agency Response	8
OIG Comment	8
III. Person Interview Cases Hampered by Technical Problems and Misunderstood Field Procedures	8
A. Check-in program did not always process transmitted cases as planned	9
B. Interviewers were not given sufficient guidance on how to restart or retransmit cases	9
C. Purpose of automation design feature misunderstood by interviewers	10
D. Technical and procedural problems compounded by inadequate communication	11
E. Conclusion	11

	Recommendations	11
	Agency Response	12
	OIG Comment	12
IV.	Performance Reports Not Fully Tested During Dress Rehearsal	12
	Recommendations	13
	Agency Response	13
	OIG Comment	13
Appendix I - Agency Response to Draft Audit Report		

EXECUTIVE SUMMARY

The Constitution mandates that a census of the nation's population be taken every 10 years for the purpose of congressional apportionment. Census data is also used for state and federal redistricting and allocating federal funds. Data from a decennial census provides official, uniform information gathered over decades on the nation's people and their social, demographic, and economic characteristics.

The Commerce Department's Bureau of the Census is responsible for conducting the decennial census. The next decennial census will be on April 1, 2000. The bureau conducted a dress rehearsal to test various operations and procedures to be used in the decennial. The bureau selected three sites to conduct dress rehearsal activities: an 11-county area including the city of Columbia, South Carolina; the city of Sacramento, California; and the Menominee American Indian Reservation in Wisconsin. The combination of a small city-suburban-rural site, a large urban site, and an American Indian Reservation site was chosen to provide a comprehensive testing environment for refining planned 2000 decennial methodologies. The bureau believes that the three sites provided a good operational test of decennial procedures and systems. The bureau established temporary local census offices in Columbia and Sacramento for the dress rehearsal.

During a decennial census, the bureau attempts to count everyone in the nation. Nevertheless, many are missed--in 1990 the estimated undercount was about 4 million residents. For 2000, the bureau planned to use the quality check survey in an attempt to arrive at a better estimate of the population. Under this methodology, the direct enumeration and the subsequent quality check sample survey would be conducted independently. The bureau maintains that the results of each, when mathematically combined, will result in a more accurate population estimate. However, using statistical sampling to adjust the census totals is opposed by the congressional majority. The issue of whether statistical sampling can be used in the census was raised to the Supreme Court, which in January 1999 ruled that sampling could not be used to apportion the 435 congressional seats, but could be used for other purposes, such as redrawing the boundaries of congressional districts and determining how federal funds will be distributed to the states.

Even though statistical sampling will not be used to adjust the results of the direct enumeration, it will still be used to measure the "quality" of the direct enumeration - thus, in one form or another, it will be a part of the design for the 2000 decennial.

After the bureau completes the census, including exhausting reasonable attempts to reach all households that did not respond to the census questionnaire mail-out, it begins the quality check survey, of which there are five major operational phases. In the first phase, it develops an *independent listing* for each housing unit contained in the sample. Second, during *person interview*, interviewers, using laptop computers to gather and transmit census information, contact each housing unit in the sample. Third, *person matching* compares the results obtained during person interview with the results obtained in the census. Fourth, the bureau attempts to resolve discrepancies from person matching during *person follow-up*. Fifth, and finally, once every

individual for whom data was collected in the sample has been compared with that from the census, the bureau performs the *population estimation*.

The OIG has conducted a performance audit of selected dress rehearsal operations in Columbia and Sacramento. Our audit objective was to test dress rehearsal quality check survey operations with particular emphasis on person interview and person follow-up procedures. Our review disclosed a number of areas where we believe Census needs to make improvements in its preparation for the 2000 decennial:

- Person follow-up encountered significant delays because the bureau was unable to provide the data necessary for field operations to begin. In trying to keep the quality check survey on schedule, bureau interviewers took shortcuts that we believe could degrade the accuracy of survey results. We recommend that the bureau identify and resolve for the 2000 decennial the underlying causes of delayed person follow-up operations, and ensure that data collection procedures are followed by interviewers in the field (see page 6).
- The bureau did not have procedures in place during person follow-up to deter fraudulent interviews and to detect those that may have occurred because it initially believed that such a process would be too complex to develop. The person follow-up phase is particularly susceptible to fraudulent interviews; therefore, we believe the benefits of having such a process outweigh the challenges of developing it. For example, both direct enumeration data and quality check survey data are preprinted on the questionnaire, making it very easy for the interviewer to falsify the questionnaire. We recommend that a quality assurance plan be developed for person follow-up that is designed to deter and detect fraudulent data collection for implementation in the 2000 decennial (see page 8).
- The use of laptop computers during the person interview phase generally worked as intended. However, interviewers identified several problems related to the electronic transmission of person interview cases from their laptops to the headquarters computer server. These problems were caused in part by software errors in the case check-in program on the computer server, by insufficient guidance on how to retransmit and restart cases, and by miscommunication between headquarters officials, regional officials, and staff in the field. We recommend that the bureau correct and operationally test the check-in program so that it properly processes and sends receipts for files transmitted; communicate clearly through training materials and other documentation the precise circumstances and procedures for when and how to retransmit and restart cases; and determine whether case explanatory notes will be suppressed when a case is reassigned. If the explanatory notes are suppressed, then communicate through training materials that the notes will not be available when the case is reassigned (see page 11).

- The bureau intended to test the effectiveness of using the laptop to provide interviewer performance information to field supervisors. However, a number of technical problems hindered the ability of the bureau to fully test the performance reporting system during the person interview and person follow-up phases of the quality check survey. For example, software problems delayed the deployment of one report onto the laptops, while the design of another report did not meet user needs. We recommend that the bureau take the necessary actions to integrate the various systems and components needed for providing performance reporting, and resolve remaining technical impediments to providing timely performance information to field managers using laptop computer technology. We also recommend that the bureau operationally test the performance reporting system before the 2000 decennial to ensure correct and timely information is available to field managers (see page 13).

The Bureau concurred with the recommendations. The Bureau's response to our draft report is attached as Appendix I and we have incorporated the Bureau's comments into the final report where appropriate. We commend the Bureau on its responsiveness in taking quick action to address the concerns noted in our report. Many of the issues we raised have already been resolved. In other cases, implementing actions are planned. The actions taken or proposed by the Bureau in response to our report, if properly implemented for the 2000 decennial, will meet the intent of our recommendations.

INTRODUCTION

The Office of Inspector General has completed a performance audit of selected dress rehearsal operations in Columbia, South Carolina, and Sacramento, California. The dress rehearsal provided for the operational testing of procedures and systems for the 2000 decennial.

Although the Census Bureau attempts to count every resident in the country during a decennial census, some undercount of the population has occurred in all decennials. The challenge of counting all persons has become increasingly difficult as public cooperation with the census process continues to decline. In 1990, the bureau conducted an independent quality check survey, called the post-enumeration survey, to help isolate where the undercount was greatest and provide a basis for adjusting the total undercount to include those populations missed. The 1990 survey revealed a net undercount of approximately 4 million, but the decennial totals were not adjusted for the undercount.

For 2000, the bureau has redesigned the plan for the decennial, integrating statistical methods, including the quality check survey, into the design. Such a design will treat the traditional census operation and the quality check survey as two statistically independent operations that when mathematically combined, should, according to bureau officials, result in a more accurate count of the total population. This integrated methodology was operationally tested in the dress rehearsal.

Because of a disagreement between the administration and the congressional majority over the bureau's planned use of the quality check survey, full funding for fiscal year 1998 was delayed. As part of the budget compromise, the administration agreed that the bureau would designate Columbia as a non-sampling dress rehearsal site, thereby not integrating the results of the quality check survey into the final site population number for the site. Because of its similarity to the 1990 survey, the quality check survey for Columbia is referred to as the post-enumeration survey. In Sacramento, the results from the quality check survey were integrated into the final site totals; therefore, the survey is referred to as the *integrated coverage measurement*. However, it is important to note that "operationally" the surveys remain identical; consequently, throughout the report, we make no distinction between the quality check surveys used at the two sites.

There are five major quality check survey operational phases: (1) independent listing, (2) person interviewing, (3) person matching, (4) person follow-up, and (5) population estimation.

During *independent listing*, a separate address list for each housing unit contained within the survey's sample blocks is developed for the quality check survey. To develop the address list, interviewers systematically canvass each block. This operation is independent of the address list building activity conducted for the census. The independent list is then compared to the census address list, and all differences in the sample blocks are sent to the field for follow-up and reconciliation, thus producing an "enhanced address list" for the sample blocks.

During *person interviewing*, the quality check survey mobilizes temporary interviewers who conduct computer assisted person interviews, on the telephone or in person, at each known housing unit within the sample. Interviewers ask questions to establish conclusively whether residents should have been counted at the sample address on census day. Respondent answers are recorded onto the laptop. At night, the data on the laptop is transmitted via modem to a central computer at headquarters.

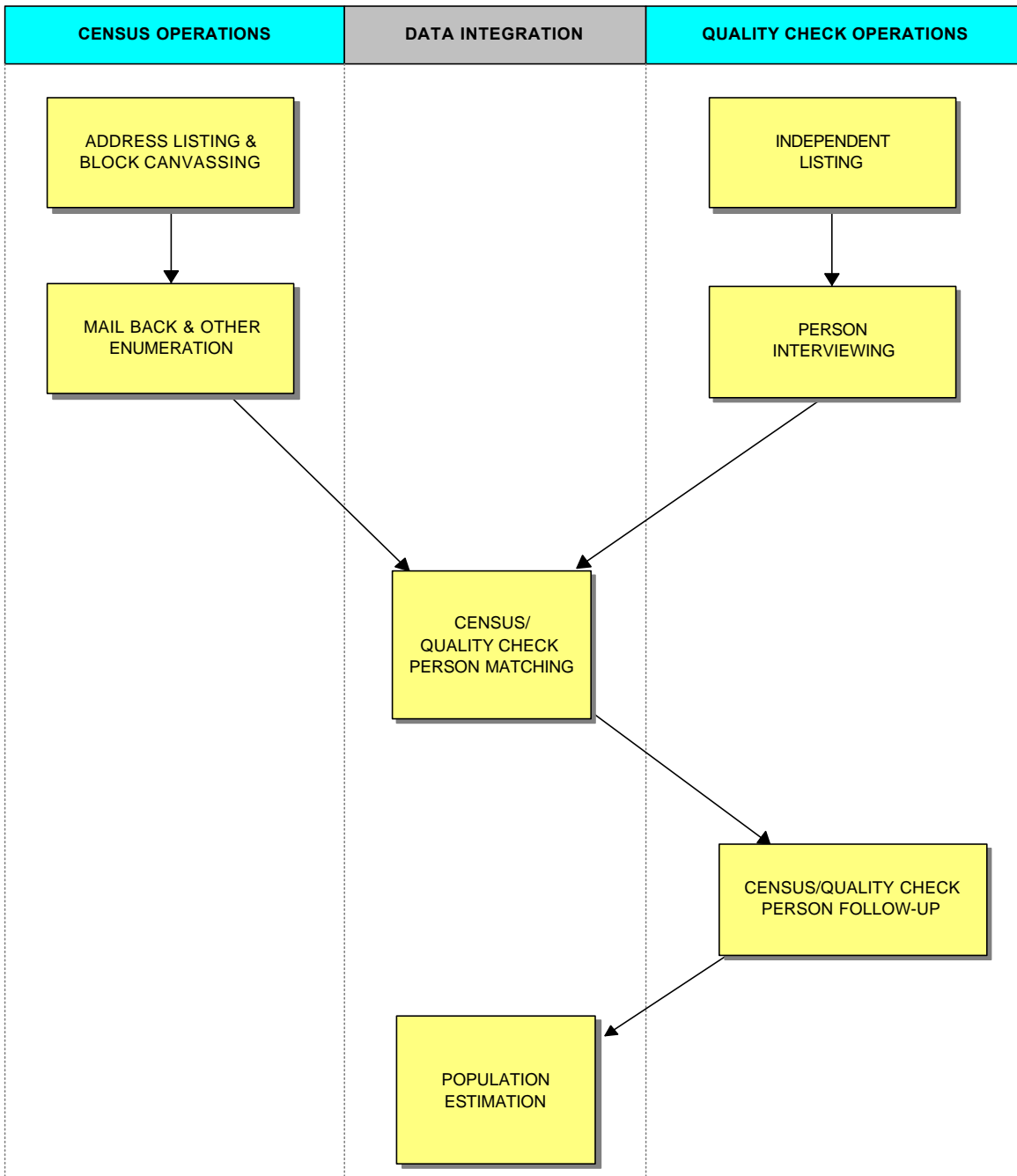
In *person matching*, the bureau compares the data collected during person interviews to the data collected during the regular census operations. A combination of software and clerical match procedures is used to determine whether each person in the quality check survey sample is identified by the regular census operation, the quality check survey, or both. Cases without enough information or with conflicting information are flagged for reconciliation during the next phase. The bureau's Jeffersonville, Indiana, processing center is responsible for matching the data.

The processing center prepares a paper questionnaire for each housing unit requiring follow-up. Each questionnaire contains instructions regarding the type of data needed from each housing unit. During *person follow-up*, interviewers visit the housing units and collect the data required to resolve the discrepancies noted during person matching. The questionnaires are then returned to the processing center, where final determinations are made on the match status of each remaining person in the quality check survey sample.

Once every individual for whom data was collected within the quality check survey sample has been determined to have been either counted or missed by the regular census and the quality check survey, the bureau can begin the *population estimation*.

The basic operational flow of operations for a census using a quality check survey is summarized by the flow chart on the next page.

DRESS REHEARSAL OPERATIONAL FLOW FOR QUALITY CHECK SURVEY



PURPOSE AND SCOPE OF AUDIT

The purpose of our audit was to evaluate selected quality check survey activities at the dress rehearsal sites in Columbia, South Carolina, and Sacramento, California. Specifically, we assessed the adequacy of procedures used in conducting person interview and person follow-up activities. We reviewed applicable laws, regulations, policies, and procedures; examined selected files and records; and reviewed appropriate documentation. OIG teams observed interviewers going door-to-door as they collected data for person interview and person follow-up. We interviewed headquarters officials in Suitland, Maryland; regional personnel in Charlotte, North Carolina, and Seattle, Washington; and field staff in Columbia and Sacramento.

We reviewed the adequacy of internal controls for person interview and person follow-up and found that procedures to deter and detect fraudulent interviews during person follow-up were not in place. We discuss this internal control weakness on page seven of the report. We did not assess the reliability of computer-generated data because such data was not used in our review. Finally, we reviewed and evaluated compliance with applicable laws, regulations, policies, and procedures. Specifically, we reviewed (1) Title 13, U.S. Code; (2) Office of Management and Budget Statistical Policy Directive No. 15; (3) Public Law 103-430, which specifies cooperation between the Census Bureau and the U.S. Postal Service; and (4) the Paper Work Reduction Act (Title 44). We found no instances of noncompliance with applicable laws and regulations. In addition, the OIG's Office of Systems Evaluation is conducting separate reviews of decennial-related computer systems, and our Atlanta regional staff is reviewing payroll issues. These matters will be addressed in separate reports.

Our audit fieldwork was conducted from September 1998 to December 1998 at the bureau's headquarters in Suitland, its regional offices in Charlotte and Seattle, and the dress rehearsal sites in Columbia and Sacramento. The audit was conducted in accordance with *Government Auditing Standards*, issued by the Comptroller General of the United States, and was performed under the authority of the Inspector General Act of 1978, as amended, and Department Organization Order 10-13, dated May 22, 1980, as amended.

FINDINGS AND RECOMMENDATIONS

I. Delayed Start in Dress Rehearsal Operations May Have Degraded Data Quality

Person follow-up started several weeks later than originally scheduled. According to bureau officials this delay was caused by the additional time, approximately three weeks, it took to process duplicate forms created by the second mailing. During the dress rehearsal, we found that in trying to keep the quality check survey on schedule, the time allotted to complete person follow-up was compressed, and the curtailed schedule led to interviewer shortcuts that we believe may have degraded the quality of data collected.

Person follow-up was originally scheduled to start in Sacramento on September 28. However, questionnaires for field follow-up were not received from Jeffersonville until October 23, the date the operation was originally scheduled to be completed. Similarly, Columbia did not receive its first questionnaires until October 22, even though the operation was scheduled to start on October 13. In part, because person follow-up was delayed, Sacramento had 10 days and Columbia 18 days to complete an operation originally scheduled for four weeks.

We found that in trying to keep person follow-up on schedule, interviewer shortcuts were taken that we believe could degrade the accuracy of quality check survey results. For example, if a member of the household was not home on an initial visit, in many cases that we observed, interviewers immediately went to a neighbor or “proxy” to collect the data. In one instance, an apartment building manager told us that an interviewer obtained information from her on about a dozen cases without actually visiting the individual apartments.

These shortcuts are inconsistent with census written procedures, which require interviewers to visit households six times before taking a proxy. The quality of data can suffer when the bureau uses proxies because other sources, such as landlords, neighbors, or relatives, may not have complete information on the occupants of a housing unit. When we discussed the use of shortcuts with interviewers and crew leaders in Sacramento, they acknowledged using shortcuts and defended this change in procedure as the only way to complete the operation in the limited time allowed.

Both Seattle and Charlotte regional quality check survey staff responsible for Sacramento and Columbia, respectively contended that they did not authorize any changes to procedures concerning when to obtain proxy information. Nevertheless, whether it was authorized by the regional staff or not, interviewers in the field felt the pressure to complete the questionnaires as quickly as possible and took shortcuts that we believe could degrade data quality.

In addition, because of the shortened time to complete person follow-up, Sacramento was forced to use all available interviewers rather than selecting the best interviewers for this critical phase,

as had been planned. Use of less experienced or less qualified interviewers on such a critical operation also could decrease data quality. Seattle regional officials acknowledged that they had to use all available interviewers to complete person follow-up.

We discussed the delayed start with bureau headquarters officials, who stated that person follow-up field activities were prepared to begin on time but could not because person matching -- that is, matching direct enumeration data with quality check data -- ran behind schedule. Bureau officials told us that the delays began with the processing of census forms. Census form processing had to be extended three weeks in order to handle the complexity introduced by the large volume of duplicate forms created by the blanket second mailing. Bureau officials informed us that they do not plan to include a second mailing in the design for 2000.

Our belief that schedule delays can directly affect the quality of data is shared by many bureau officials. The bureau's own analysis¹ highlighted the adverse effect of scheduling delays on accuracy. The analysis recognized that to complete all census activities by legal deadlines, the durations of many activities were shortened from those originally estimated in both the quality check survey schedule and the larger census schedule in which the quality check survey is embedded. In our opinion, if the decennial experiences any serious or systemic delays during implementation, the bureau will be unable to complete it on time without sacrificing accuracy.

Recommendations

We recommend that the Director, Bureau of the Census, take the following actions:

1. Identify and resolve for the 2000 decennial the underlying causes of delayed person follow-up operations.
2. Ensure that data collection procedures are followed by interviewers in the field.

Agency Response

Recommendation 1. The Census Bureau concurred with our recommendation. Bureau staff are working to resolve the underlying causes of delayed person follow-up operations. The difficulties in unduplication experienced during the Dress Rehearsal were more than what Census Bureau staff expected. Steps have been taken to simplify this process. Thus, they do not anticipate any delay due to this operation. In addition, Bureau staff in the Field Division and the Decennial Statistical Studies Division are taking steps to ensure that the follow-up work flows equitably among regions so that they can deploy their qualified and experienced staff effectively.

¹Integrated Coverage Measurement Computer Assisted Person Interview Business Case Analysis, September 18, 1998.

Recommendation 2. The Census Bureau concurred with our recommendation. Bureau staff in the Field Division will review and strengthen instructions and training for field interviewers regarding appropriate use of proxy-respondent rules and strengthen instructions to crew leaders regarding reviewing completed work for possible abuse of the proxy rules. The Census Bureau also believes that providing as much of the work as possible to the field interviewers at the beginning of the interviewing period (i.e. giving them adequate time to make callbacks), would alleviate the possible pressure to take shortcuts. This matter of timing is controlled entirely by how quickly work flows through follow-up preparatory operations at the processing site. Fifteen clerks have been added to the work force to expedite this operation. In addition, the Census Bureau's statistical staff is developing a method to order the Accuracy and Coverage Evaluation clusters being matched in such a manner as to further alleviate workflow problems.

OIG Comment

These actions, if properly implemented for the 2000 decennial, will meet the intent of the recommendations.

II. Quality Assurance Needed to Prevent Fraud

During person follow-up, interviewers revisit housing units in an attempt to resolve differences between data collected during regular census operations and data collected during the person interview phase of the quality check survey. Interviewers are provided with a 10-section questionnaire, and the discrepancies between the direct enumeration data and the quality check data dictate which sections require completion.

Interviewers turn in completed questionnaires to their respective crew leaders. A review process is in place to help ensure the quality of data collected. Questionnaires are reviewed by crew leaders, who make certain that the correct question-and-answer-skip patterns were followed during the interviews, thereby ensuring that the correct data was collected. Next, the questionnaires are reviewed for completeness by field operations supervisors, and then by staff in the regional offices.

Although the bureau had a multi-level review process for the person follow-up questionnaire to ensure it was both correct and complete, it did not have a quality assurance process in place to deter and detect falsified interviews during person follow-up. We found this particularly troublesome since all other phases of the quality check survey have a quality assurance program in place. Furthermore, person follow-up is the last opportunity the bureau has to resolve discrepancies and, in our opinion, it is very susceptible to fraudulent interviews because both direct enumeration data and quality check survey data are preprinted on the questionnaire. With preprinted data it would be very easy for the interviewer to falsify the questionnaire.

Bureau officials explained that a quality assurance process to detect falsified interviews in the person follow-up phase was not used for the 1990 decennial, and one had not initially been planned for the 2000 decennial because the complexities of the person follow-up questionnaire made such a program very difficult to develop. The questionnaire was long and, depending on the responses during the interview, could lead interviewers down several different question and answer paths. In addition, some questions required interviewers to contact three different individuals to determine whether persons were living in a particular location on census day. As a result of these complexities, quality assurance procedures for detecting interview falsification were not included in the 1998 dress rehearsal.

Concerned that such procedures were not in place for person follow-up, we spoke with bureau officials who acknowledged that quality assurance procedures should be in place and agreed that the benefits of such a program outweigh the challenges of developing it. We commend the bureau for its responsiveness to our concerns in this matter.

Recommendation

We recommend that the Director, Bureau of the Census, require that a quality assurance plan be developed for person follow-up that is designed to deter and detect fraudulent data collection for implementation in the 2000 decennial.

Agency Response

The Census Bureau concurred with our recommendation and staff in the Field Division will implement a quality assurance check for person follow-up.

OIG Comment

These actions, if properly implemented for the 2000 decennial, will meet the intent of the recommendation.

III. Person Interview Cases Hampered by Technical Problems and Misunderstood Field Procedures

For the person interview phase, census interviewers at both the Columbia and Sacramento dress rehearsal sites generally thought that the laptop computers worked well. However, they identified several significant problems related to the electronic transmission of completed cases from their laptops to the headquarters computer server. These problems were caused in part by errors in the case check-in program on the computer server, by insufficient guidance on how to restart and retransmit cases, and by miscommunication between headquarters, the regional office in Charlotte, and the temporary workers at the Columbia site. Census officials have told us that the sources of these problems either have been or will be addressed for the decennial.

A. Check-in program did not always process transmitted cases as planned

After interviewers complete their daily assignments, they connect their laptop to a telephone line to dial in to the headquarters computer server to upload completed cases and download new work assignments and e-mail messages. The uploaded cases constitute a file that resides in a central computer buffer until the “check-in program” executes and processes those cases.

The check-in program serves as the electronic gatekeeper between the laptops and various census databases. The program generally verifies the integrity and completeness of each transmitted case before flagging each as either acceptable or requiring regional office supervisory review. For each case transmitted, whether acceptable or not, the program is supposed to send a confirmation to the originating laptop that the case had been received.

However, the check-in program did not perform as intended during the dress rehearsal. For example, when cases were transmitted by the interviewers, the program did not always indicate to the laptops that the transmitted files had been received. Bureau officials explained that the check-in program did not return the appropriate confirmation notices to laptops when multiple transmission files were sent by an interviewer on the same day. The check-in program would return a confirmation notice only for the first batch of cases transmitted that day. This problem caused interviewers to believe that cases sent had not been received, when, in fact, they had been. The check-in program also encountered problems processing cases within a single transmission file. The program is intended to process all of the cases contained within a transmission at the same time. However, software problems sometimes caused the check-in program to suddenly terminate its processing of cases within a transmission file. Bureau officials maintained that all transmitted cases truncated like this were later processed from back-up copies of transmitted files.

The failure of the check-in program to return appropriate confirmation notices and to process such cases in real time concerned interviewers who did not receive timely confirmations. Because the check-in program did not always return the confirmation notices, interviewers were asked to retransmit cases by headquarters staff. However, since cases had already been received, retransmitted cases led to an inordinate number of duplicate cases that regional staff were required to resolve.

B. Interviewers were not given sufficient guidance on how to restart or retransmit cases

The laptops are designed to allow interviewers to retransmit cases that may not have been received or processed properly. It is also designed to permit a full “restart” of a case. Restarting a case deletes any information collected during an interview. However, the training materials

provided to interviewers for the person interview phase were incomplete and did not adequately cover the procedures for retransmitting and restarting cases.

Headquarters computer staff explained that to retransmit cases, interviewers were required to go to a particular screen on the laptops and select the cases to be transmitted. However, these instructions were not adequately documented in interviewer training guides. As a result, interviewers were not properly selecting the cases for retransmission and, in effect, were transmitting empty files to the server. Interviewers believed that their retransmission would address the problem of not receiving a confirmation for previously transmitted cases. But often such retransmissions had no effect. Completed cases still did not receive a confirmation as having been received. These problems led to unnecessary concern and communication among interviewers over the apparent persistent failure of their cases to be transmitted. We believe the bureau could have avoided the confusion regarding the retransmission of cases by providing interviewers with complete guidance on how to retransmit cases.

In addition, interviewers did not clearly understand when it would be appropriate to restart cases. Headquarters officials reported that the restart feature on the laptops was retained from previous automated operations, but was not intended to be used during the dress rehearsal except in rare instances, and then only with supervisory direction. However, several interviewers in Columbia reported that they frequently used the restart feature. For example, some interviewers restarted cases due to the transmission problems. They speculated that if they restarted cases, they might finally receive confirmations of receipt from the server. In another instance, toward the end of the person interview phase, one field representative told us that because he felt more proficient with the laptop, he decided to restart some of his earlier cases in an effort to improve upon them. It is unclear whether he restarted the cases based on memory or whether he reinterviewed households. Regional office officials confirmed that field staff had improperly used the restart function. When we spoke to headquarters officials about this issue, they agreed that specific guidance on when to use restart would have to be developed for the decennial.

C. Purpose of automation design feature misunderstood by interviewers

The laptop software was designed to allow interviewers to add explanatory notes to their cases. Training materials for interviewers clearly explained that the notes were intended to record something that could be useful or save time later, explain something unusual about who lived at an address, or describe special situations concerning the whereabouts of persons on Census Day.

However, once cases were reassigned, the explanatory notes that had been written during the original interview were separated from the case and were no longer available to interviewers. Interviewers, attempting case follow-up, were expecting to find the notes, which would provide useful information about the earlier interview, such as the best time to conduct the interview, strategies that had not previously worked, and even warnings of potentially dangerous situations, such as dogs loose in the yard. Regional office staff could not explain why the notes were not

available. Headquarters officials, however, informed us that the notes for reassigned cases had intentionally been separated, or suppressed, from cases to avoid possible biases in subsequent interviews. Headquarters officials told us that they did not expect that field interviewers would be keying in the type of information that would be so useful to subsequent interviewers. Bureau officials told us that they were reconsidering whether the notes needed to be suppressed for subsequent interviews

D. Technical and procedural problems compounded by inadequate communication

The problems with the check-in program, the restart and retransmission of cases, and the use of explanatory notes were compounded by inadequate communications between headquarters and regional personnel. For example, headquarters officials maintain that they became aware of the problem with the check-in program during the operation, and fixed it before the end of the person interview phase. However, at the operation's end, no interviewer with whom we spoke was aware that the cause of the apparent "loss" of their cases had been fixed or even that the problem had been identified. In addition, regional office staff did not know that cases misprocessed during check-in had been properly accounted for via back-up files. Cases received by the headquarters computer server, but not properly checked in, were still showing up as open on regional management reports.

E. Conclusion

The case processing problems and poor communication caused confusion throughout the person interview phase. In Columbia, field operation supervisors reported that more than 60 completed cases had been unnecessarily reassigned near the end of the operation because regional office reports showed the cases as not yet having been received. We believe that improved communications between headquarters and the regions concerning the status of misprocessed cases could have prevented the unnecessary reassignment of those cases.

Furthermore, check-in problems, in combination with the prevalent use of the restart and the retransmit feature, contributed not only to unnecessary workloads at the regional office to resolve the duplicate cases, but also to unnecessary reinterviews of households and the increased potential for degraded data quality as interviewers attempted to recreate case data from memory.

Recommendations

We recommend that the Director, Bureau of the Census, take the following actions:

1. Correct and operationally test the check-in program so that it properly processes and sends receipts for files transmitted.

2. Communicate clearly through training materials and other documentation the precise circumstances and procedures for when and how to retransmit and restart cases.
3. Determine whether case explanatory notes will be suppressed when a case is reassigned. If the explanatory notes are suppressed, then communicate through training materials that the notes will not be available when the case is reassigned.

Agency Response

Recommendation 1. The Census Bureau, in concurring with the recommendation, advised that corrections have been made and are being tested.

Recommendation 2. The Census Bureau concurred with our recommendation. Two components of Computer Assisted Person Interview training, the newly developed computer-based training module on case management and the revised Laptops Operations Guide will cover appropriate use of the restart and retransmit functions. The Census Bureau will also cover it in the verbatim training as well. The guide and training module will be available to the interviewer for reference throughout the entire interview period. The restart screen also has a warning which allows the interviewer to back out and discourages inappropriate use.

Recommendation 3. The Census Bureau concurred with our recommendation and has determined that the notes will go with all cases and will be covered in person-interview training.

OIG Comment

These actions, if properly implemented for the 2000 decennial, will meet the intent of the recommendations.

IV. Performance Reports Not Fully Tested During Dress Rehearsal

The bureau intended to test the effectiveness of the laptop to provide interviewer performance information to field supervisors. However, a number of technical problems hindered the ability of the bureau to fully test the performance reporting system during the person interview and person follow-up phases of the quality check survey.

During the person interview and person follow-up phases, bureau headquarters, using communications available between headquarters and field laptop computers, were to make performance reports available to field supervisors for monitoring progress and assigning workload. Two types of performance reports were to have been communicated by the bureau to the field: management reports and cost reports.

Management reports provided field supervisors with the status of assigned cases. However, software problems delayed the deployment of these reports to the laptops. These reports were not available until the latter half of the person interview phase. It remains unclear why management reports were not available on the laptop during person follow-up. Headquarters officials maintain that the reports had been deployed to the regional staff; however, regional staff and field managers reported to us that the reports were not available. Regional staff mailed or faxed a copy of the reports to field supervisors daily. However, field supervisors indicated that by the time they received the reports, the data was old and could not be relied upon to manage the operation.

Cost reports provided hours worked and miles driven per case and were formatted by assignment area. However, even though supervisors were assigned to one assignment area, each was responsible for interviewers who sometimes worked more than one area. Thus, the cost reports furnished to each supervisor only included performance information for some, but not all, interviewers for which the supervisor was responsible. Subsequent attempts to repair the report did not work because required important data had not been entered into the payroll system. As a result, these reports were not useful to field supervisors and, for the most part, not used.

The bureau clearly recognizes that the ready availability of computer technology to managers and supervisors in the field offers the potential for managing operations more efficiently and economically. It also offers the ability to transmit performance information to field managers and supervisors for timely action. While the opportunity to fully test the performance reporting system during the dress rehearsal has been lost, action is needed to refine the system for use in the 2000 decennial.

Recommendations

We recommend that the Director, Bureau of the Census:

1. Integrate the various systems and components needed for providing performance reporting, and resolve remaining technical impediments to providing timely performance information to field managers using laptop computer technology.
2. Operationally test the performance reporting system before the 2000 decennial to ensure correct and timely information is available to field managers.

Agency Response

The Census Bureau concurred with both recommendations. Census staff plan to fully test the performance reporting system as part of the systems testing. The Accuracy and Coverage Evaluation Independent Listing operation that occurs in the Fall of 1999, with its relatively small field staff and long field period, provides one last opportunity in a less-stressed data collection environment to identify and work out any additional problems not identified by the systems testing occurring at headquarters.

OIG Comments

These actions, if properly implemented for the 2000 decennial, will meet the intent of the recommendations.



UNITED STATES DEPARTMENT OF COMMERCE
Bureau of the Census
Washington, DC 20233-0001

OFFICE OF THE DIRECTOR

JUL 28 1999

MEMORANDUM FOR George E. Ross
Assistant Inspector General for Audits

Through: Robert J. Shapiro *RJS*
Under Secretary for Economic Affairs

From: Kenneth Prewitt *KP*
Director

Subject: *Dress Rehearsal Quality Check Survey Experience Indicates
Improvements Needed for 2000 Decennial
Draft Report No. ESD-11449-9-XXXX*

This is in response to your memorandum dated June 1, 1999, transmitting the above-referenced draft audit report, which made the following recommendations:

I. 1) Identify and resolve for the 2000 decennial the underlying causes of delayed person follow-up operations.

The Census Bureau Concur: Census Bureau staff are working to resolve the underlying causes of delayed person follow-up operations. The difficulties in unduplication experienced during the Dress Rehearsal were more than what Census Bureau staff expected. Steps have been taken to simplify this process. Thus, we do not anticipate any delay due to this operation. In addition, Census Bureau staff in Field and DSSD are taking steps to ensure that the follow-up work flows equitably among regions so that they can deploy their qualified and experienced staff effectively.

I. 2) Ensure that data collection procedures are followed by interviewers in the field.

The Census Bureau Concur: Staff in the Field Division will review and strengthen instructions and training for field interviewers regarding appropriate use of proxy-respondent rules and strengthen instructions to crew leaders regarding reviewing completed work for possible abuse of the proxy rules. The Census Bureau also believes that providing as much of the work as possible to the field interviewers at the beginning of the interviewing period; that is, giving them adequate time to make callbacks, would alleviate the possible pressure to take shortcuts. This matter of timing is controlled entirely by how quickly work flows through follow-up preparatory operations at the processing site. Fifteen clerks have been added to the work force to expedite this operation. In addition, the Census Bureau's statistical staff is developing a method to order the Accuracy and Coverage Evaluation clusters being matched in such a manner as to further alleviate workflow problems.

- II. *Require that a quality assurance plan be developed for person follow-up that is designed to deter and detect fraudulent data collection for implementation in the 2000 decennial.***

The Census Bureau Concur: Staff in the Field Division will implement a quality assurance check for person follow-up.

- III. 1) *Correct and operationally test the check-in program so that it properly processes and sends receipts for files transmitted.***

Resolved: Corrections have been made and are continuing to be tested in the systems test.

- III. 2) *Communicate clearly through training materials and other documentation the precise circumstances and procedures for when and how to retransmit and restart cases.***

The Census Bureau Concur: Two components of CAPI Person Interview training, the newly developed computer-based training (CBT) module on case management and the revised Laptops Operations Guide (LOG), will cover appropriate use of the restart and retransmit functions. We also will cover it in the verbatim training as well. The LOG and the case management CBT are available to the interviewer for reference throughout the entire interview period. The restart screen also has a warning which allows the interviewer to back out and discourages inappropriate use.

- III. 3) *Determine whether case explanatory notes will be suppressed when a case is reassigned. If the explanatory notes are suppressed, then communicate through training materials that the notes will not be available when the case is reassigned.***

The Census Bureau concurs: Notes will go with all cases. Notes will be covered in person-interview training.

- IV. 1) *Integrate the various systems and components needed for providing performance reporting, and resolve remaining technical impediments to providing timely performance information to field managers using laptop computer technology.***

The Census Bureau concurs: Census Bureau staff plan to fully test the performance reporting system as part of the systems testing. The Accuracy and Coverage Evaluation Independent Listing operation that occurs in the fall of 1999, with its relatively small field staff and long field period, provides one last opportunity in a less-stressed data collection environment to identify and work out any additional problems not identified by the systems testing occurring at headquarters.

IV. 2) Operationally test the performance reporting system before the 2000 decennial to ensure correct and timely information is available to field managers.

The Census Bureau concurs: See response to recommendation #IV-1.

cc: US/EA