

**LESSONS LEARNED: HOW THE NEW  
ADMINISTRATION CAN ACHIEVE AN ACCURATE  
AND COST-EFFECTIVE 2010 CENSUS**

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**HEARING**

BEFORE THE

FEDERAL FINANCIAL MANAGEMENT, GOVERNMENT  
INFORMATION, FEDERAL SERVICES, AND INTER-  
NATIONAL SECURITY SUBCOMMITTEE

OF THE

COMMITTEE ON  
HOMELAND SECURITY AND  
GOVERNMENTAL AFFAIRS  
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**THURSDAY, MARCH 5, 2009**

U.S. SENATE,  
SUBCOMMITTEE ON FEDERAL FINANCIAL MANAGEMENT,  
GOVERNMENT INFORMATION, FEDERAL SERVICE,  
AND INTERNATIONAL SECURITY,  
OF THE COMMITTEE ON HOMELAND SECURITY  
AND GOVERNMENTAL AFFAIRS,  
*Washington, DC.*

The Subcommittee met, pursuant to notice, at 2:31 p.m., in room SD-342, Dirksen Senate Office Building, Hon. Thomas R. Carper, Chairman of the Subcommittee, presiding.

Present: Senators Carper, Burris, McCain, and Coburn.

**OPENING STATEMENT OF SENATOR CARPER**

Senator CARPER. The Subcommittee will come to order. We welcome you, one and all. I am delighted that Senator McCain is able to join us today, and to our guests, as well.

The Subcommittee has responsibility for oversight in a number of areas. One of those is with respect to the Census Bureau's preparation for the 2010 Census, and today we are going to hear from former Census Directors and experts within the statistical community who will offer their valuable insights into lessons learned from past Censuses. It is my hope that their experiences can help the Census Bureau conduct an accurate and cost-effective Census in 2010.

There is a well-known adage that knowledge is power and the Census is an important source of knowledge and information. Census data empowers citizens at every level of government and are integral in achieving equitable political representation and fair allocation of resources. Finding and enumerating nearly 300 million individuals in the correct location is, of course, an extremely daunting task. The 2000 Census involved the hiring of nearly half-a-million temporary workers, the opening of some 500 local Census offices nationwide, processing, I believe, 1.5 billion sheets of paper, and following up with 42 million non-responsive households.

Given the sheer magnitude of such an undertaking, a shortcoming in one area can quickly have a domino effect on other operations. For example, a low mail response rate would increase the

non-response follow-up workload, which in turn would drive the Bureau's staffing needs and drive up costs.

With each Census, the challenge continues to grow in terms of cost and complexity as our population becomes larger, more diverse, and increasingly difficult to enumerate. The cost of the 2010 Census has escalated to an estimated \$14 billion, and that is what my statement says. The cost of the 2010 Census has escalated to an estimated \$14 billion, and I think that is true, making it the most expensive in the history of our country. Put another way, it will cost the Nation an estimated \$100 or so to count each household in 2010, compared with about \$56 in 2013 dollars in 1970. The growing cost of the Census at a time when the Federal Government is facing unprecedented budget deficit highlights the importance of making sure that every additional dollar spent on the Census actually improves the quality of the data.

Although the 2000 Census was an improvement when compared to the 1990 Census, there were still many deficiencies. In 2000, 6.4 million people were missed and 3.1 million people were counted twice, producing a net undercount of some 3.3 million people.

I just interject, usually when we have an overcount, it is people that have more than one house, maybe a second home or a vacation home, or maybe they have a child who is in college in another State, and those are situations that lead to overcounts, and they usually occur among the more affluent families. On the other hand, the undercounts usually occur among a lot of minority families, whether African American or Latino or Native American. But we ended up with an undercount of about 6 million people, for the most part lower-income folks, and an overcount of about 3 million people the last time we did this, mostly of more affluent people. Neither one is a good situation, but that is not what we need for this Census and the conducting of this Census.

At any rate, the 2010 Census is approaching rapidly, as we know, with the Census date less than 13 months away. The Bureau has faced many operational and organizational challenges that have jeopardized its success. These challenges include underfunding for outreach to minority communities and the colossal mismanagement and failures of the contract for hand-held computers that led to an entire replan of the Census very late in the game. Senator Coburn and I have been working on this for several years under his leadership as the Chairman of this Subcommittee and more recently under my own.

Further, I understand that the Bureau lacks plans for testing some of its key information technology systems. With such a substantial reliance on new technology, a robust testing strategy is necessary to identify and correct any problems that may arise.

I believe we are at a critical juncture. I don't think it is overstating things to say that the 2010 Census is approaching a state of emergency. Significant work still has to be done, and the Bureau does not have a Director in place to assist them in making these critical decisions. Last month, I sent a letter to President Obama urging him to nominate a new Director as soon as possible. I renewed that request as recently as this morning.

It is my hope that we have learned from these valuable lessons and can continue to work together to ensure the success of the 2010 Census.

We look forward to the expert testimony here today from our distinguished panel of witnesses.

I would just say to our colleagues, and we have been joined by Senator Coburn, who knows these issues as well or better than me—Senator Coburn said that he didn't think the people here knew who Senator McCain was so he is helping with his name tag. [Laughter.]

But, Senator Coburn, we are in a situation where we have gone from an Administration where we didn't have a Census Director in place for the longest time, we had to wait for a long time to get a nominee, finally got a nominee, a very good one, and he stayed with us for about a year and the beginning of this year he tendered his resignation letter along with a whole lot of other appointed officials. So now we are waiting until we get a good solid replacement and time is wasting.

Senator McCain, it is great to have you here.

#### **OPENING STATEMENT OF SENATOR MCCAIN**

Senator MCCAIN. Thank you very much, Mr. Chairman. I want to thank you for holding this hearing and I want to thank the witnesses for appearing here today. I again thank you and Senator Coburn, who has a great sense of humor, I am sure you will note, for your attention to this issue.

The first thing I would like to point out, I think it is pretty obvious that we need to have a Director of the Census. I am sure our witnesses will be in total agreement on that aspect of this issue.

We are nearing the time where certainly final preparations for one of the more important events are underway—I don't think people appreciate the importance of the Census. It not only means a lot to us as far as Congressional districts are concerned, but so much of our Nation's operations as far as apportionment of money for various programs, apportionment of responsibilities. So much of the things that we do, and, in fact, laws that we pass every day are implemented through the Census, guided by our knowledge, hopefully knowledge or lack of knowledge of the people we have in each State and each part of each State.

So obviously a fair and accurate counting is critical. No State should be unfairly denied representation or funding for essential services because the Census Bureau can't resolve problems that have plagued us for decades, and obviously one of those problems is undercounting. I guarantee you that whether it is totally accurate or not, there will be States that claim undercounting at the end of this process. I think our witnesses would agree with that.

And I am one of them. My home State of Arizona suffered severely from undercounting in the 1990 Census. As a result, Arizona was denied an additional Congressional seat and lost millions of dollars in Federal revenue for schools, roads, housing, and other public services.

Resolving the issue continues to spur debate and the need to make constant improvements to traditional enumeration methods remains a top priority. So the process must be fair. It has got to

be conducted in a manner that doesn't discriminate and doesn't dissuade participation.

I want to point out again that some recent activity on the part of the Census Bureau does not lend itself to increasing the confidence level. Of course, I am talking about the investment of millions of dollars in hand-held computers that can't deliver the capability that was once promised. I know our Subcommittee examined the issue, but I still feel compelled to bring this up again because it is a terrible precedent to set and does not give us confidence. So it lost taxpayers' money because of cost overruns and lost productivity. We can't afford, obviously, to waste that.

I am concerned that we have enough time, and I will be interested in hearing from our witnesses, about adequate testing of all critical systems and procedures before additional Census activities begin. I am most interested to hear from our GAO witnesses about the current status of these setbacks and how much delay this mismanagement has caused.

I want to thank you, Mr. Chairman. I want to thank our witnesses. Again, this is a very important process that this Nation is about to embark on. You mentioned people that have second homes. I also think that this is a period of great mobility in America from one place to another for economic reasons and others, including the traditional mobility of Americans. I do not know, maybe one of our witnesses knows how many people move from one State to another in the course of a year, but it is significant and on the increase.

We have an obligation to ensure that every American is counted and counted accurately and I thank you, Mr. Chairman, and I want to thank Senator Coburn for his involvement for many years in this issue. Thank you.

Senator CARPER. Thank you for your statement and thank you for joining us in this effort.

I am going to go to Senator Burris and then to Senator Coburn.

#### **OPENING STATEMENT OF SENATOR BURRIS**

Senator BURRIS. Thank you very much, Mr. Chairman.

Senator CARPER. Welcome. We are delighted that you are here.

Senator BURRIS. My pleasure. I would like to extend my warm welcome to our distinguished valued panelists. I am so pleased to see that you are carrying out your constitutional and committed responsibilities to inform us as officials.

As we approach what projections indicate will be the most expensive Census in history, we must assure that sound leadership aids its execution. It is crucial that we take action quickly to guarantee success. Constituents must trust us to spend their money wisely and we must ensure that we plan both comprehensive and responsible.

America has changed greatly in the last 10 years and I fear that some citizens may be less likely to participate in the Census. We already face significant language barriers and we now must attempt to overcome suspicion of legitimacy. With identity theft on the rise, many ordinary Americans may overlook the necessity of the Census for fear of their personal safety, so we must be very concerned about what is happening in the minds of our citizens.



Fortunately, through the knowledge of the previous experience, hard work, and development of new technology, significant opportunities now exist for us to improve the process, and I am with Senator McCain on his comments.

The undercount, we hear so much about the undercount. I live in Chicago and in a metropolitan area, we are always complaining about the fact that in those areas, we are not counted because nobody wants to go up into especially what we call the developments. Some people refer to them as projects. A lot of them have been torn down in Chicago now, but we hope to find where all those people were relocated and try to identify those people because that is where a lot of the allocations are determined.

I will have some questions later, and Mr. Chairman, I might have to run out, but I will come back with some questions later on.

Thank you, Mr. Chairman.

Senator CARPER. Senator Burris, thank you very much.

I am delighted again that my partner in this initiative and part of my good oversight is here with us, Senator Coburn. Please proceed.

#### **OPENING STATEMENT OF SENATOR COBURN**

Senator COBURN. I will just spend a short amount of time. The best recommendation I could make to the President is to bring Mr. Murdock back. He did a great job while he was there. I think it is unfortunate for us as a Nation that he left in the midst of straightening out a lot of the problems that were there. I will save all the rest of my comments for the time of which we have questioning.

Senator CARPER. All right. Thanks very much.

Let me briefly introduce our witnesses, and we will start with the Hon. Barbara Bryant. Welcome. She was Director of the Census Bureau from 1983 to 1991, and during her tenure, she directed the 1990 Decennial Census of Population and Housing, the 1992 Economic and Agricultural Census, and other major surveys. I believe you were appointed by President George Herbert Walker Bush and confirmed by the Senate as the first woman to head the Census Bureau in 200 years of Census taking. Dr. Bryant received her Bachelor's degree from Cornell University and her M.A. and Ph.D. from Michigan State University—a Spartan. Welcome today.

John Thompson, I call him the real John Thompson, is the President of the National Opinion Research Council at the University of Chicago. Mr. Thompson came to the Council after a 27-year career at the Census Bureau, where as one of the Bureau's most senior career officers he had the responsibility for all aspects of the 2000 Census, including management, operations, and methodology. Mr. Thompson attended Virginia Tech University, where he was awarded a B.S. and a Master's of Science degree in mathematics.

Next, Robert Goldenkoff, Director of Strategic Issues at GAO, where he is responsible for reviewing the 2010 Census and government-wide human capital reforms. Mr. Goldenkoff has also performed research on issues involving transportation security, human trafficking, and Federal statistical programs. He received his Bachelor's in political science and Master's in public policy from George Washington University.

Dave Powner, good to see you again. Thank you for joining us. He has over 20 years of experience in information technology issues in both the public and private sector. He is currently responsible for a large segment of GAO's information technology work, including systems development, IT investment and management, health IT, and cyber critical infrastructure protection reviews. He is no stranger to this Subcommittee. Thank you for joining us again today.

Lawrence D. Brown, Professor in the Department of Statistics at the Wharton School at the University of Pennsylvania. He is a member of the National Academy of Sciences and has served on several committees and panels of the National Research Council, including the Committee on National Statistics. Dr. Brown's work includes evaluations on the design and methodology of both the 2000 and the 2010 Census programs. He received a Bachelor of Science degree in mathematics from the California Institute of Technology and a Ph.D. in math statistics from Cornell.

And last but not least, Robert Hill, a sociologist who recently retired as Senior Researcher at Westat, a research firm in Rockville, Maryland. He was Chair of the U.S. Census Bureau Advisory Committee on the African American Population for both the 1980 and, I think, the 2000 Censuses. Dr. Hill received his Bachelor's of Art in sociology from the City College of New York and a Doctorate in sociology from Columbia University.

We would have one other person here with us today, Vincent Barabba, former Census Director during the Nixon and Carter administrations. He was scheduled to participate in our hearing today. Due to a series of unanticipated events, he is unable to join us. His testimony will be submitted for the record and the Subcommittee looks forward to working with him in the future as we continue our oversight of the 2010 Census.<sup>1</sup>

With those introductions behind us, let me just say, Ms. Bryant, we welcome you here. We are delighted that you are going to be our lead-off hitter. We will go right down the line and then we will ask questions. Thank you.

**TESTIMONY OF BARBARA EVERITT BRYANT, PH.D.,<sup>2</sup> FORMER  
DIRECTOR, U.S. CENSUS BUREAU**

Ms. BRYANT. Thank you, Chairman Carper and Acting Ranking Member McCain. You have been given my introduction statement.

Lesson one for the 2010 Census is the one that all of you have referred to, and that is the importance of getting a new Census Director in immediately. I am pleased to see you are pressing on the President to make the nomination. On this, I really speak from experience, because——

Senator CARPER. If I could interrupt, I also pressed this morning on the President's nominee for Commerce. I ran into Governor Locke yesterday and again today and I said, if you haven't started thinking about who you would like to have on the Census Bureau, start thinking about it right now.

Ms. BRYANT. Thank you very much——

<sup>1</sup>The prepared statement of Mr. Barabba appears in the Appendix on page 33.

<sup>2</sup>The prepared statement of Ms. Bryant appears in the Appendix on page 38.

Senator CARPER. I brought it to his attention.

Ms. BRYANT [continuing]. From all of us.

Twenty years ago, I became Director in the same election cycle we are in now, that is in the Presidential election in the year ending in eight and nomination in the year ending in nine. However, I was not in office until December 7, 1989, 3 weeks before the start of the Census year. I was eventually confirmed by the Senate.

Would Census procedures have been different if I had been in office sooner? Definitely, and I elaborate on this in my written testimony.

I am a supporter of making the job of Director of the Census Bureau a 5-year Presidential appointment, starting in the years one and six. The planning cycle for operations as large as the Decennial and Economic Censuses are long and only with a several-year lead time can a Director have any real input into what is going to be done. I also will say it is no fun for a Census Director to sit in front of Congressional committees like this defending operations in which he or she had no input.

Lesson two is that a major professional coordinated communications and advertising campaign is vital to Census success and accuracy. Such a campaign requires a major financial outlay. It has two components, a large volume of inexpensive promotional materials that can be handed out or posted at the local level; and radio, TV, and newspaper spots professionally produced with goals of reaching both the mass national and targeted audiences.

The advertising campaign has got to be on a scale comparable to what a private sector firm would use to introduce a new product. After all, the Census is a new product to everyone in their 20s, and is a 10-year-old, half-forgotten product for anyone 30 and over.

Lesson three is outreach to hard-to-count segments of the population. Through partnerships with geographic, ethnic, and racial organizations, we can help reduce the undercount. The Census historically has fully counted some segments of the population, particularly homeowners and older Americans. It falls short of fully counting the very mobile, the renters, the young people, and particularly those in Hispanic, Latino, African American, and American Indian communities. These hard-to-count are best reached with one-on-one contacts from local people and organizations in whom they have trust.

Communicating the fact that the Census Bureau will not give information from their Census forms to any other organization or individual is a very hard message to get across. Only trusted sources can convince the reluctant, the fearful, or the uninformed that the Census Bureau does not give information to the INS, the IRS, landlords, ex-spouses, or mothers-in-law. [Laughter.]

In addition to implementing these three lessons, three other factors will help improve the accuracy in 2010. One is the American Community Survey, which is now ongoing, and it replaces the information formerly gathered on the long form with about 50 questions that went to 17 percent of households. The long form always had a several percent lower mail return than the short form.

The second thing that is going to help is the downturn in employment. This is a national tragedy, but it does have the benefit for the Census Bureau that they are going to have a bigger pool of peo-

ple from which to choose their temporary employees. My Census, we had 5 percent unemployment and the pool had dried up to be a puddle.

And third, the undercount research done after all the recent Censuses identifies very precisely where non-respondents are geographically so they can be targeted. Such research is important to fund for every Census.

But now the big inhibitor to a good count in 2010 is the fear in the Hispanic-Latino communities. The current Immigration and Naturalization raids on such communities, on employers and neighborhoods is bound to depress cooperation. I flew in yesterday from Phoenix, Senator McCain, where I do have a second home and some households there include both legal and undocumented immigrants. You can imagine when a Census taker goes into those neighborhoods and says, "I am from the Census Bureau and I have a few questions from the Government," what a warm reception they may receive.

Finally, you asked us to comment on a cost-effective Census. Well, counting every person and household is never going to be a cheap operation, particularly with all this follow-up on the hard-to-count. But with this experience in the logistics of the operation and its magnitude, and I will add the wonderful employees, the long-term career employees at the Census Bureau, the Census Bureau probably does as cost-effective a job as any organization could. But current staff, not the Director of a \$2.6 billion Census conducted 20 years ago must report to you on present efforts to be cost effective.

Senator CARPER. Thank you very much. Mr. Thompson.

**TESTIMONY OF JOHN THOMPSON,<sup>1</sup> PRESIDENT, NATIONAL  
OPINION RESEARCH COUNCIL**

Mr. THOMPSON. Thank you, Mr. Chairman and Members of the Subcommittee. I am truly honored to be glad to speak to you about the 2010 Census. As you asked, I will talk about some of the successes in 2000 and relate them to the risks with respect to the 2010 Census.

Before I start, I would quickly like to recognize the fact that I worked with a lot of the people at the Census Bureau right now. I know that they are motivated to do high-quality work. They are nonpartisan and they are very good and my remarks are intended to help them with their effort, not in any way to criticize them.

So starting with Census 2000, I think the first factor I would mention in success, and you will hear a lot of the same things, I think, is the unprecedented support that the 2000 Census received. One example of that was that the mail response rate was 67 percent, which was higher than the 1990 Census rate of 65 percent. That was the first Census where the decline in mail response rate had been reversed.

I think there were three factors that contributed to that. The first is a paid advertising campaign. It was the first Census that used a paid advertising campaign.

<sup>1</sup>The prepared statement of Mr. Thompson appears in the Appendix on page 44.

The second was a very well-funded effort to establish partnerships with local community groups.

And the third was a very effective communications strategy that reached out to numerous stakeholders, including the Congress, State, local, and Tribal governments, and a variety of advocacy groups.

In addition, the non-response follow-up operation, the most difficult part of the Census, was finished in 9 weeks. One of the factors that contributed to that was, in my opinion, the fact that the public was highly motivated to cooperate and we didn't have to visit the households too many times. There were other factors which I will mention, too.

Another factor in the success of the Census was that we had a Director in place in time to provide leadership and guidance. That Director was Kenneth Pruitt. I had the privilege of working with him. He provided leadership, guidance, and set an environment up where the career people could be successful. I also would note that I had the pleasure of working with Dr. Bryant on the 1990 Census and that was also a fine experience.

Another factor was that we had a very strong management team in place that was very experienced and included managers with both Census experience and managers from outside of the Census Bureau that brought different perspectives to problem solving, and we had the team in place in time to make some significant contributions.

Another factor was that the Census 2000 field effort was very well funded and well managed. We had done studies that linked pay for retention and we had an excellent group of regional directors who managed the Census. We were able to recruit and retain a workforce to do the job.

We also had effective usage of private sector contractors in 2000 to provide advance technology solutions to our data capture operations. We had private sector contractors that ran some very large facilities, recruited a lot of staff, and put in place optical scanning and intelligent character recognition software that allowed us to capture over 80 percent of the handwritten entries on the Census forms with a very high degree of accuracy.

The final factor I will mention which is relevant to this Census is that we had a thorough testing of all of our operational systems. We had a dress rehearsal in 1998 where we tested our systems from start to finish. That was very important. We also, I will note, had to change the Census design. There was a controversy over Census. We were going to add two tracts, and in 1999, we decided—the Supreme Court decided that we would not use sampling for the count, so we had a redesigned Census that did not use sampling. The fact that we had our systems tested, we were able to modify them and move forward.

So for 2010, the major risk is in systems development and testing. I think the Subcommittee said that and it is fairly obvious. They had to abandon their plan to use hand-helds. They are going back to a paper-based system. They have taken over the control system from a private contractor. I think the best recommendation I can make is that they need to do a full-scale, large field test of that system to conduct a response follow-up, to collect some data,

to make sure that they have interfaces with all the key systems, and to make sure that interviewers, Census enumerators, fairly inexperienced people can utilize these systems.

I will say just a couple more things. We have talked about the Director. I agree with that.

Senator CARPER. When you say agree with it, be more specific in what you agree with, the importance of getting a good one or—

Mr. THOMPSON. I agree that we need a Director of the Census Bureau as soon as possible. Like I said, having a Director in place during the Census is just incredibly important, and in the period preceding the Census.

They need also to establish a communications lead. That needs to be appointed. They don't have one right now.

The management staff, I think they are doing a good job. They are working as hard as they can. I think they are very thin. I think they should reach out to some of the other Federal agencies to look for some more talent.

Their coverage measurement system is currently scheduled in a fashion where I am concerned that it won't produce accurate measures. It is scheduled to take place too far after Census Day and I think there will be issues with recall bias associated with it. They need to tighten the schedule up similar to previous Censuses.

And finally, Dr. Brown will talk a lot, I think, about the experimental program for the 2020 Census, but I encourage the Subcommittee to challenge the Census Bureau to develop plans for a different type of Census for 2020, one that is less expensive and relies on alternative methods of data collection.

That concludes my remarks. Thank you.

Senator CARPER. Thank you, Mr. Thompson. Mr. Goldenkoff.

**TESTIMONY OF ROBERT GOLDENKOFF,<sup>1</sup> DIRECTOR, STRATEGIC ISSUES, U.S. GOVERNMENT ACCOUNTABILITY OFFICE**

Mr. GOLDENKOFF. Chairman Carper, Ranking Member McCain, Members of the Subcommittee, thank you for the opportunity to be here today to provide a progress report on the 2010 Census. I am here with Dave Powner, a Director on GAO's Information Technology team.

As requested, in our remarks today, I will provide a broad overview of the status of key Census-taking operations and Mr. Powner will focus on the findings and recommendations contained in our report on IT testing which we are releasing today.

This afternoon's hearing is particularly timely. It was exactly one year ago today that GAO designated the 2010 Census as a high-risk area for three reasons. First, there were weaknesses in the Census Bureau's IT acquisition and contract management function. Second, there were problems with the performance of hand-held computers used to collect data. And third, the ultimate cost of the Census is uncertain, although it is currently estimated at more than \$14 billion.

At the same time, just over one year from now, it will be Census Day. Little time remains to address the challenges that have emerged thus far and make final preparations for the numerous op-

<sup>1</sup>The prepared statement of Mr. Goldenkoff appears in the Appendix on page 49.

erations that will take place throughout 2010. In short, today's hearing is a convenient waystation on the road to Census Day, a time to look back on the Census Bureau's efforts over the past year to address the operational challenges that have emerged thus far as well as to look ahead to what the Bureau needs to do in the coming months to help ensure a successful head count.

Importantly, the Bureau has made commendable progress over the past year in rolling out key components of the Census and to strengthen certain risk management efforts. Still, the Census remains high-risk because a dress rehearsal of all Census operations that was planned for 2008 was curtailed. As a result, critical activities, including some that will be used for the first time in a Census, were not tested in concert with one another or under Census-like conditions.

The bottom line is that key Census-taking activities, including those that will ultimately drive the final cost and accuracy of the count, continue to face challenges and the Bureau's overall readiness for 2010 is uncertain.

One such challenge is building the Bureau's address list. Because a complete and accurate address list is the cornerstone of a successful Census, the Bureau has a number of operations aimed at including every residence in the country and works with the U.S. Postal Service, agencies at all levels of government, as well as a number of non-governmental entities. In a few weeks, the Bureau will send thousands of workers to walk every street in the country to update the Census address list and maps in an operation called address canvassing. Census workers will use hand-held computers to collect data.

As you know, when the devices were tested, they experienced performance problems, such as freeze-ups and unreliable transmissions. The Bureau took steps to fix these issues and the results of a small-scale test held last December are encouraging. Nonetheless, more information is needed to determine the Bureau's overall readiness for address canvassing, as a field test was not an end-to-end systems evaluation, did not validate training, help desk support, and other requirements, and did not include urban areas.

Uncertainties also surround the Bureau's ability to implement operations that will be used for the first time in a decennial Census, including the targeted second mailing to reduce the non-response follow-up workload and the need to fingerprint temporary Census workers. The Bureau's readiness for these activities is uncertain because they have not been tested under Census-like conditions.

Another challenge facing the Bureau, as we have mentioned, is reducing the undercount. As with past enumerations, the Bureau is putting forth tremendous effort to reach groups that are often missed by the Census, such as minorities, renters, and people with limited English proficiency. For example, the Bureau plans to provide language assistance guides in 59 languages, an increase from 49 languages in 2000.

Although the effects of the Bureau's communication efforts are difficult to measure, the Bureau reported some positive results from its 2000 marketing efforts with respect to raising awareness

of the Census. Still, a longstanding challenge for the Bureau is converting awareness of the Census into an actual response.

Some specific hurdles that need to be overcome include the Nation's linguistic diversity and privacy concerns and a post-September 11, 2001 environment that could heighten some groups' fears of government agencies.

In summary, just 13 months remain until Census Day. At a time when major testing should be completed and there should be confidence in the functionality of key operations, the Bureau instead finds itself managing late design changes and developing testing plans. The Bureau has taken some important steps towards mitigating some of the challenges that it has faced to date, yet much remains uncertain and the risks to a successful decennial Census continue.

**TESTIMONY OF DAVID POWNER,<sup>1</sup> DIRECTOR, INFORMATION TECHNOLOGY MANAGEMENT ISSUES, U.S. GOVERNMENT ACCOUNTABILITY OFFICE**

Mr. POWNER. Chairman Carper, Ranking Member McCain, and Members of the Subcommittee, the accuracy of the 2010 Census depends in large part on the proper functioning of IT systems both individually and when integrated together.

Mr. Chairman and Dr. Coburn, your oversight of the Bureau's acquisition of IT systems was critical last year. In particular, the field data collection system is no longer spiraling out of control and that contract is \$500 million less than the initial estimates provided at your hearings last summer. Your oversight is needed once again in the technology area to ensure that between now and Census Day, these systems are rigorously tested.

Today, we are releasing our latest report completed at your request which highlights that significant testing remains. Six major systems need to complete system testing and much integration testing needs to occur. Plans for conducting this testing are not completely in place. In order to ensure effective test execution, the Bureau needs comprehensive metrics to monitor test completion and effective executive-level oversight to keep the pressure on and to manage risks.

Our report contains 10 detailed recommendations that the Bureau has agreed to address. For example, integration testing includes testing the interfaces or the handshake between systems. Our work found that not only are there not complete plans for integration testing of these interfaces, but there is not even a master list of interfaces. Not having such basic information at this stage is unacceptable and our recommendations call for the Bureau to, one, develop a master list of interfaces; two, prioritize the interfaces based on criticality and need date; and three, to use this information to develop all the needed integration test plans.

To the Bureau's credit, we are seeing more plans and better metrics, but there is still much work ahead in both areas. I would like to stress the need to prioritize. It is likely that the Bureau will not have enough time to test everything. Testing the most impor-

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<sup>1</sup>The prepared statement of Mr. Powner appears in the Appendix on page 68.



tant aspects of certain systems, interfaces, and operations is critical given the limited time remaining.

Mr. Chairman, again, thank you for your leadership and I will look forward to your questions.

Senator CARPER. Thank you very much, Mr. Powner, for you and others of your colleagues at GAO for helping Senator Coburn and I and our staffs in this effort. Thank you.

Dr. Brown, please.

**TESTIMONY OF LAWRENCE D. BROWN, PH.D.,<sup>1</sup> CHAIR, COMMITTEE ON NATIONAL STATISTICS, NATIONAL ACADEMY OF SCIENCES**

Mr. BROWN. Good afternoon, Mr. Chairman. Thank you for inviting me to talk to you this afternoon. As you noted, I am a professor of statistics at the Wharton School of Business and I have been actively interested in issues relating to the Decennial Census for over a decade.

Among other things, I have served on several other National Academy of Sciences advisory panels involving Census issues, and currently I am Chair of a panel to review the Census program of evaluations and experiments. Many of my comments this afternoon are drawn from a very recent letter report of this panel that was mailed to Thomas Mesenbourg as Acting Director of the Census Bureau.<sup>2</sup>

There are three issues I would like to bring to your attention from our panel's reports. Two of these involve research and planning that should be part of the 2010 Census and the third concern is a more immediate one about research that should be conducted before fielding the 2010 Census, and I will start with that issue.

Actually, I am the third person on this panel, as well as you, to have talked about the concern with the operating control system. As you have remarked and several others have remarked, the hand-held devices that were scheduled to be used in the non-response follow-up portion of the Census, academically termed NRFU, were withdrawn from use and that led to a considerable increase in Census costs.

But I want to focus on a different aspect of this forced change and it is really the aspect that both John Thompson and Robert Goldenkoff have also mentioned. These devices had been designated to form the core of the operating control system for NRFU. NRFU, as you noted, is a process that has over half-a-million people in the field operating out of many local offices. This army of people requires a system to keep track of it and the Census Bureau is now in the process of restructuring their entire operating control system because of the necessity of removing the hand-helds.

So because of the timing of the decision to revert from hand-held computers to paper-based NRFU, the 2008 dress rehearsal did not test NRFU at all, and this was, of course, a major gap in Census testing. Because it wasn't tested, the dress rehearsal provided no information on interaction of NRFU processes with the redesigned

<sup>1</sup>The prepared statement of Mr. Brown appears in the Appendix on page 78.

<sup>2</sup>The letter from Mr. Brown appears in the Appendix on page 82.

coverage follow-up operation and various other components of the process.

As a remedy, the Census Bureau has scheduled a number of isolated component tests, but this testing, component-wise testing strategy puts the Bureau in an extremely risky position. So I want to just reemphasize that the Bureau needs to perform as full and realistic an operational test from start to finish of this system as they can, including all of the interactions among the various components.

So the two research issues that I want to mention, and I will try and be brief in mentioning them, the first of these involves administrative records that could be used in the Census. The Census Bureau in the past two decades has conducted a research program to see whether administrative records could be used to increase the accuracy and reduce the cost of the Census. We believe that they offer the best chance of accomplishing those ends, but there are not scheduled to be any major tests of administrative records in the 2010 Census, and given that their use provides one of the few opportunities to substantially reduce Census field costs, we believe that the Census Bureau should devote serious effort and attention to including an experiment or research during the 2010 Census to see whether such records can be used in the future.

And finally, with respect to the Internet, the Internet is another opportunity for cost reduction and improvement in data quality and the Census Bureau has no plans to incorporate Internet questionnaires in 2010 or to perform research on how that would enable them to be used in 2020. So we believe that, if for no other reason than to avoid looking out of step with modern data collection and because of their problems, the Bureau should be conducting some coordinated program of Internet research using Internet devices.

I think I will close here. Thank you for the invitation to testify, and I would be happy to address any further questions.

Senator CARPER. Great. Thank you. Thank you, Dr. Brown. Dr. Hill, please.

**TESTIMONY OF ROBERT B. HILL, PH.D.,<sup>1</sup> SOCIOLOGIST AND FORMER CHAIR OF THE ADVISORY COMMITTEE ON THE AFRICAN AMERICAN POPULATION, U.S. CENSUS BUREAU**

Mr. HILL. Good afternoon, Mr. Chairman and Members of this Subcommittee. I am pleased to be invited to provide testimony on this very important subject.

My testimony will focus on a major lesson learned from prior Censuses: The importance of developing strong partnerships and community outreach strategies with hard-to-count populations in order to reduce the minority undercount in the Census.

My initial experience with Decennial Censuses goes back to 1969, when I was appointed National Director of the National Urban League's 1970 Census Project. This project was launched by Whitney Young, who was the Executive Director of the National Urban League at that time, and it was designed to reduce the black undercount in the Census. This was the first national partnership between the U.S. Census Bureau and a minority organization with

<sup>1</sup>The prepared statement of Mr. Hill appears in the Appendix on page 95.

over 100 branches throughout the country. The primary purpose of the 1970 Census Project, whose slogan was, "Make Black Count," was to educate African Americans about the importance of the Census and to encourage them to cooperate.

Our community outreach project was successful in convincing large segments of the African American community to participate in the 1970 Census. However, post-Census studies revealed that there was still a sizeable undercount of African Americans and other minorities in the 1970 Census. We believe that a major reason for the historic undercount of minority groups was the failure of the Census Bureau to adequately involve minority representatives in the advance planning and implementation of Decennial Censuses.

Therefore, in his testimony to the House Census Oversight Committee in September 1970, Whitney Young recommended that the Census Bureau establish ongoing minority advisory committees to improve its strategies for reducing the undercount. Indeed, in 1975 under the visionary leadership of Vincent Barabba as the Census Bureau Director, the first Race and Ethnic Advisory Committees, which are also called REACs, were formed to assist the Bureau in planning for the 1980 Census. The initial REACs comprised four minority groups: African Americans, American Indians, Hispanics, and Asians. For the 2000 Census, a fifth group was added, Native Hawaiians and Pacific Islanders.

I served as Chair of the African American Committee in the planning for the 1980 Census, was reappointed for the 2000 Census, and was involved in the initial planning for the 2010 Census. Over the years, the Bureau has improved its methods for enumerating the African American population and for reducing the undercount among minorities. While there is still a differential undercount, its size has steadily declined.

For example, while the Bureau estimated that it missed about 1.5 million, or 8 percent, of the black population in 1970, it failed to count about 1 million, or 1.8 percent of them, in the 2000 Census. But the group with the highest undercount rates in Decennial Census, regardless of race or ethnicity, are children under 18.

One of the most effective strategies the Bureau has used to reduce the minority undercount is to develop strong partnerships with minority groups in all phases of Census planning and to conduct aggressive education and outreach campaigns in hard-to-count communities. Based on my experience with prior Censuses, I would like to offer some recommendations.

First, I think it is very important that Congress provides the Census Bureau with adequate resources to undertake the mammoth task of achieving a fair and accurate count. President Obama and Members of Congress should be congratulated for including an additional \$1 billion in the President's stimulus bill to enhance the Bureau's enumeration activities in 2010. I was especially pleased that the bill stipulates that the Bureau can spend up to \$250 million for its partnership program and outreach efforts to minority communities and hard-to-reach populations.

Second, because of its comprehensive scope, the 2010 Census will directly stimulate this economy by hiring over half a million Census takers across the Nation. It is essential that there is an eth-

nically and racially diverse workforce, from the staff in the district offices to the enumerators in the neighborhoods and barrios. Members of hard-to-count populations should be adequately represented at all levels of Census hires, especially among the new partnership specialists.

Third, one of the remarkable successes of the 2000 Census was the use of paid advertising to communicate messages about the importance of the Census to all groups. The fact that minority-owned advertising firms were extensively used to reach their respective groups played a large part in reducing the undercount in minority communities in the 2000 Census.

Fourth and finally, the Bureau should permit members of its five Race and Ethnic Advisory Committees to play a more prominent role in implementing the 2010 Census, such as recommending partnership specialists and minority advertising firms, distributing foreign language Census forms, and identifying local sites for training Census workers and for serving as assistance centers to aid the elderly and other individuals to fill out their forms.

These are a few suggestions I have to offer to ensure that the 2010 Census will be one of the most accurate and equitable enumerations in our history. Thank you for this opportunity.

Senator CARPER. Dr. Hill, those were great recommendations.

I was asked in a media interview earlier today why we are having this hearing. One of the things, we have a responsibility to do is oversight. Dr. Coburn has tried very hard, both as the Chairman of the Subcommittee and as Ranking Member of this Subcommittee joined by me, to ensure we meet our responsibility for oversight. I replied to the reporter who asked me the question, "What do you hope to accomplish from your hearing today," and what I hope to accomplish is, one, I would like to ask each of you to send me two names by close of business tomorrow of somebody that you think would be an excellent Director of the Bureau of the Census. By close of business tomorrow, give us two names of people you think are well equipped to do this job. I hope the Administration has somebody that they are vetting, that they are close to submitting, but just in case they don't, I want to make sure that we can give them a bigger talent pool to draw from.

At least one of you said in your comments earlier today, talking about sort of a silver lining, high unemployment times right now. Well, the silver lining in that is that there is a great pool of talent from which to draw to work in the Census, whether enumerators or others, that will help reduce, I think, the mistakes that are made as we count people. So that is a potential for something good happening.

But give us a couple of good names, each one of you, if you would, by close of business tomorrow. Thank you very much.

The other thing I mentioned in response to the reporter's question today, I said I want to make sure that when that new Director of the Bureau of the Census is identified, vetted, nominated, confirmed, goes to work, that he or she have a pretty good to-do list that we have provided to him or her from some people who have been there and done this, not just once, in some cases twice and three times. We want to make sure that this Subcommittee is better equipped to do our job for oversight.

Dr. Hill was good enough to give us four recommendations. Would you just run through those again real quickly, and then what I am going to do is ask the panel to react to those recommendations very briefly and to say if there are some that you would like to add to that. I think you have in your individual testimony. But beyond making sure we get an excellent Director on board soon, in place, just give us those four recommendations again, Dr. Hill.

Mr. HILL. Essentially, the first was that the Bureau has adequate financial resources to conduct the Census.

Senator CARPER. And I think you said we seem to have done that.

Mr. HILL. That is right.

Senator CARPER. Good.

Mr. HILL. Second is that they should hire a workforce that is ethnically and racially diverse and represents the hard-to-count and minority community populations.

The third was that we should use the paid advertising as was done in 2000, but also use minority-owned firms that can effectively target their messages to various hard-to-reach groups.

And the fourth was to permit the members of the REAC Committees to play a more prominent role in implementing the 2010 Census.

Senator CARPER. OK. Talk about that last one again just a little bit more, please.

Mr. HILL. These Race and Ethnic Advisory Committees are really very important, because they have members who come from diverse minority communities and work very well together. For example, we supported the recommendations of American Indians, and Hispanics and vice versa. They are also strong advocates for their local communities.

One of the most effective ways of reducing the Census undercount is to have messages that are communicated by people who are trusted at the local level. That is the main ingredient—that local people are used who come in contact with others at their level, not at a higher level, and who can communicate the message to them. We have found this strategy to work every single time. These representatives can be very effective in many ways, such as distributing foreign language Census forms and helping people to complete their forms at assistance centers.

All of these activities are important for reducing the non-response follow-up. High response rates to mailed questionnaires will reduce the extent to which non-response follow-ups—which are the most tedious part of Decennial Censuses—are needed.

Senator CARPER. I think one of you, I don't know if it was Mr. Thompson, but one of you testified that the non-response, I think we had more people responding, was it in 2000 than in 1990, by 2 percent? It actually went up, the number of respondents went up, I think you said it was 65 to 67 percent. Good.

Others on the panel, if anybody would like to say that you think Dr. Hill has some good ideas, if you do, that is fine. Say that. If you think there are some other ideas on it, some of you made recommendations that were similar, others different, but I would love to hear your ideas. Let us start with you, Ms. Bryant.

Ms. BRYANT. I agree completely on the paid advertising.

Senator CARPER. I think you mentioned that.

Ms. BRYANT. We did not have it in 1990. The Bureau went one Census too long, and I am sure Mr. Thompson will agree with me, on depending on Public Service Announcements. The TV and radio stations were no longer required for their FCC licenses to give you around-the-clock, so we had some wonderful advertisements, including using four minority advertising firms, but they were playing at 3 o'clock in the morning. And so going to the paid advertising, which was a recommendation after our Census, I think made an enormous difference. And, of course, I am very attuned to Census things, but I just heard them everywhere. It was a really big campaign and I know it cost a lot of money, but you have got to pay for that.

Senator CARPER. Some of you remember the battle between the States and the tobacco industry a decade or so ago when the States attorneys general sought to extract a fair amount of money from the tobacco industry and a lot of that actually went into a foundation called the American Legacy Foundation, whose job it was to try to transmit to young people in this country the message not to smoke, not to get started, and if you are, stop.

I was the founding vice chairman of that as governor at the time and we decided we would do a paid ad campaign. We decided it wouldn't be ads that guys like me would develop, but we would find really younger, hip ad agencies who could connect with young people, and they ended up putting their messages on TV shows that I never watched, but my sons later did. A lot of young people did, music stations, radio stations and so forth, the Internet, in ways they are just a lot smarter to connect that. It sounds like that is what we need to do here today.

Ms. BRYANT. Well, similarly with the African American other group agencies, they know the media their people watch. They did a great job in our Census of producing ads that just—they weren't given enough air time because we didn't pay for it.

Senator CARPER. Good. All right. Mr. Thompson.

Mr. THOMPSON. Well, I agree with Dr. Hill. I would, as a footnote, note that the reason that we had such an active partnership program in addition to the paid advertising in 2000 was the education that the Racial and Ethnic Advisory Committees provided to us on the importance of reaching out at the grassroots level to instill participation.

I would, however, add a little bit to his recommendations. I think the most important recommendation I made, and I will restate it, is that there needs to be a thorough, extensive field test of all the systems involved in their non-response follow-up operation. That operation is the key to a good Census.

Senator CARPER. OK. Good. I think a couple of other witnesses have said the same thing.

Maybe one more, Mr. Goldenkoff, and then I will yield to Dr. Coburn.

Mr. GOLDENKOFF. Sure. I think that everything that has been said thus far is consistent with what GAO has said in the past, but I would like to put a couple of other things out on the table.

Senator CARPER. Please.

Mr. GOLDENKOFF. Leadership. In addition to the timely appointment of a Census Director, what should that Census Director do when he or she gets in office? One, I think it is fairly important that the Census Director regularly reach out to key House and Senate committees. Transparency is key. It helps ensure that the Census is on track. It builds that confidence that we talked about earlier. It is so important, especially when you have an operation that is going to cost between \$14 and \$15 billion. The Director also needs to embrace oversight. Transparency is very critical because that also instills a comfort level.

Operationally, risk and cost management are essential. We need to ensure that the IT systems are fully tested. That, we have spoken at length about. The Bureau also needs to set priorities.

And I would also like to put a slightly different take on some of the outreach and promotion activities as well. We agree with the partnership specialists and need for partnerships in general. A Census is inherently local. But I also think the Bureau should consider other ways of using partners for other types of operations. For example, in the 2000 Census, the partner—I forget which locality it was, but the locality actually enlisted the help of their trash collectors because they cover the streets every single day and the locality trained them to look for hidden housing units. So that was a case where they used another local group, part of the government was enlisted to help in an address-building operation.

Building a blog. Maybe the Census Director could consider putting a blog up there to deal with snafus that might come up or provide regular progress on the Census on a daily basis. But again, part of just a different take on the outreach.

Senator CARPER. That is a great list. Let me yield to Dr. Coburn. Thank you all for your responses.

Senator COBURN. Well, thank you for your testimony. Mr. Thompson, I am not wanting to put you on the spot so I am going to ask this question where you don't have to answer it directly and then I will talk to you later. [Laughter.]

One of the eight things you said you all did in 2000, number seven was that you had a strong management team in place. Are you in a position now where you could assess whether or not there is a strong management team? I am not asking whether there is or not. I am just saying, are you in the position now where you could make that assessment of what you see at the Census Bureau now, since you are working with them so closely?

Mr. THOMPSON. I believe that I could provide an assessment.

Senator COBURN. OK. I will let you off with that. I don't want to put you on the spot.

Mr. Goldenkoff, you talked about risk management systems that need to be in place, and I have not seen your report yet, so I am operating at a deficit if it is out there. My staff has seen it and I didn't get a chance to thoroughly prep for this hearing. Have you all specifically listed those areas where they do not have now and need to have—

Mr. GOLDENKOFF. I will turn it over to Mr. Powner. We did make 10 recommendations in the report that we issued today.

Senator COBURN. Yes, but it is just 10 and it is in the report.

Mr. POWNER. Yes. It is very detailed, Dr. Coburn. There are six systems that need to be tested—

Senator COBURN. I have got that down—

Mr. POWNER [continuing]. There are 44 operations—

Senator COBURN [continuing]. And the integration—

Mr. POWNER [continuing]. And there are about 250 interfaces that need to be prioritized. At one time, they said they were going to designate a test director. We have someone who is working in that position part-time. We address that in the report. We have a recommendation for a dedicated test director. And then clearly we need metrics in place to really monitor this going forward because there is a lot to get done here.

Senator COBURN. OK. And in your report, you are recommending that they have to list the areas of interfaces and then test them?

Mr. POWNER. Yes, absolutely.

Senator COBURN. You make that absolute recommendation. They see it, and they know it is there.

Mr. POWNER. Absolutely.

Senator COBURN. So in your opinion, if they follow your recommendations, both in terms of management, technical achievements, risk intervention, preparation for risk failure, testing, should they be able to accomplish what they need to accomplish for the 2010 Census?

Mr. POWNER. From a systems point of view, I think it is still highly likely they won't be able to test everything completely.

Senator COBURN. Before they go into the field?

Mr. POWNER. Correct.

Senator COBURN. How about while they are going into the field? In other words—

Mr. POWNER. You could continue, sure. You can continue while you are live, and frankly, that is what happens. I mean, when something goes wrong, you have bugs and you fix them on the fly, right?

Senator COBURN. Right.

Mr. POWNER. But clearly, that is why the need here is to really prioritize. I mean, there is systems, the integration and the operations. One of the most important operations we heard, NRFU with the operational control system, that all needs to be tested collectively. That is clearly one of the key operations. But there are also others. So prioritization and really having these plans in place.

But I think it is likely they won't get to some of them. That is why we want to see that prioritization.

Senator COBURN. I had a conversation with a CEO of a firm, not this particular firm, that makes one of these. He said, in 3 months, they could have put together a package that you could use for NRFU to do everything they want and transmit. They never were asked. Never were asked, not once. They didn't ever go to anything outside the contract they had. Even once they got in trouble, they never went to look, is there a way where we can still solve this, save money, have collection of data, transmit it. It was never asked.

Even if we get a new Census Director, we have 20th Century thinking, in my estimation, at the Census Bureau, not 21st. The resistance to online, as Dr. Brown talked about, I mean, I have



been fighting this for 4 years, ever since they abandoned the Lockheed contract. Sorry, we are just not going to do it.

And so I have great worries. The number one worry, this isn't going to cost \$14.8 billion. It is going to cost \$18 to \$19 billion. You wait and see. There will be another \$3 or \$4 billion in an omnibus bill, emergency bill for the Census because, oh my gosh, we can't get it done. And part of the bureaucracy is don't ask for everything you need now because if you ask it under emergency for a Census, you are backing up against the window and you are going to get it. So it is going to cost—is it \$9.3 billion, is what the 2000 Census cost in today's dollars, and we are going to be at least double that.

Mr. Hill, tell me how we do—I understand the organization of the African American community. It is very well organized in a lot of these. How do I do it for Native Americans in Oklahoma? Tribal, yes, where we have reservations, it is much easier because we have an isolated group. But in States like Oklahoma and Tennessee and some of these other States that have large tribal populations but they are not reservation-based, do you have any ideas on how that outreach can be best accomplished?

Mr. HILL. You are right about the greater difficulty of reaching non-reservation American Indians. There needs to be more aggressive outreach and targeting of community groups who work closely with Native Americans who do not live on reservations. The current approach appears to be fragmented and not reaching the grassroots groups. There is an urgent need to more effectively target community groups and tribes who work closely with American Indians not living on reservations. This strategy can work if strong local partnerships are developed with such indigenous groups.

When I talk about a more prominent role for members of the Race and Ethnic Advisory Committees, there are many things that can be done by working from the bottom up. This community-based approach is especially needed for minorities who speak foreign languages.

Senator COBURN. In other words, it is important to ask the question, will you come help us?

Mr. HILL. That is right.

Senator COBURN. Now tell us how.

Mr. HILL. As I said before, strong partnerships can markedly improve outreach to the various minority groups, even among American Indians who do not live on reservations.

Senator COBURN. OK. I am almost out of time. Mr. Brown, there was imputation used in the last Census. Would you comment on that, whether or not it resulted in overcount or undercount for where it was utilized, in your estimation, and whether or not that is an appropriate thing to do in this Census.

Mr. BROWN. I think imputation is essential in any Census. There are many situations in the field where the enumerators cannot talk directly to the resident of the household, and yet they know it is occupied. So one way or another, the data has to be included, from neighbors—that is part of my emphasis on administrative records, is that those provide potentially a much better method for filling in data in households you know are occupied.

Senator COBURN. Do you know whether or not that would comply with the Supreme Court ruling?

Mr. BROWN. No, and I am not a legal expert—

Senator COBURN. OK. Does anybody on the panel know whether that would comply with the Supreme Court ruling?

Mr. GOLDENKOFF. I believe it does. I don't think there was a court decision that disputed it.

Mr. THOMPSON. I believe there was—Utah raised a lawsuit about the use of imputation. It did go to the Supreme Court, and I believe that it was found to be acceptable.

Senator COBURN. OK. Thank you. Please continue. I am sorry to interrupt you.

Mr. BROWN. So I do think imputation is essential. It needs to be done carefully. As a statistician, I think that statisticians could suggest a lot of improvements in the current imputation methodology. Much of the duplication that Mr. Carper mentioned is related to imputation processes, and so there is plenty of room to improve on this product, but I think it is needed in some form or other.

Senator COBURN. Thank you.

Mr. Chairman, you have been very generous with time. Thank you for holding this hearing. I would make one comment before I have to leave. I think it is real important that your Subcommittee, even if we don't—

Senator CARPER. I would say, our Subcommittee. We used to call it our Subcommittee.

Senator COBURN [continuing]. Our Subcommittee, even if we don't have a Census Director named, whoever is acting and whoever is along before your committee on the basis of the recommendations of the GAO and also what we heard here today and see where the planning is ongoing.

Senator CARPER. Good. I think that is a very good recommendation.

All right. Senator Burriss.

Senator BURRIS. Thank you, Mr. Chairman.

Senator Coburn, your last statement was where is the Acting Director, would be my question, and we should certainly have that Acting Director here, Mr. Chairman.

Second, Mr. Chairman, I would also give you a name of a person who can move in that direction in terms of running this operation because right now, evidently from what I hear from GAO, they are really behind the eight-ball in terms of what direction will come in order to get this off the ground in a timely fashion.

But I am concerned with Dr. Hill's testimony in terms of participation of minority groups, and since the Acting Director and you all are not really from the Census Bureau, it wouldn't do any good to say that what Dr. Hill is saying is what is needed to make sure that we don't get an undercount. We need them involved, every group involved in every level of the Census steps, from the planning and the implementation, so that we can make sure that the Indians are counted, the Asians are counted, the Hispanics are counted, even the Appalachians are counted. We need to have everyone counted and my assessment of that is that there is a way of doing it and we ought to make sure that we also use minority contractors in order to reach those individuals. When all those monies are going to be spent, some of those dollars are going to

have to be given to the advertisers and marketing people and their various groups.

So any comments on that? Ms. Bryant, you ran that.

Ms. BRYANT. Well, I think our Census was the first one—Vince Barabba is not here to argue with me—that did use minority advertising contractors to produce the spots. As I say, we did not have paid advertising, but they produced very excellent spots that were—

Senator BURRIS. They just didn't have time to run during the regular—

Ms. BRYANT. Well, they ran, but they ran at 3 o'clock in the morning.

Senator BURRIS. Yes, I heard you say that.

Pardon me. Dr. Hill, do you want to comment on that?

Mr. HILL. Yes. In the 2000 Census, we used paid advertising for the first time and it was very effective because the REAC Committees recommended a number of these firms. Each of the minority firms targeted specially-prepared messages to their respective groups. For example, the African American ad firm not only targeted messages to African Americans, but also to black immigrants from the Caribbean and Continental Africa, such as Haitians, Nigerians, Jamaicans, Trinidadians, etc. Thus, numerous focus groups were held with black non-immigrants and immigrants to develop culturally-sensitive messages.

Senator BURRIS. Sure.

Mr. HILL. The 2000 Census demonstrated that paid advertising works, since minority subcontractors targeted specially-developed messages for their groups. Paid advertising can be even more effective in the 2010 Census.

Senator BURRIS. Are you still involved with the Census—

Mr. HILL. No, I am not currently a member of the African American Advisory Committee. I cycled off a few years ago.

Senator BURRIS. Who is replacing you in terms—is there a Dr. Hill in the Census Bureau? [Laughter.]

Mr. HILL. I am not familiar with the current members of the African American Advisory Committee. But those members usually span a cross-section of persons who represent many sectors, such as ministers, community-based groups, grassroots leaders, etc.

Senator BURRIS. OK. Then, Mr. Powers, while technology has led to ambitious steps to administer the Census, are there any new ways we can employ to combat undercounting typically underrepresented—any technology. Is there any technological emphasis that we could use?

Mr. POWNER. Well, I think clearly if you could have used the hand-holds for the non-response follow-up, I mean, any use of technology for going after the folks via non-response follow-up, there is potential there. We are back to paper-based operations there. So that is one area that you could potentially use—

Senator BURRIS. Well, Senator Coburn just raised his cell phone and said that technology could be used. Is there some kind of way we can get that information to the Acting Director so that they can start looking at what technology would be there available for—

Mr. POWNER. What happened there, there was a plan to use that and then that contract ran into many problems that Chairman Carper looked at in great detail.

Senator BURRIS. Oh, OK.

Mr. POWNER. And what we did is reverted back to things they knew how to do with paper. But going forward, I think that is a very valid point, is we need to look at using technology—

Senator BURRIS. So can we look at that now? We have about 18 months, you said, isn't it? No, 12 months—

Mr. POWNER. I think now from a risk mitigation point of view, you probably want to stay the course, but you want to look at that for 2020. We mentioned the Internet. We mentioned using handhelds for more operations. I mean, we need to start thinking ahead for that. But right now, we are kind of in emergency management mode and I am not certain we would want to introduce that.

Senator BURRIS. I mentioned the fact, too, that people might be afraid of their identity being stolen. Is there any technology that would try to ensure that when they give this information, it would say that it won't be given to the Social Security Administration or the IRS? Individuals are going to be a little skeptical now that their identity could be swiped so easily. So is there any technology that we are looking at to protect that?

Mr. POWNER. Well, clearly, I think there are human processes you want to have in place to protect identity theft. But from an information security point of view, all these systems need to be accredited and certified as secure to help avoid that situation.

Senator BURRIS. Thank you very much. Thank you, Mr. Chairman. I appreciate it.

Senator CARPER. Thank you, Senator Burris.

At least one of our witnesses mentioned the importance of having a set term, maybe 5 years, for a Census Director, and I could think of arguments for doing that and I could think of arguments not to do that, but I would appreciate each of our witnesses saying whether or not you think that is a good idea. I think our Commissioner for the IRS, as I recall, now serves a 5-year term. We have some other positions where people serve terms, not uncommonly a 5-year term. The idea is to overlap from one Presidential term into the other to carry over. What do you all like about that idea, or on balance, what do you think you don't like?

Ms. BRYANT. Well, since I am the one that brought it up—

Senator CARPER. I thought you did.

Ms. BRYANT [continuing]. The problem is the 10-year cycle of the Decennial Census and the 5-year cycle of the Economic Censuses is just out of tune with a 4-year cycle for the current appointment. As I say, I am the worst example since I got into office 3 weeks before the Census.

Senator CARPER. I hope you were a quick study. I bet you were. You needed to be.

Ms. BRYANT. I sure worked hard at it, with the help of John Thompson, I might say. He was my tutor on some of the statistical parts.

Senator CARPER. All right. Thank you.

Mr. Thompson, having tutored Ms. Bryant at an earlier stage in your life, what do you think of her idea?

Mr. THOMPSON. She is being very kind about who tutored who. I think that it is a very good idea to have a term appointment for the Director of the Census Bureau. It is very unsettling when you have one Director leave and another Director come in. There is a period where you don't have leadership, and understanding exactly when that will happen and having a term, I think is very good.

Senator CARPER. Any downside?

Mr. THOMPSON. I don't see any downside.

Senator CARPER. All right.

Ms. BRYANT. I will interject that this is being supported now by all seven past living Directors.

Senator CARPER. All right.

Ms. BRYANT. So bitter experience has told us this would be a good idea.

Senator CARPER. Thank you.

Mr. Goldenkoff, do you have any thoughts?

Mr. GOLDENKOFF. It has the potential to provide that continuity that is so important. As we have said, the Census cycle, it is at least a 10-year cycle, so you need someone who is not really going to be a temporary employee, someone who is in and out. And I am not even sure of all the past Census Directors how many of them served as long as 4 years. If so, it is relatively rare. And so you need someone, certainly someone in place who has that continuity and has longer-term vision.

Senator CARPER. Thank you. Any downsides you can think of?

Mr. GOLDENKOFF. Well, to the extent that—I am thinking about the legislation that has been proposed to make the Census Bureau an independent agency, of which that is a provision. It doesn't necessarily follow that having a 5-year term of office would make the Census Bureau independent. I mean, there are other factors in play, and even those agencies that have a fixed term of office, they are just as susceptible to political influence, partisan influence, as agencies with a tenure that follows the President's. So it is also a function of the personality of the Director, so—it is not a panacea, is my point.

Senator CARPER. In the Department of Treasury, we have the Commissioner of the IRS, so you have a good point.

Ms. BRYANT. And Director of the Bureau of Labor Statistics, the other big statistical agency.

Senator CARPER. There you go. But I think maybe in each of those instances, certainly in IRS, the Department of Treasury, you have a Commissioner serving a 5-year term and the head of the Department is a political appointee who may not be there for 5 years.

Mr. Powner, any thoughts on this?

Mr. POWNER. Yes. I think the continuity of the leadership is key and would be very supportive of that. We do a lot of work for you, Mr. Chairman, looking at the management of the IT budget, \$70 billion spent across all Federal agencies. This has been looked at with Federal CIOs. So if you are a political appointee, CIO, your average tenure is less than 2 years. If you are career, it is slightly over 2 years, but still less than 3 years. And I think it has been well accepted in that that 4 to 5 years would be much better to

have the continuity from a technology point of view and I think it applies here, also.

Senator CARPER. Good. Thank you. Dr. Brown.

Mr. BROWN. So let me remark on that from my perspective. Continuity of leadership is really very important and I think you mentioned, or maybe Mr. Coburn, the fact that in many respects, the Census Bureau is a 20th Century vehicle operating in the 21st Century. I think part of the problem has to do with the lack of continuity in leadership, both at the top of the Bureau and a little bit further down in terms of research and development.

Senator CARPER. Thank you. Dr. Hill, any thoughts on this idea of a 5-year term for the Director?

Mr. HILL. I support it. Most critical decisions for the Census occur between 3 to 5 years before that Census. I think a 5-year term is in a good direction, and anything that would make it as nonpartisan as possible is preferred.

Senator CARPER. OK. How about the idea that the Director of the Census should report directly to the President? I think that is in some legislation that the House is considering. And we have had it in—this Subcommittee is part of the Committee on Homeland Security and Governmental Affairs. Part of our jurisdiction is FEMA, and there has been a lot of discussion since Hurricane Katrina that the head of FEMA should report directly to, not to the Secretary of Homeland Security, but should report directly to the President, and that is a debate that is probably still going on in some circles. So it is not an argument that we hear just in the instance of the Census Bureau.

But do we need to have, in your judgment, a situation where the head of the Census reports to the President as opposed to the Secretary of Commerce?

Ms. BRYANT. Well, having the Census Bureau as an independent agency, as the National Science Foundation is, for example, another apolitical type of organization, would remove two layers of bureaucracy that the Census Director or anybody at the Census Bureau has to go through in order to talk to you in Congress, to talk to the press, and I am one for flattening organizations.

Senator CARPER. Mr. Thompson, do you have any thoughts?

Mr. THOMPSON. I really don't have an opinion on that.

Senator CARPER. Fair enough. Mr. Goldenkoff, any thoughts?

Mr. GOLDENKOFF. I think there would need to be some safeguards in place, with the Census, it is important to have impartial data, and so anything, even the appearance that there was some type of political influence going on could really undermine the credibility of Census data. So I think that you would want some type of White House oversight or a connection there. It should be on the management and operations, but it should stop at anything that has to do with the science of taking the Census. So it is just finding that right balance and having the appropriate safeguards in place and I think that is really what is critical.

Senator CARPER. All right. Thank you. Mr. Powner, any thoughts?

Mr. POWNER. I think you could be effective with either scenario. I think what is most important, though, is to get the right leader-

ship and the right management processes in place, and that has been the primary issue with the Census Bureau.

Senator CARPER. Thank you. Dr. Brown.

Mr. BROWN. I have really no thoughts about this.

Senator CARPER. OK. Dr. Hill, any thoughts?

Mr. HILL. I agree with Mr. Goldenkoff that more balance is needed. I am not certain whether it should be separate or part of the Commerce Department. I just think that, however it is structured, it should have the freedom to make independent programmatic decisions.

Senator CARPER. All right. We have operated in the time I have been here in preparing for the upcoming Census where a Secretary of Commerce oversees his empire, which includes the Census Bureau, and there was a time when we realized, sitting in this room, the Secretary of Commerce wasn't very mindful of those responsibilities, his oversight responsibilities in terms of providing directional leadership for the Bureau of the Census.

Once we got his attention and once he focused on that responsibility, he was a great asset, going to the Administration, OMB, the President, and saying, we need extra resources, and some of you, I think Dr. Hill and others, said one of the primary recommendations you have is make sure we have the right resources to go out and do the job well. Once Secretary Gutierrez, to his credit, realized we had a problem here, he got engaged and helped us move that and worked with the appropriators to make sure we had the resources that were believed to be necessary. So it actually can be helpful in that regard.

Ms. BRYANT. Well, when I talk about we are removing two levels of bureaucracy, that also means between the Census Bureau and the OMB, so another place.

Senator CARPER. All right. Thank you.

Others have sort of talked around this question and I just want to come back to it one more time. I think in Senator Burris's questioning, he was asking Mr. Powner or Mr. Goldenkoff about actually acting now to better ensure that the technology that Dr. Coburn believes is available, that we actually put it to use now to get a better outcome for 2010. I think your response was, well, right now, let us just do what we said we were going to do and do that well, implement that well, test out the systems that still need to be tested out rather than starting anew.

Any advice for us as we go through the next year or two doing well, counting well, accurately, and in a cost-effective way the people who live in this country, but is there anything that we ought to be mindful of doing to better ensure that when we get to 2020, we are not doing a Census that is at least part pencil and paper again?

Mr. GOLDENKOFF. I would agree with some of the comments that were made earlier. If you look at the way the Census is being conducted today, with the exception of some improvements in technology, it is basically the same approach that has been used since 1970. We talked about there were some changes in advertising, but essentially it is a mail-out, mail-back operation and that approach has really exhausted its potential to count the Nation cost effec-

tively. The Bureau has to spend more money, work harder to get essentially the same result.

So I think that we really need to look at what other approaches are out there that can either get better results or at least control the costs better, and whether that is administrative records or new uses of technology, maybe some of the rules of the Census need to be reexamined given changes in society. Does it make sense to knock on a door six times during non-response follow-up? You have reached the point of diminishing returns on that. All these things probably need to be on the table and should be reexamined.

Senator CARPER. All right. Any other thoughts on this?

Ms. BRYANT. Well, I think a lot of people would respond on the Internet and we wouldn't have to do all this mail-out, mail-back, so forth and so on. However, I am not sure that will help on reducing undercount because there is a skew on who uses the Internet.

Mr. BROWN. That is true. There is at least one aspect that has been mentioned to us where it could be quite helpful because if you have Internet response option, it is easy to incorporate Hispanic, Spanish and other foreign languages—

Ms. BRYANT. Languages, yes.

Mr. BROWN [continuing]. And it also can be easier for proxies to help people fill out and respond. So there are ways in which the Internet can help, although the primary target population is probably—it is probably more an issue of cost saving than response improvement.

Senator CARPER. OK. All right. Thank you.

Given the cost of the Census in an era of unprecedented fiscal challenges, what are the cost drivers of the Census and how can the Bureau produce an accurate yet cost-effective Census? Anyone at all?

Ms. BRYANT. Well, unfortunately, cost cutting was precluded by that Supreme Court decision because the most expensive thing is going after the non-respondents. The design of 2000 included sampling the non-respondents and estimating the rest and that got shot down by the Congress sending up a bill to the Supreme Court that the Supreme Court supported.

Senator CARPER. Well, it sounds to me like part of what you all have said, a number of you said, one, make sure that—the key here is to try to reduce the number of people that aren't responding. A good ad campaign properly conceived and implemented, I think can help on that. The idea of these partnerships that we talked about earlier and making sure that if we are interested especially and we have low response rates from, we will say, African Americans, from Latino Americans, from Native Americans, to make sure that we are involving, I think as Dr. Hill said, make sure that we are involving folks maybe who do public relations campaigns, public outreach campaigns, to make sure that we have included in folks who are formulating those campaigns folks whose background is maybe similar to those ethnic groups.

Mr. GOLDENKOFF. I think one—I would like to add to that a little bit, though. We know what some of the major cost drivers are, non-response follow-up probably being the largest cost driver. One of the things that the Bureau has—can do a better job of is identifying where it gets the most bang for the buck. It has a number



of repetitive operations, and it is probably a good thing to have some redundancy in addressing building operations. However, in 2000, I think there were about a dozen different operations to build the address list. Well, do you need all of them?

I think what the Bureau has not really done a good job of is identifying where it gets the most results from, and that is true with the way it builds the address list, advertising, where does it get the most bang for the buck in terms of advertising. Is it paid advertising or is it through very locally-targeted partnership efforts? So maybe that is something the Bureau should be thinking about now, is how to evaluate, working on evaluation so that come 2020, they will have a better idea of where to invest their resources.

Senator CARPER. That is a very good point.

Any other thoughts on this question? All right.

I have two more, two more to go. In April, like next month, the Bureau is scheduled to begin its address canvassing. That is an operation that in total requires some 140,000 temporary workers who rely on hand-held computers to verify addresses and map information to update the Bureau's master address file and digital maps. And this maybe should be as much a question for our friends from GAO as not, but are you confident that the hand-helds will perform as expected?

Mr. GOLDENKOFF. I think that we have more confidence than we did last summer. The Bureau conducted an operational field test back in December. It was in Fayetteville, North Carolina. And certainly some of the problems and issues with the data transmission, the unreliability, did not recur in Fayetteville. But what the Bureau demonstrated by that in a large degree was that under conditions similar to Fayetteville, the hand-helds will work.

Obviously, the country is very different in respects from Fayetteville. There are urban areas. There are suburban areas. And that is the big unknown right now. And so they have made progress, and I think that is commendable from where they were back in the summer, but overall success is still an open question.

Senator CARPER. All right. Anybody else on this one?

All right. The Administration's fiscal year 2010 budget doesn't propose increasing recruitment and hiring of Census takers for non-response follow-up as Congress envisioned in approving extra funds for the Census in the stimulus package. One of you mentioned, I think, \$1 billion was added in the stimulus package for this purpose. Would the Census Bureau be better able to meet the challenge of lower-than-projected mail response if it could recruit and hire additional field staff heading into peak Census operations in 2010?

Mr. HILL. Yes. We keep coming back to the non-response follow-up. One of the biggest obstacles to an accurate Census count is the high turnover of enumerators. However, the depressed economy should result in an influx of Census workers and greater stability and continuity. A major priority of the 2010 Census should be to increase the continuity of Census takers and to reduce the historic high turnover rates, especially in inner-city areas.

Senator CARPER. Yes, sir?

Mr. THOMPSON. I think this would be a really good question to ask the Census Bureau for the following reasons. They do have

plans in terms of they understand how many people they have to recruit, how many they have to hire. They understand pay rates. But it would be good if they would come before you and explain their assumptions and rationale so that you would feel comfortable that they have thought through the process or the numbers that they have and what they have budgeted for the recruiting and hiring. In 2000, we had enough funding from the Congress that we were able to put that operation together.

Senator CARPER. All right. One last thing. Do you all have anything you would like to add? We had, I think, a very good discussion here. Anything that comes to mind that you say, oh, I wish I had said this? Usually, when I walk out of here, I think, boy, I wish I had said that or asked something else. Anything you all want to add as take-away? No? OK.

A couple of thoughts. Let me just kind of wrap up what I think I have heard here. One is everybody says we need a first-rate Director of the Census Bureau and we need him or her right now.

Second, I think what I have heard is, for the most part, people say we want to make sure that whoever is leading this operation has the resources, human resources and financial resources and technology resources to do the job as best we can, to make sure we count as closely as we can the number of people who live in this country and do it in a cost-effective way.

I think I have heard here that we maybe ought to give serious consideration to whoever is going to be serving as our Census Bureau Directors in the future to be nominated and confirmed to serve a multi-year period of time, maybe 5 years, maybe something more or less. Sort of a mixed bag in terms of whether or not we need a direct report from the Census Bureau directly to the White House.

I take away from here the importance of having an ad campaign and a well thought-out ad campaign, particularly involving in the creation of the ad campaign folks who can better design the campaign to go after our target audience of people that aren't responding.

I mentioned earlier the American Legacy Foundation where I was privileged to serve as their founding Vice Chairman back in the late 1990s, right at the turn of the century, and the folks who developed the advertisements to young people were not, as I said, adults, not for the most part. Actually, the ideas came from the kids. Literally, the ideas came from the teenagers and they worked with ad agencies, but the raw product ideas came from the kids. The testing was on the kids, teenagers and so forth, even younger than that. But that is a message or a lesson that I am taking away from here.

A couple of others, as well. I won't go any further, but I think just a lot of good reminders here. I was talking to a friend of mine today about basketball and he was talking about more games are won in the planning of the game. I think he was talking about Bobby Knight. Remember Bobby Knight at the Indiana University, later was at Texas Tech—was it Texas Tech? Was that where he went? But he didn't always have the best team on the floor, but he always had the best plan going into a game of just about any-

body. That is why he was so successful. I think having a good plan here is valuable.

I think another good idea that we had was that a good deal of our operation—the program hasn't been actually tested operationally and we have a fair amount of work still to do there before we are ready for prime time. A whole bunch of good ideas.

One of the things I am inclined to do, I have asked you to provide for me two good names by close of business tomorrow of folks that we could submit to the Administration as a talent pool in case they need some help in that regard.

The other thing I might do, once we have got somebody who has been nominated, vetted, confirmed, in office, we might want to pull you back together again, maybe just on the phone, not even in person, maybe just do it on the phone in some kind of teleconference call to spend some time with some of us, our staff, the new Director, maybe a person or two from his or her team, just to go through again some of these points. I just think that might be time well spent. And if you might find time to do that with us, I would be grateful.

And you are going to get a couple of questions from people who are Members, some who were here and some who weren't, but some follow-up questions. We would ask that you respond to those promptly. I think we are going to leave the record open for 2 weeks for that, so if you get any follow-up questions from us, please respond to them promptly.

Are we forgetting anything here? All right. It has been a very good hearing, timely, and I think most informative, and we are grateful to you for spending your time with us and thank you for your ideas and input and for your willingness to give us some help between sundown now and sundown tomorrow, and also maybe your willingness to join us in a conversation with the new Director. Hopefully, he is going to be identified, vetted, confirmed soon. Thank you very much.

With that, this hearing is adjourned.

[Whereupon, at 4:11 p.m., the Subcommittee was adjourned.]



# A P P E N D I X

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TESTIMONY

of

Honorable Vincent P. Barabba

Former Director of the United States Census Bureau

"Lessons Learned: How the New Administration Can Achieve  
An Accurate and Cost-Effective 2010 Census"

Before

U. S. Senate Committee on Homeland Security  
and Governmental Affairs

Subcommittee on Federal Financial Management, Government  
Information, Federal Services and International Security

Dirksen Senate Office Building, Room 342

March 5, 2009

Mr. Chairman and Members of this Senate Subcommittee, thank you for inviting me to participate in this hearing. The most important lesson I learned while serving as Census Bureau Director, is that it takes a lot more than the resources of the Census Bureau to conduct the constitutionally mandated "Census of Inhabitants of the States."

Title 13 of the U.S. Code makes it clear that the Census Bureau has the primary responsibility for the planning and the conduct of the census. But in our free and diverse society there are very few endeavors that require the participation of every household. As a result the scale of this undertaking contributes to the extreme complexity and difficulty of counting our population.

One of the ways we can appreciate and understand the complexities and difficulties of taking the Census in a free and diverse society is to compare it to census taking in places where individual freedoms are sometimes put aside for the purposes of efficiency and accuracy. Such a comparison was made in an article describing the taking of the Turkish Census that appeared October 23, 2000 in the Washington Post:

"Virtually all of Turkey was under a dawn-to-dusk curfew today as 950,000 government workers fanned out cross the country to take the official 2000 door-to-door head count. No one was allowed to leave home from 5:00a.m. Until about 7:00p.m., so the streets of the usually jampacked city of 10 million people were eerily deserted.

Threatened with three-month jail sentences if caught off their property without permission, fishermen hung up their nets, traders at Istanbul's famed bazaars shuttered their stores and barely a car could be found moving on the usually traffic-choked streets."

Under the imposition of such harsh rules, which are unimaginable in this country, I believe the cost of a census would decrease and it is likely the accuracy of the count would improve. But whatever the savings in Census Bureau budget items, the increased costs to society in both economic terms and loss of personal freedoms would, of course, overwhelm any of the benefits.

Maintaining the freedoms we cherish and the need to let the country operate at full speed during the taking of the Census requires the cooperation of the "inhabitants of the States" and their elected leaders – as well as leaders from other areas of our society.

I would suggest that there is a relatively simple way for elected and appointed leaders of the Executive branch and the elected officials of the Senate and the

House of Representatives to make a major contribution to the taking of the Census. It is as simple as devoting a considerable portion of attention on encouraging the citizens of our country, through direct and personal contact, to fill-out and send back the census form as quickly and accurately as possible.

I had the opportunity to serve as Census Director during the planning of the Census and was then asked to come back for the taking of the Census, I can assure you the mid-decade hearings on how the census should be taken, even as difficult and sometimes contentious as they were, were extremely helpful in developing the final plans for the conduct of the Census. Later in this hearing you will hear from Robert Hill who participated in many of those hearings. His actions and that of many others led to unprecedented participation of leaders of minority organizations in the conduct of the 1980 Census.

Given the responsibility of the Administration and the Legislature to ensure the proper conduct of the Census, I appreciate the need for and the importance of legislative hearings. The citizens have the right, through their elected representatives, to make sure things are planned for and conducted properly. Even at this late stage, I think hearings like this, where you are asking what have we learned that will be helpful in the actual conduct of the Census are vital. Further hearings on how to involve others in communicating the importance of participating in the Census would go a long way towards making the very difficult task facing the employees of the Census Bureau, in this particular Census, less difficult.

Given where we are in the latter part of the decade, I would respectfully suggest, in the interest of getting the Census done well, that every effort be taken to conduct oversight involving the Census Bureau director in a manner that takes into account the extreme difficulty, the absolute deadlines, and the known problems which must be tackled and which will require his or her personal time to solve them. At this point the time has passed when new activities, beyond those already in place, can be planned for and implemented.

Another lesson I learned, was how the personal integrity of the career employees of the Census Bureau served as an important check point on difficult questions that occur during the taking of the Census, which by its very nature is a political activity. In this context I am aware that concerns have been raised over the extent to which our new Administration will be involved in providing direction to the Census Bureau.

My experience here is, in some ways, unique. When I served as Director during the planning of the 1980 Census I came in as a registered Republican appointed by a Republican President. When I came back for the conduct of the Census I was still a registered Republican, but this time I was appointed by a Democratic President. In the conduct of the Census I had more direct contact with the White House than in the planning period. In fact, it was a condition of my return that

arrangements were made so that the Department of Commerce was aware that when it was necessary, because of timeliness required for an answer or the issue was outside of the Commerce area of interest, I would be able to work directly with the White house.

In that time I can assure you that I was never asked to do anything that was not in the best interest of the Country. More importantly, if I had been asked to do something that, in my judgment, was not in the best interest of the Country, I would have been able to explain to that person making the request, that even if I had been willing to meet their request, they should be prepared to see that request on the front page of the Washington Post. The reason was simple; to get something accomplished the assistance of many Census Bureau career employees is required. Their feedback to a questionable action would be direct and if it was not listened to and properly addressed they would find a way to reveal the requested action rather than doing something that was not in the Country's best interest and that would eventually put the reputation of the Census Bureau at risk.

Because of its dedicated employees the Census Bureau has a well-earned reputation for conducting a very political activity in a non-partisan way.

There is one other observation I would make, in this case, to the judicial branch of government. On December 8, 1987, more than seven years following the start of the 1980 Census, (and after over fifty law suits were filed) United States District Judge, John E. Sprizzo decided that the appropriate standard for review was whether the Census Bureau had been either "arbitrary or capricious" in its decision not to adjust the 1980 census. Judge Sprizzo went on to say:

"Indeed, the extensive testimony at trial overwhelmingly demonstrates that the determination as to whether the use of the currently available adjustment techniques will provide a more or less reliable estimate of the population than the unadjusted census is an extraordinarily technical one, about which reasonable statisticians and demographers can and do disagree. Certainly the Bureau, which has the necessary experience, expertise, and resources to collect and analyze the complex statistical data, is better equipped than the courts to decide whether, in view of this dispute among the experts, the census should be adjusted."

Being neither capricious nor arbitrary is at the heart of the Census Bureau culture. Those who disagree with the decisions made by the Census Bureau should determine whether to take action, only after determining whether the bureau was capricious or arbitrary in making that decision. Doing so will save the Country and the people they represent a lot of time and money.

In the Carter Administration the decision, supported by Secretary of Commerce was that the Director of the Census Bureau should determine whether the



Census count should be adjusted. That decision should be maintained by the new Administration.

Thank you for this opportunity to share with you a few of the lessons I learned while in a job which provided me a chance to make a contribution as well as the opportunity learn so much about our government and our people.

**Lessons Learned: How the New Administration  
Can Achieve An Accurate and Cost-Effective Census**

**Homeland Security and Governmental Affairs  
Subcommittee on Federal Financial Management, Government  
Information, Federal Services, and International Security**

**March 5, 2009**

**Written Testimony of**

**Barbara Everitt Bryant, Ph.D.  
Director, Bureau of the Census, 1989-1993  
Research Scientist-Emeritus  
University of Michigan**

I am Barbara Everitt Bryant. I was Director of the Census Bureau from 1989 to 1993 and of the 1990 census. You have asked several of us to report on lessons learned from prior censuses and our views on conducting an accurate and cost-effective census.

**Lesson 1: Timely Appointment of a Director**

My first recommendation to this Subcommittee is that you do everything in your power and use your influence on the Administration to get a new Census Director nominated and confirmed as soon as possible. The hour, one year before the census, is already late and on this I speak from experience. Twenty years ago I became Director very late in the same election cycle we are in now. That is, a Presidential election in the year ending in "8," and nomination in the year ending in "9." But I was not in office until December 7, three weeks before the census year was to start. I got in office only by a recess appointment when my administration—who had not sent my nomination to the Senate until early October--realized when Congress adjourned for the Thanksgiving-to-New Year recess that there would not be a Director in place for the Census, as my confirmation hearing had not been scheduled. I was eventually confirmed by the Senate in the summer after the count.

Would census procedures been different if I had been in office sooner? Definitely! With 25 years of survey research experience, I found the worst designed questionnaire I had ever seen already rolling off the presses. The Census Bureau had been so concerned about capturing the data, that they had designed a questionnaire that was data processing-friendly but not user-friendly. The graphics were poor, and the questionnaire was covered with marks used for registering cameras that transferred answers to microfilm, but may have made the questionnaire look complicated to the user. The lesson of good questionnaire design has now been thoroughly learned by the Census Bureau. In 1991 we brought in the national guru on mail questionnaire design, Dr. Donald Dillman, and began testing questionnaire versions. As a result, the 2000 census had an excellent questionnaire design.

I also learned the difficulties of needing to immediately straighten out major problems when one is not yet acquainted with the organization's personnel. To promote the census, the Census Bureau had produced many promotional materials—posters, brochures, pencils and other handouts. When I arrived in office in December I discovered these were sitting in the Census Bureau's warehouse in Jeffersonville, Indiana—undistributed and influencing nobody. With the help of the Deputy Director—because I was at the disadvantage of not yet knowing census personnel and their talents—we shifted some personnel and put two excellent mid-level executives in place to take over distribution. For expediency, they had to do one-size-fits all shipments to the 496 offices across the country set up for taking the census. This had some amusing side effects, such as “Alaska Natives Be Counted” posters being sent everywhere, including Puerto Rico, and posters designed for Indian communities by the Institute for American Indian Arts becoming well-loved art work on walls in every part of the country. However, the materials were moved in time to be used starting January 2 of the census year.

I am a supporter of making the job of Director of the Census Bureau a 5-year appointment, starting in the years one and six. The planning cycle for operations as large

as the decennial and economic censuses are long and only with a several year lead-time could a Director have meaningful input to operations. Had I been in office earlier in 1989, it would still have been too late to save the 1990 questionnaire. It is no fun for a Census Director to sit before Congressional committees, such as this one, defending operations in which he or she has had no input.

**Lesson 2: A major, professional, coordinated communications and advertising campaign is vital to census success and accuracy. Such a campaign requires major financial outlay.**

Such a campaign has two major components and their theme needs to be coordinated: 1) a large volume of inexpensive promotional materials that can be handed out at the local level; and 2) radio, TV, and newspaper spots professionally produced with goals of reaching both a mass national and targeted audiences.

The advertising campaign has to be on a scale comparable to what a large private sector company would use to launch a new product. After all, the census is a new product to those in their 20's. It is a 10-year old, half-forgotten product to those 30 and over.

We learned in 1990 that the Census Bureau can no longer depend on free public service air time. Whereas that had worked in prior years, by 1990 TV and radio stations were no longer required to give free air time around the clock to keep their FCC licenses. Good and prime time space must be purchased, whatever the cost.

**Lesson 3: Outreach to Hard-to-Count Segments of the Population through Partnerships with Geographic, Ethnic, and Racial Organizations Can Help Reduce Undercount**

When we talk of undercount, let me put the proportions in perspective. There is very little overall undercount. The problem is differential undercount. The census historically has fully counted some segments of the population, such as homeowners and

older Americans. It falls short of fully counting the very mobile, renters, young people, and particularly those in Hispanic/Latino, African American, and American Indian communities. Those hard-to-count are best reached with one-on-one contacts from local people and organizations they know and trust. Communicating the fact that the Census Bureau will not give information from their census forms to any other organization or individual is a very hard message to get across. Only trusted sources can convince the reluctant, fearful, or uninformed that the Census Bureau does not give information to the INS, the IRS, landlords, ex-spouses, or mothers-in law.

#### **Factors That Will Help Improve Accuracy in 2010**

In addition to implementing these three lessons, three other factors will help improve accuracy in 2010: 1) The American Community Survey; 2) The downturn in employment that should make it possible to get better qualified temporary personnel; 3) The undercount research and coverage measurement done after recent censuses.

1) The American Community Survey. The census will no longer send out the long form with nearly 50 questions to 17% of households. This has always had a response rate several percentage points lower than the short form with only the 7 or 8 questions about each person needed for reapportionment and redistricting. The long form is now replaced by the American Community Survey which acquires the demographic, social and economic data formerly on the long form from a survey of one percent of households every year throughout the decade.

2) The Downturn in Employment. In 1990 when the census was fielded, unemployment was at 5%. The pool of available non-employed persons had dried to a puddle. While the downturn in employment is a national tragedy, it does have the effect of making temporary census jobs look very good to those unemployed, and it will create a more qualified pool from which to draw.

3) Undercount Research. Post-census research measures coverage at a very detailed level geographically. It pinpoints both the level of coverage and the undercount. The Census Bureau makes good use of this research to target the hard-to-reach in the subsequent census because it knows where they are. Without good coverage measurement, the Census Bureau could not learn lessons from each census to improve the next one.

#### **The Big Inhibitor to a Good Count in 2010**

Fear is very apt to inhibit a full count in Hispanic/Latino and immigrant neighborhoods in 2010. The current Immigration and Naturalization Service (INS) raids on employers and neighborhoods to identify and deport undocumented immigrants is bound to make residents unwilling to be found or, if found, to give information to the government. Imagine if you were a census taker and went to the door of a household that housed both legal and undocumented persons. I flew in yesterday from Phoenix where some family households include both, and where there have been a number of recent raids to find and arrest the undocumented. Imagine that you introduce yourself and say, "I'm from the Census Bureau and I want to ask you a few questions." What kind of cooperation do you think you will get?

#### **A Cost-Effective Census.**

Finally, with emphasis on counting every person and household the decennial census will never be a cheap operation. With its experience in the logistics of the operation and its magnitude, the Census Bureau probably does as cost-effective a job as any organization could. Current staff, not the Director of a \$2.6 billion census conducted 20 years ago, must report to you on present efforts to be cost effective.

A large, and not predictable expense of each census is following up on non-responding households. This follow-up requires repeated and labor intensive calls. This expense could be greatly reduced if the Census Bureau could statistically sample the non-

respondents and estimate the rest, a method that I personally recommended after 1990.<sup>1</sup> However, doing so was precluded by a bill sent by Congress to the Supreme Court before the 2000 census. The Supreme Court ruled against using sampling and estimation for apportioning Congressional seats.

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<sup>1</sup> Bryant, Barbara Everitt and William Dunn, *Moving Power and Money: The Politics of Census Taking* (Ithaca, New York: New Strategist Publications, Inc., 1995)

Statement of John H. Thompson

Subcommittee on Federal Financial, Management, Government Information, Federal  
Services and International Security

United States Senate Committee on Homeland Security and Governmental Affairs

March 5, 2009

Mr. Chairman and members of the subcommittee, I am pleased to have the opportunity to speak to you regarding the 2010 census. The experience that I draw upon for my statement is based on a 27 year career at the Census Bureau. Throughout this period, I held a number of management positions with increasing responsibility for the 1980, 1990, and 2000 censuses, the most significant being from 1997 through June 2001 when I served as the Associate Director for Decennial Censuses – the career executive with responsibility for all aspects of Census 2000.

My discussion will first cover the major components that contributed to the success of Census 2000, and then will focus on how these may be useful in reducing the risks facing the 2010 census effort.

However, before I begin, I would like to recognize the staff at the Census Bureau. They are highly motivated to carry out high quality non-partisan work. They are very creative and are the most significant source of the success of not only the decennial census, but the myriad of other demographic and economic programs the Census Bureau conducts. I know that for the 2010 census they are trying their best, and my remarks are intended only to assist their effort.

### **Census 2000 Success factors**

*Unprecedented support* – Census 2000 received the support of a wide array of stakeholders at the local, city, state, tribal, and national levels that encouraged response and participation in the census. The Census 2000 final mail response rate of 67 percent exceeded the 65 percent figure for 1990, reversing a trend of declining census mail response.

Three key factors led to this success, in my opinion. First, Census 2000 was the first census to use a paid advertising and promotion campaign. Second, an extensive partnership program directed at actively involving local communities was funded. Third, an effective communications strategy was established with key stakeholders to generate additional support for census participation. Stakeholders included the Congress, state, local and tribal governments, and numerous advocacy groups.

In addition, the non-response follow-up contact of households that did not respond to the mail was completed in approximately 9 weeks, a first for census taking in the era of



censuses based on a strategy of mailing households a questionnaire to complete and a mail-back document prior to conducting an in-person follow-up for those households which did not respond via mail. There are several important factors underlying this achievement, including a high level of public motivation to respond to the census when an enumerator visited the households of those that did not respond to the mail.

***A Director of the Census Bureau was in place in time to provide leadership and direction during critical periods*** – Dr. Kenneth Prewitt was confirmed as Director in 1998. He arrived in time to provide leadership and direction through several challenging periods. He was instrumental in establishing the communications strategy with the stakeholders mentioned above. In addition, Dr. Prewitt also put in place additional communication vehicles directed at providing timely and accurate information to the administration, the Congress, the Office of Management and Budget, other federal agencies, and a number of oversight bodies. The strategic vision and leadership was instrumental in the ultimate success of Census 2000, and created an environment where I and other career staff could be most effective.

***A strong experienced management team was in place well in advance of Census 2000*** – The management team that led Census 2000 was very strong and experienced. In addition, much of the team was in place in time to make significant contributions to the planning effort. The team not only included persons with lengthy decennial experience, but was enriched by outstanding managers with different backgrounds. While my own experiences had been exclusively associated with the decennial census, other managers including the Deputy Director and the Principal Associate Director for Administration had come to the Census Bureau from other government agencies. This blend of experience created a synergy that led to creative thinking and problem solving from a very broad perspective.

***The Census 2000 field effort was well managed and well funded*** – The Field organization at the Census Bureau is led by a central office in Suitland, Maryland and by 12 outstanding Regional Directors in offices across the United States. I simply cannot say enough about the efforts of this group for Census 2000. They were charged with recruiting and directing a staff that at its peak numbered close to 500,000. For 2000, early studies that linked enumerator pay to performance provided the information necessary to request higher relative pay rates than in previous censuses as a means of reducing turnover and overall costs. Once approved by the administration and Congress, these locality based pay rates gave the Field management group an additional tool to recruit a workforce that was highly motivated.

As I mentioned above, the ultimate result was that the non-response follow-up operation was completed in a much shorter time frame than in prior censuses. In addition to the public outreach, two other factors contributed to this outcome. First, enumerator turnover was low (relative to previous censuses) and second, the management provided by the Field organization was outstanding.

***Effective usage of private sector contractors*** – For Census 2000 a strategy was employed to rely on the private sector for expertise in advanced technology. Thus, contracts were awarded to private sector information technology companies to support some of the major census processing operations. The result was that the receipt, scanning, and processing of all of the census questionnaires was carried out by private sector contractors using optical scanning coupled with intelligent character recognition. Over 80 percent of the handwritten questionnaire entries were captured electronically with extremely high accuracy rates. In addition, three large (200,000 square foot) temporary processing centers were set-up, staffed, and managed by private sector contractors. There was an associated significant effort within the Census Bureau to manage these large contracts.

***Thorough testing of all operational systems*** – The dress rehearsal for Census 2000 occurred in 1998 and allowed for a final testing of all major operational systems, including the linkages between private contractor and internal Census Bureau developments. This became very important when the Bureau was forced to redesign the census processes in early 2000 as a result of the decision that sampling could not be used to produce results that would be used for apportionment. The redesign required the development and fielding of a number of new operations aimed at improving coverage. However, the core systems had been thoroughly tested, and protocols for testing system modifications were in place. The end result was that the new procedures that emerged from the redesign were incorporated and tested prior to fielding. In summary, we were as prepared as possible from a systems testing and monitoring perspective when the major operations started with the mail-out of questionnaires in March 2000.

### **The 2010 Census Risks and Recommendations**

From my perspective, the risks for the 2010 Census fall into the following areas:

***Systems development and testing*** – The Census Bureau is very late in the development and testing program to support the non-response follow-up operation. The reasons for this are well documented – the Census Bureau will forgo the previous plan to use handheld computing devices and revert to a paper-based methodology. In addition, the operational control systems necessary to support this operation were shifted from a contractor to internal Census Bureau developers. The paper-based procedures and systems were simply not available in time to be used during the dress rehearsal. Therefore the dress rehearsal did not include a paper-based non-response follow-up operation.

The situation is very serious since the non-response follow-up operation is the most expensive, labor intensive and critical operation that must be carried out for the 2010 Census. The systems to control and manage this operation must provide information to assign work to and monitor the progress of over 500,000 enumerators. This information must be available for a number of levels of management including central office, regional office, local census office and crew leaders. In addition, the systems must closely link

with other key systems including data capture and cost and progress. A failure in these systems would be catastrophic, potentially causing a loss of control of the enumeration, costing hundreds of millions of dollars, and putting not only the accuracy but the ultimate delivery of the census at risk.

The Census Bureau must conduct a complete test of these systems including assignment preparation, a significant in-person data collection operation (involving a local census office, crew leaders, and enumerators), transmittal and receipt of completed questionnaires, information exchanges with other key systems, and provision of management information.

***Director of the Census Bureau vacancy*** – Currently, there is no (to my knowledge) nominee to take over as the Director of the Census Bureau. It is critical that a Director be named as soon as possible to provide leadership and vision for not only the 2010 but the 2020 census as well. One of the most important contributions that a Director makes is establishing lines of communication and credibility with stakeholders, advocacy groups, and oversight bodies. As stated above, one of the most important factors in the success of Census 2000 was the widespread support it received. The 2010 Census would benefit greatly from a similar outpouring of support. A well respected Director is a key necessity for such an outcome.

***Communications*** – Establishing strong lines of communication with the administration, the Office of Management and Budget, the Congress, oversight entities and the other state, local and tribal stakeholders is critical for a successful census. The Census Bureau has a good core staff in this area. However, an administration appointment to lead this effort is essential.

***Management staff*** – I know personally the senior management staff at the Census Bureau. They are all accomplished and extremely effective, and I am certainly not directing any criticism toward their performance. However, I believe that they are stretched very thin and could benefit from an infusion of additional personnel. One of the lessons that I learned from the build-up for Census 2000 was that there are excellent managers throughout the federal government who can not only step in to help immediately but can offer fresh perspectives. I encourage the administration to work with the Census Bureau to reach out to other agencies for additional management assistance.

***Coverage Measurement*** – The Census Coverage Measurement (CCM) program is an important tool in assessing the accuracy of the census. For the 2010 Census the CCM is targeted at measuring the components of errors underlying the census process as well as providing measures of undercount (and over-count) for various population groups and areas. I believe that the current design falls short of meeting the goal of measuring component error. I also believe that the schedule of the CCM places key operations too far from Census Day, putting the entire program at risk due to respondent recall errors. I have communicated my concerns to the Census Bureau and I understand that some of them are being considered.

*Experimental Program for 2020* – Dr. Brown will express concerns related to the Census Bureau's planning for the 2020 Census. I fully endorse his statement. The administration and the Congress should challenge the Census Bureau to develop plans for a different kind of census in 2020. The Census Bureau has a long history of developing new methodologies to meet both challenges and opportunities that arise as our nation changes and grows. A new look now at the census for 2020 is very important in order to make use of the 2010 Census as a testing platform.

Mr. Chairman and members of the subcommittee thank you for the opportunity to make a statement regarding the 2010 Census.

United States Government Accountability Office

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**GAO**

Testimony  
Before the Subcommittee on Federal Financial  
Management, Government Information,  
Federal Services and International Security,  
Committee on Homeland Security and  
Governmental Affairs, U.S. Senate

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## 2010 CENSUS

# Fundamental Building Blocks of a Successful Enumeration Face Challenges

Statement of Robert Goldenkoff  
Director, Strategic Issues

David A. Powner  
Director, Information Technology Management Issues



March 5, 2009

## 2010 CENSUS

**Fundamental Building Blocks of a Successful Enumeration Face Challenges**

**Highlights**

Highlights of GAO-09-430T, a testimony before the Subcommittee on Federal Financial Management, Government Information, Federal Services and International Security, Committee on Homeland Security and Governmental Affairs, U.S. Senate

**Why GAO Did This Study**

The decennial census is a constitutionally-mandated activity that produces data used to apportion congressional seats, redraw congressional districts, and allocate billions of dollars in federal assistance. In March 2008, GAO designated the 2010 Census a high-risk area in part because of problems with the performance of handheld computers used to collect data. The U.S. Census Bureau has since strengthened its risk management efforts and made other improvements; however, the Bureau curtailed a dress rehearsal scheduled for 2008 and was unable to test key operations under census-like conditions. This testimony discusses the Bureau's readiness for 2010 and covers: (1) importance of reliable cost estimates; (2) building a complete and accurate address list; (3) following up on missing and conflicting responses to ensure accuracy; (4) targeting outreach to undercounted populations; and (5) designing, testing, and implementing technology for the census. The testimony is based on previously issued and ongoing GAO work.

**What GAO Recommends**

GAO is not making new recommendations, but past reports recommended the Bureau improve its cost estimation procedures and accuracy of its address list, take steps to ensure the readiness of handheld computers, better manage its partnership programs, and conduct end-to-end testing of IT systems. The Bureau generally agreed with the recommendations.

View GAO-09-430T for key components. For more information, contact Robert Goldenkoff at (202) 512-2757 or [goldenkoffr@gao.gov](mailto:goldenkoffr@gao.gov) or David Powner at (202) 512-9286 or [pownerd@gao.gov](mailto:pownerd@gao.gov)

**What GAO Found**

The decennial census is an inherently fragile undertaking, requiring many moving parts to come together in a short time frame. For example, accurate cost estimates help ensure that the Bureau has adequate funds, and that Congress, the administration, and the Bureau itself have reliable information on which to base advice and decisions. However, as GAO has reported before, the Bureau has insufficient policies and procedures and inadequately trained staff for conducting high-quality cost estimation for the decennial census.

A successful census requires a complete and accurate address list. The Bureau sends thousands of census workers (listers) into the field to collect and verify address information, and this year for the first time, listers will use handheld computers to collect data. During the dress rehearsal there were significant technical problems. A small-scale field test showed that these problems appear to have been addressed; however, the test was not carried out under full census-like conditions and did not validate all address canvassing requirements.

Nonresponse follow-up, the Bureau's largest and most costly field operation, was initially planned to be conducted using the handheld computers, but was recently changed to a paper-based system due to technology issues. The Bureau has not yet developed a road map for monitoring the development and implementation of nonresponse follow-up under the new design. Such a plan is essential to conducting a successful nonresponse follow-up. Furthermore, the system that manages the flow of work in field offices is not yet developed. Lacking plans for the development of both nonresponse follow-up and this management system, the Bureau faces the risk of not having them developed and fully tested in time for the 2010 Census.

In an effort to reduce the undercount, the Bureau is implementing a program of paid advertising integrated with other communications strategies, such as partnerships with state, local, and tribal governments and community organizations. Moving toward 2010, the Bureau faces long-standing challenges with the nation's linguistic diversity and privacy concerns, which can contribute to the undercounting of some groups.

Since 2005, GAO has reported concerns with the Bureau's management and testing of key IT systems. GAO is reviewing the status and plans for the testing of key 2010 Census systems, and while the Bureau has made progress in conducting systems, integration, and end-to-end testing, critical testing still remains to be performed before systems will be ready to support the 2010 Census, and the planning for the testing needs much improvement. In short, while the Bureau has made some noteworthy progress in gearing up for the enumeration, with just over a year remaining until census day, uncertainties surround the Bureau's overall readiness for 2010.

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Mr. Chairman, Senator McCain, and Members of the Subcommittee:

We are pleased to be here today to discuss with you the progress the U.S. Census Bureau (Bureau) has made in implementing the 2010 Census, and some of the critical challenges that lie ahead. We have been reviewing the national enumeration for decades on behalf of Congress. Over the years, through scores of reports and testimonies, we have acquired broad institutional knowledge that gives us a historical view of lessons learned for implementing a successful census. As requested, our remarks today will focus on the current challenges the Bureau faces and how lessons learned from prior decennials can help produce a more cost-effective headcount.

Perhaps the most important lesson learned from past enumerations is that the census is large, complex, and its many procedures are interrelated, thus making it inherently fragile. An accurate population count requires the alignment of a myriad of factors that include the successful execution of dozens of census-taking operations, the public's willingness to cooperate with enumerators, and the Bureau's ability to effectively partner with thousands of state, local, and tribal governments, as well as community and other organizations. The bottom line is that while the census is under way, the tolerance for any breakdowns is quite small. In light of this difficult operational environment, effective stewardship of the Bureau is essential to help ensure the census stays on track and the agency continues to embrace a culture of performance and accountability. Key to this will be the timely appointment of a Census Director who is an efficient administrator, a respected technical professional, a strategic leader, and capable of working constructively with Congress, officials at all levels of government, as well as nongovernmental organizations and the statistical community.

Other key valuable lessons learned include the importance of (1) sound risk management, (2) staying on schedule, (3) and conducting the census as a shared national undertaking involving Congress, government agencies at all levels, and the public at large. One or more of these lessons learned can be applied to the challenges the Bureau currently faces as it gears-up for the 2010 Census.

As you know, the census has encountered several significant operational challenges to date. Today is the first anniversary of when we first put the 2010 Census on our high-risk list because of (1) long-standing weaknesses in the Bureau's information technology (IT) acquisition and contract management function, (2) problems with the performance of handheld

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computers used to collect data, and (3) uncertainty over the ultimate cost of the census, currently estimated at more than \$14 billion.<sup>1</sup> In the past year, the Bureau has made progress on these challenges, in part by strengthening its risk management efforts. Still, the census remains high risk because a critical risk management exercise planned for 2008—a “dress rehearsal” of all census operations—was curtailed.<sup>2</sup> As a result, key operations and systems, including some that will be used for the first time in a census, were not tested in concert with one another or under census-like conditions.

This year, 2009, will be one of the most crucial time periods in this decade-long census cycle. The Bureau has already initiated large-block canvassing—an operation where temporary field workers validate address lists and maps for census blocks with more than 1,000 housing units in them. Next month, the Bureau is scheduled to conduct address canvassing for remaining census blocks when about 140,000 temporary employees will walk every known street in the country trying to update and verify the Bureau’s address list and maps for the country. Later in the year, in a separate effort, the Bureau is scheduled to update the locations of approximately 200,000 “group quarters” including homeless shelters, college residence halls, and group homes. The Bureau will also be opening hundreds of local census offices and refining plans for later operations.

As requested, in our remarks today, we will discuss the state of the census, paying particular attention to the following:

- the importance of reliable cost estimates and justifications for spending on census activities;
- building a complete and accurate address list to know where to count people;
- following up on missing and conflicting responses to ensure completeness and accuracy;
- targeting communications and outreach efforts to reduce the differential undercount; and
- designing, testing, and implementing technology to support the census.

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<sup>1</sup>GAO, *Information Technology: Significant Problems of Critical Automation Program Contribute to Risks Facing 2010 Census*, GAO-08-550T (Washington, D.C.: Mar. 5, 2008).

<sup>2</sup>GAO, *High-Risk Series: An Update*, GAO-09-271 (Washington, D.C.: Jan. 2009).



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Because the effectiveness of these activities will determine in large part the final cost and accuracy of the 2010 enumeration, they are important building blocks of a successful enumeration.

Our testimony today is based on our ongoing and recently completed work. See the last page of this statement for a list of our recently issued census reports. To identify key issues the Bureau faces as it approaches the 2010 Census, we reviewed and analyzed scheduling, design, operational, and testing plans for the various census operations, data from the dress rehearsal sites, and documents related to the December 2008 field test of the handheld computers in Fayetteville, North Carolina, and we interviewed Bureau staff. At the field test, we observed the handheld computers' ability to collect and transmit address data by accompanying census workers as they went door-to-door. In February 2009, we also observed census workers conduct large-block canvassing using laptop computers. We conducted our work in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audits to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions.

In summary, the Bureau has made commendable progress in rolling out key components of the census, making improvements to the handheld computers, certain risk management efforts, and how it will print the 80 million maps needed by temporary field staff to carry out the enumeration. Nevertheless, at a time when planning activities should be reaching completion, major testing should be winding down, and there should be confidence in the functionality of census-taking activities, the Bureau instead finds itself lacking sufficient policies, procedures, and trained staff to develop high-quality cost estimates, and a number of operations and support systems still need to be designed, planned, or tested. In the 13 months leading up to Census Day, the Bureau will be challenged to implement early operations, complete the final preparations for various activities, make refinements, and address any glitches that arise. With little time remaining, uncertainties surround the Bureau's readiness for 2010.

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## Background

As you know, Mr. Chairman, the decennial census is a critical national effort mandated by the Constitution. Census data are used to apportion seats in the Congress, redraw congressional districts, allocate billions of dollars in federal assistance to state and local governments, and for numerous other public and private sector purposes.

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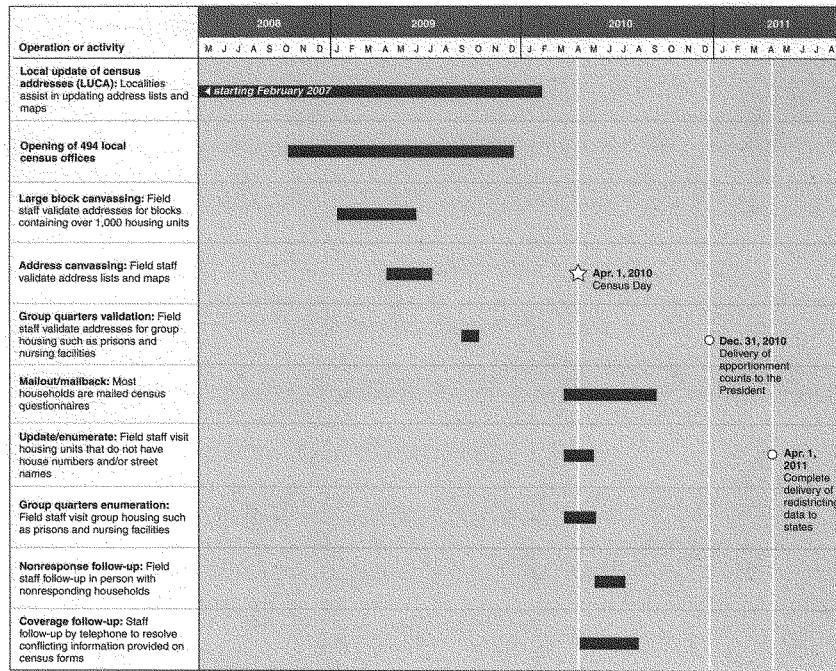
The Bureau estimates that the 2010 Census will cost more than \$14 billion over its life-cycle, making it the most expensive census in our nation's history. According to the Bureau, the increasing cost of the census is caused in part by various societal trends—such as increasing privacy concerns, more non-English speakers, and people residing in makeshift and other nontraditional living arrangements—making it harder to find people and get them to participate in the census.

In light of these challenges, it will be important for the Bureau to draw upon the lessons learned from previous decennials and apply them to the operational environment it faces today.

Some broad lessons learned that we have identified from our past work that directly affect the cost and accuracy of the census include the following:

- Sound risk management is critical to a successful census as the risks to a cost-effective enumeration are interrelated, and a shortcoming in one operation could trigger subsequent activities to spiral downward. Of course the reverse is also true, where a success in one operation could have a number of positive effects later in the process. Rigorous up-front preparations, testing, and where feasible, contingency planning, are the best ways to stave off problems. Likewise, management information systems capable of tracking key operations with real-time measures are essential because they enable the Bureau to quickly address trouble spots.
- It is important for the Bureau to stay on schedule, as the census is conducted against a backdrop of immutable deadlines, and an elaborate chain of interrelated pre- and post-Census Day activities are predicated upon those dates. Specifically, the Secretary of Commerce is legally required to (1) conduct the census on April 1 of the decennial year, (2) report the state population counts to the President for purposes of congressional apportionment by December 31 of the decennial year, and (3) send population tabulations to the states for purposes of redistricting no later than April 1 of the year following Census Day. To meet these reporting requirements, it is absolutely critical for the Bureau to stay on schedule. The figure shows some planned dates for selected decennial events.

Figure 1: Timeline of Selected Decennial Events



Source: GAO summary of U.S. Census Bureau information.

- Finally, the decennial census is a shared national undertaking, where Congress; other federal agencies; state, local, and tribal governments; nonprofit and private organizations; and, ultimately, the American public, all play vital roles in securing a complete and accurate population tally. Recognizing this, the Bureau fosters partnerships with these various

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entities to help with such activities as recruiting census workers, boosting participation, and building the Bureau's master address list. Mobilizing and coordinating these organizations requires an enormous effort on the Bureau's part.

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### Providing Reliable Cost Estimates and Justifications for Spending as 2010 Approaches Presents a Major Challenge for the Bureau

Accurate cost estimates are essential to a successful census because they help ensure that the Bureau has adequate funds, and so that Congress, the administration, and the Bureau itself can have reliable information on which to base or advise decisions. However, as we have reported before, the Bureau has insufficient policies and procedures and inadequately trained staff for conducting high-quality cost estimation for the decennial census.<sup>3</sup> The Bureau does not have cost estimation guidance and procedures in place or staff that is certified in cost estimation techniques. The Bureau is developing a new budget management tool that will support the cost estimation process beyond 2010. As part of that effort, the Bureau will need to establish rigorous cost estimation policies and procedures and use skilled estimators to ensure that future cost estimates are reliable and of high quality.

For example, to help manage the 2010 Census and contain costs, over 5 years ago we recommended that the Bureau develop a comprehensive, integrated project plan for the 2010 Census that should include the itemized, estimated costs of each component and a sensitivity analysis<sup>4</sup> and an explanation of significant changes in the assumptions on which these costs were based.<sup>5</sup> In response, the Bureau provided us with the *2010 Census Operations and Systems Plan*, dated August 2007. This plan represented an important step forward by including operational inputs and outputs and describing linkages among operations and systems. However, that document did not include itemized cost estimates of each component or sensitivity analyses, and thus did not provide a valid baseline or range of estimates for the Bureau and Congress. The Bureau has provided annual cost updates as part of its budget submission process, but these too have lacked cost analyses to support them. As the Bureau approaches the

<sup>3</sup>GAO, *2010 Census: Census Bureau Should Take Action to Improve the Credibility and Accuracy of Its Cost Estimate for the Decennial Census*, GAO-08-554 (Washington, D.C.: Jun. 15, 2008).

<sup>4</sup>Sensitivity analysis examines the effect of changing one assumption or cost driver at a time while holding all other variables constant.

<sup>5</sup>GAO, *2010 Census: Cost and Design Issues Need to Be Addressed Soon*, GAO-04-37 (Washington, D.C.: Jan. 15, 2004).

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final surge in the current decade-long decennial spending cycle, providing reliable cost estimates accompanied by sound justification, as we have recommended, will be important if Congress is to make informed decisions on the levels at which to fund the remainder of the 2010 Decennial Census.

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### Effective Address Canvassing Is Essential for a Complete and Accurate Count

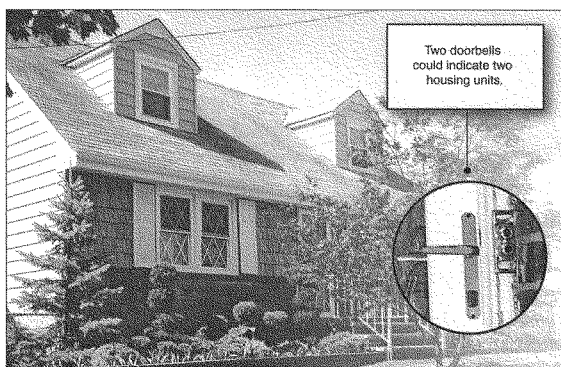
A complete and accurate list of all addresses where people live in the country is the cornerstone of a successful census because it identifies all households that are to receive a census questionnaire and serves as the control mechanism for following up with households that fail to respond. The Bureau goes to great lengths to develop a quality address list and maps, working with the U.S. Postal Service; federal agencies; state, local, and tribal governments; local planning organizations; private sector; and nongovernmental entities. For example, under the Local Update of Census Addresses (LUCA) program, the Bureau is authorized to partner with state, local, and tribal governments, tapping into their knowledge of local populations and housing conditions in order to secure a more complete count.<sup>6</sup> Between November 2007 and March 2008, over 8,000 state, local, and tribal governments provided approximately 8 million address updates through the LUCA program. The Bureau will send thousands of temporary census workers, known as listers, into the field to collect and verify address information and update maps on-site, including verifying address updates provided through the LUCA program.

Despite the Bureau's efforts, an inherent challenge is locating unconventional and hidden housing units, such as converted basements and attics. For example, as shown in figure 2, what appears to be a small, single-family house could contain an apartment, as suggested by its two doorbells. The Bureau has trained listers to look for extra mailboxes, utility meters, and other signs of hidden housing units and is developing training guides for 2010 to help listers locate hidden housing. Nonetheless, decisions on what is a habitable dwelling are often difficult to make—what is habitable to one worker may seem uninhabitable to another. According to Bureau estimates, approximately 1.4 million housing units were missed in the 2000 Census. If an address is not in the Bureau's address file, its residents are less likely to be included in the census.

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<sup>6</sup>Census Address List Improvement Act of 1994, Pub. L. No. 103-430.

**Figure 2: Single or Multi-unit Housing?**



Source: GAO

**Performance of Handheld Computers Have Improved in Field Testing, but More Information Is Needed to Evaluate Readiness for Address Canvassing**

A nationwide address canvassing operation for the 2010 Census is scheduled to begin this spring, when listers will use handheld computers for the first time to collect address data. Listers will add addresses that do not already appear on the Bureau's list and mark for deletion any that they cannot verify according to the rules and guidance developed by the Bureau.

When the handheld computers were tested during the dress rehearsal of the address canvassing operation, the devices experienced such problems as slow or inconsistent data transmission, freeze-ups, and difficulties collecting mapping coordinates.<sup>7</sup> The software that managers used to review work productivity and assign work was also troublesome.<sup>8</sup> For

<sup>7</sup>GAO, *2010 Census: Census Bureau's Decision to Continue with Handheld Computers for Address Canvassing Makes Planning and Testing Critical*, GAO-08-936 (Washington, D.C.: Jul. 31, 2008).

<sup>8</sup>GAO, *2010 Census: Plans for Decennial Census Operations and Technology Have Progressed, But Much Uncertainty Remains*, GAO-08-886T (Washington, D.C.: Jun. 11, 2008).

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example, management reports were unreliable because they pulled data from incorrect sources, and Bureau staff had difficulty using the work management software to reassign work.

The Bureau took steps to fix these issues, and in December 2008 conducted a limited field test in Fayetteville, North Carolina, to test the functionality and usability of the handheld computer, including whether the handheld computer problems encountered earlier had been resolved. Although the Bureau's final evaluation of the field test was due by the end of February 2009, we were not able to review it for this testimony. From observations of the December 2008 field test and interviews with Bureau officials, the Bureau appears to have addressed many of the handheld computer performance issues, as well as the problems with the work management software, observed during the dress rehearsal. This is an important and noteworthy development.

Nonetheless, more information is needed to determine the Bureau's overall readiness for address canvassing as the field test was not an end-to-end systems evaluation, did not validate all address canvassing requirements, such as training and help desk support, and did not include urban areas. Additionally, the scale of the field test was a fraction of that of the address canvassing operation. The Bureau was to conduct a review of the readiness of the handheld computers in January 2009, but has not yet reported the results of that review. Finally, the Bureau's actual workload for address canvassing—about 144.7 million addresses—is 11 million addresses more than the Bureau had planned for, leaving the Bureau with too few handheld computers to complete the workload in the time originally scheduled. In response, the Bureau will be extending the amount of time listers will be working in the field in affected areas, although not extending the end date of the operation, to compensate for the larger workload.

During dress rehearsal, listers experienced problems using handheld computers when collecting address data for large blocks having more than 1,000 housing units. According to the Bureau, the handheld computer did not have the capacity to efficiently collect data for large blocks. The Bureau has taken steps to mitigate this problem. In January 2009, the Bureau began using laptop computers and software already used in other operations to canvass the 2,086 blocks it identified as large blocks and by the end of February, the Bureau had completed approximately 80 percent

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of large block canvassing.<sup>9</sup> In February 2009, we observed large-block canvassing in Atlanta, Georgia; Boston, Massachusetts; New York, New York; San Francisco, California; and Washington, D.C. Based on our preliminary observations, the laptops appear to work well and listers reported their training was satisfactory. We are in the process of discussing these and other observations with the Bureau.

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### Bureau Needs to Finalize Field Data Collection Plans

The Bureau's largest and most costly field operation is nonresponse follow-up. The Bureau estimates that it will employ over 600,000 temporary workers to collect data from about 47 million nonresponding households over the course of 10 weeks in 2010. On April 3, 2008, the Bureau announced that it would no longer use handheld computers for nonresponse follow-up and would instead change to a paper-based nonresponse follow-up operation. According to the Bureau, this change added between \$2.2 billion to \$3 billion to the total cost of the census.

In May 2008, the Bureau issued a plan that covered major components of the paper-based nonresponse follow-up. Bureau officials said that they are developing a more detailed plan that would describe 2010 nonresponse follow-up operations and systems, workflow, major milestones, and roles and responsibilities of different census divisions. Although the plan was due in January 2009, it has yet to be completed. Because this plan serves as a road map for monitoring the development and implementation of nonresponse follow-up, it will be important for the Bureau to complete this plan.

The Bureau has changed plans for many aspects of nonresponse follow-up, and officials are determining which activities and interfaces will be tested and when this testing will occur. Although the Bureau has carried out a paper-based follow-up operation in past decennials, the 2010 Census includes new procedures and system interfaces that have not been tested under census-like conditions because they were dropped from the dress rehearsal. Bureau officials acknowledged the importance of testing new and modified nonresponse follow-up activities and system interfaces to reduce risk, but have not yet developed detailed testing plans. Given the number of tasks at hand and the increasingly shorter time frame in which to accomplish them, it will be important for the Bureau to monitor the

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<sup>9</sup>These 2,086 large blocks are located in 332 counties and are concentrated in the following regions: Atlanta, Charlotte, Dallas, Denver, Los Angeles, and New York.



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development of these testing plans, coordinate this testing with other activities, and ensure that testing occurs in time to take corrective actions, if needed.

In our previous work, we have highlighted the importance of sound risk management in planning for the decennial census.<sup>19</sup> The Bureau has strengthened aspects of its risk management process. For example, in July 2008, the Bureau identified 31 nonresponse follow-up risks, such as lower than expected enumerator productivity. However, it has not developed mitigation plans for these risks. Officials said that they are reevaluating these risks and plan to develop mitigation plans for high- and medium-priority nonresponse follow-up risks starting in spring 2009. However, the Bureau has not yet determined when these plans will be completed.

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**Coverage Follow-up  
Operation Needs to Be  
Finalized**

One of the Bureau's long-standing challenges is resolving conflicting information respondents provide on census forms. This problem can occur, for example, when the number of household members reported on a completed form differs from the number of persons for whom information is provided. In such instances, the Bureau attempts to reconcile the data during the coverage follow-up operation. For 2010, the Bureau plans to expand the scope of this operation and include two questions—known as coverage probes—on the census form to identify households where someone may have been missed or counted incorrectly (see fig. 3).

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<sup>19</sup>GAO, *2010 Census: Plans for Decennial Census Operations and Technology Have Progressed, But Much Uncertainty Remains*, GAO-08-886T (Washington, D.C.: Jun. 11, 2008).

Figure 3: Example of Coverage Probes from Draft 2010 Census Form

**2. Were there any additional people staying here April 1, 2010 that you did not include in Question 1? Mark X all that apply.**

- Children, such as newborn babies or foster children
- Relatives, such as adult children, cousins, or in-laws
- Nonrelatives, such as roommates or live-in baby sitters
- People staying here temporarily
- No additional people

**10. Does Person 1 sometimes live or stay somewhere else? No Yes — Mark X all that apply.**

- In college housing
- In the military
- At a seasonal or second residence
- For child custody
- In jail or prison
- In a nursing home
- For another reason

Source: GAO presentation of U.S. Census Bureau information.

However, after testing the probes earlier in the decade, the Bureau found that one of the probes was problematic in identifying persons potentially missing from the count. Although these probes were included on the forms mailed out during the dress rehearsal, the coverage follow-up operation did not include cases from nonresponse follow-up, which was canceled from the dress rehearsal. In the absence of a final test of the coverage probes in nonresponse follow-up, the effectiveness of the information generated by the probes is uncertain.

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**Fieldwork Management System for Most Operations Still Needs to Be Specified and Programmed**

A successful census depends, in large part, on the work carried out in the local census offices.<sup>11</sup> For the 2010 Census, this field work cannot be accomplished without a properly functioning Operations Control System (OCS). This system is intended to provide managers with essential real-time information, such as worker productivity and completion rates for field operations. It also allows managers to assign or reassign cases among workers. If the system does not work as intended, it could bog down or delay field operations and introduce errors into data collected.

Initially, the Bureau had planned to use a contractor to develop OCS to manage the workflow for those operations relying on paper-based processes, such as group quarters enumeration and nonresponse follow-up. However, in August 2008, the Bureau created an internal program to develop OCS and other related infrastructure that are needed to support these operations. The Bureau is still in the process of developing OCS for paper-based operations.

Although the Bureau has established a high-level schedule for testing of OCS, it has not yet finalized the requirements needed to begin its programming or developed a detailed schedule for conducting additional tests. Further, the Bureau has not yet fully defined how OCS will work together with other systems. Bureau officials said that the lack of detailed plans for operations, such as nonresponse follow-up, makes it difficult to finalize requirements for OCS or its testing plans. Our work on IT systems testing has shown that without adequate oversight and more comprehensive guidance, the Bureau cannot ensure that it is thoroughly testing its systems and properly prioritizing testing activities before the 2010 Census.

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**The Bureau Has Taken Steps to Improve Map Production, but Faces a Tight Schedule**

The Bureau estimates that it will need to produce approximately 30 million different map files from which 80 million paper maps will be printed to assist census workers in locating addresses in major census operations. The quality of maps and the timing of map printing are critical to the success of the census. In addition, many map production and printing activities must be conducted in sequence with no time to spare, putting at risk the Bureau's ability to print its maps on time. The Bureau has taken

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<sup>11</sup>For all decennial census operations, the Bureau plans to hire 1.4 million temporary employees who will receive their training and work assignments through 494 local census offices, as well as the 12 regional census centers throughout the country.

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positive steps to meet its requirements for map production and printing for 2010. For example, in June 2008, the Bureau decided to produce a generic map type in lieu of several operation-specific versions to reduce the number of map files to be produced. Furthermore, the Bureau is preparing to print most of its maps at the local census offices rather than at the regional offices, reducing the need to coordinate map delivery to the local census offices. In addition, the Bureau has replaced its labor-intensive quality assurance process with integrated, automated processes. These steps taken to improve workflow will become particularly important as the Bureau works to produce and print maps on an already compressed schedule.

The Bureau's schedule for producing and printing maps does not allow for any delays in receiving data from other operations or from the contractor delivering map files. For example, the Bureau intends to include map information from address canvassing, which ends in July 2009, in maps that will be used to validate locations of group quarters, which begins in September 2009. Bureau officials have stated that the turnaround time between these operations allows no slippage, and if these data are received late, an entire chain of subsequent map production steps would be thrown off schedule. Furthermore, according to the Bureau, local census offices need to receive map files from the contractor in time to print maps for certain field operations by January 8, 2010. However, the contractor is not scheduled to finish delivering the map files until January 19, 2010. Bureau officials said that they have taken steps to ensure that the necessary map files are delivered in time for printing but are still working to resolve the discrepancy.

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### Census Marketing Programs Will Need to Improve Response Rates of Historically Undercounted Groups

The Bureau goes to great lengths to reduce the undercount, especially among those groups likely to be undercounted at a higher rate than others, such as minorities and renters. For example, the Bureau plans to provide language assistance guides in 59 languages for completing the census, an increase from 49 languages in 2000. For the first time in 2010, the Bureau plans to send bilingual questionnaires to approximately 13 million households that are currently likely to need Spanish language assistance, as determined by analyzing recent data from a related Bureau survey program.

The Bureau also plans to deploy a multifaceted communications campaign consisting of, among other efforts, paid advertising and the hiring of as many as 680 partnership staff who will be tasked with reaching out to local governments, community groups, and other organizations in an effort to

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secure a more complete count. Overall, the Bureau estimates it will spend around \$410 million on its communication efforts for the 2010 Census. However, in constant 2010 dollars, this amount is somewhat less than the approximately \$480 million that the Bureau spent marketing the 2000 Census.

Although the effects of the Bureau's communication efforts are difficult to measure, the Bureau reported some positive results from its 2000 Census marketing efforts with respect to raising awareness of the census. For example, four population groups—non-Hispanic Blacks, non-Hispanic Whites, Asians, and Native Hawaiians—indicated they were more likely to return the census form after the 2000 Census partnership and marketing program than before its onset. However, a Bureau evaluation demonstrated only a limited linkage between the partnership and marketing effort and improvements in actual census mail return behavior for these or other groups. Put another way, while the Bureau's marketing activities might raise awareness of the census, a remaining challenge is converting that awareness into an actual response. Other marketing challenges include long-standing issues such as the nation's linguistic diversity and privacy concerns, as well as a number of newly emerging concerns such as local campaigns against illegal immigration and a post-September 11 environment that could heighten some groups' fears of government agencies.

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### Managing and Testing of Information Technology Systems Remain a Concern

Since 2005, we have reported on weaknesses in the Bureau's management of its IT acquisitions, and we remain concerned about the Bureau's IT management and testing of key 2010 Census systems. For example, in October 2007, we reported on the status of and plans for key 2010 Census IT acquisitions and whether the Bureau was adequately managing associated risks.<sup>12</sup> We found critical weaknesses in the Bureau's risk management practices, including those associated with risk identification, mitigation, and oversight. We later presented multiple testimonies on the Bureau's progress in addressing significant risks facing the 2010 Census. In particular, the Field Data Collection Automation (FDCA) program, which includes the development of handheld computers for the address canvassing operation and the systems, equipment, and infrastructure that field staff will use to collect data, has experienced significant problems.

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<sup>12</sup>GAO, *Information Technology: Census Bureau Needs to Improve Its Risk Management of Decennial Systems*, GAO-08-79 (Washington, D.C.: Oct. 5, 2007).

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For example, in March 2008, we testified that the FDCA program was experiencing schedule delays and cost increases, and was contributing significant risk to the 2010 Census. At that time, we highlighted our previous recommendations to better manage FDCA and the other IT acquisitions.<sup>13</sup>

In response to our findings and recommendations, the Bureau has taken several steps to improve its management of IT for the 2010 Census. For example, the Bureau has sought external assessments of its activities from independent research organizations, implemented a new management structure and management processes and brought in experienced personnel to key positions, and improved several reporting processes and metrics. In part, due to our review of the FDCA program, the Bureau requested a revised cost proposal for the FDCA program which resulted in a cost reduction of about \$318 million for the remaining 5-year life-cycle of the program.

As we have previously reported, operational testing planned during the census dress rehearsal would take place without the full complement of systems and functionality that was originally planned, and it was unclear whether the Bureau was developing plans to test all interrelated systems and functionality. At your request, we reviewed the status and plans of testing of key 2010 Census systems. As stated in our report, which we are releasing today, we found that the Bureau has made progress in conducting systems, integration, and end-to-end testing, but critical testing still remains to be performed before systems will be ready to support the 2010 Census, and the planning, execution, and monitoring of its testing needs much improvement.<sup>14</sup> We are making 10 recommendations for strengthening the Bureau's testing of 2010 Census systems. Those recommendations address improvements needed in test planning, management, and monitoring. In response to our report, the Department of Commerce and Bureau stated they had no significant disagreements with our recommendations.

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<sup>13</sup>GAO-08-550T.

<sup>14</sup>GAO, *Information Technology: Census Bureau Testing of 2010 Decennial Systems Can Be Strengthened*, GAO-09-262 (Washington, D.C.: Mar. 5, 2009).

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## Concluding Observations

In summary, little more than a year remains until Census Day. At a time when major testing should be completed and there should be confidence in the functionality of key operations, the Bureau instead finds itself managing late design changes and developing testing plans. The Bureau has taken some important steps toward mitigating some of the challenges that it has faced to date, yet much remains uncertain, and the risks to a successful decennial census remain.

Addressing these risks and challenges will be critical to the timely completion of a cost-effective census, and it will be essential for the Bureau to develop plans for testing systems and procedures not included in the dress rehearsal, and for Congress to monitor the Bureau's progress.

As always, we look forward to working with Congress in assessing the Bureau's efforts to overcome these hurdles to a successful census, and providing regular updates on the rollout of the decennial in the critical months that lie ahead.

Mr. Chairman and members of this Subcommittee, this concludes our statement. We would be happy to respond to any questions that you or members of the Subcommittee may have at this time.

If you have any questions on matters discussed in this testimony, please contact Robert Goldenkoff at (202) 512-2757 or David A. Powner at (202) 512-9286 or by e-mail at [goldenkoffr@gao.gov](mailto:goldenkoffr@gao.gov) or [pownerd@gao.gov](mailto:pownerd@gao.gov). Other key contributors to this testimony include Sher'rie Bacon, Thomas Beall, Steven Berke, Vijay D'Souza, Elizabeth Fan, Richard Hung, Andrea Levine, Signora May, Ty Mitchell, Catherine Myrick, Lisa Pearson, Kathleen Padulchick, Crystal Robinson, Melissa Schermerhorn, Cynthia Scott, Karl Seifert, Jonathan Ticehurst, Timothy Wexler, and Katherine Wulff.

United States Government Accountability Office

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**GAO**

**Testimony**

Before the Subcommittee on Federal Financial Management,  
Government Information, Federal Services, and  
International Security, Committee on Homeland Security  
and Governmental Affairs, U.S. Senate

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For Release on Delivery  
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**INFORMATION  
TECHNOLOGY**

**Census Bureau Needs to  
Strengthen Testing of 2010  
Decennial Systems**

Statement of David A. Powner  
Director, Information Technology Management Issues

Robert Goldenkoff  
Director, Strategic Issues





March 5, 2009

## INFORMATION TECHNOLOGY

**Census Bureau Needs to Strengthen Testing of 2010 Decennial Systems**

  
**Highlights**

Highlights of GAO-09-413T, a testimony before the Subcommittee on Federal Financial Management, Government Information, Federal Services, and International Security, Committee on Homeland Security and Governmental Affairs, U.S. Senate

**Why GAO Did This Study**

The Decennial Census is mandated by the U.S. Constitution and provides vital data that are used, among other things, to reapportion and redistrict congressional seats and allocate federal financial assistance. In March 2008, GAO designated the 2010 Decennial Census a high-risk area, citing a number of long-standing and emerging challenges, including weaknesses in the U.S. Census Bureau's (Bureau) management of its information technology (IT) systems and operations. In conducting the 2010 census, the Bureau is relying on both the acquisition of new IT systems and the enhancement of existing systems. Thoroughly testing these systems before their actual use is critical to the success of the census. GAO was asked to testify on its report, being released today, on the status and plans of testing of key 2010 decennial IT systems.

**What GAO Recommends**

In its report, GAO recommended that the Secretary of Commerce direct the Bureau to complete key system testing activities, develop and maintain plans and schedules for integration testing, and improve the oversight of and guidance for systems testing. In comments on a draft of this report, the department agreed with GAO's recommendations.

To view the full product, including the scope and methodology, click on GAO-09-413T. For more information, contact David A. Powner at (202) 512-9286 or [pownerd@gao.gov](mailto:pownerd@gao.gov) or Robert Goldenkoff at (202) 512-2757 or [goldenkoffr@gao.gov](mailto:goldenkoffr@gao.gov)

**What GAO Found**

Although the Bureau has made progress in testing key decennial systems, critical testing activities remain to be performed before systems will be ready to support the 2010 census. Bureau program offices have completed some testing of individual systems, but significant work still remains to be done, and many plans have not yet been developed (see table below). In its testing of system integration, the Bureau has not completed critical activities; it also lacks a master list of interfaces between systems and has not developed testing plans and schedules. Although the Bureau had originally planned what it refers to as a Dress Rehearsal, starting in 2006, to serve as a comprehensive end-to-end test of key operations and systems, significant problems were identified during testing. As a result, several key operations were removed from the Dress Rehearsal and did not undergo end-to-end testing. The Bureau has neither developed testing plans for these key operations, nor has it determined when such plans will be completed.

Weaknesses in the Bureau's testing progress and plans can be attributed in part to a lack of sufficient executive-level oversight and guidance. Bureau management does provide oversight of system testing activities, but the oversight activities are not sufficient. For example, Bureau reports do not provide comprehensive status information on progress in testing key systems and interfaces, and assessments of the overall status of testing for key operations are not based on quantitative metrics. Further, although the Bureau has issued general testing guidance, it is neither mandatory nor specific enough to ensure consistency in conducting system testing. Without adequate oversight and more comprehensive guidance, the Bureau cannot ensure that it is thoroughly testing its systems and properly prioritizing testing activities before the 2010 Decennial Census, posing the risk that these systems may not perform as planned.

**Status and Plans of 2010 System Testing**

System	Testing status	Testing plan completed	Testing schedule completed
Headquarters processing	In progress	Partial	Partial
Master address and geographic information	In progress	Partial	Partial
Decennial response integration	In progress	Partial	Partial
Field data collection automation	In progress	Partial	Partial
Paper-based operations	In progress	No	Partial
Data access and dissemination	In progress	Partial	Partial

Source: GAO analysis of Bureau data.

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Mr. Chairman and Members of the Subcommittee:

Thank you for the opportunity to participate in today's hearing on the 2010 census. The U.S. Census Bureau (Bureau) is relying on both the acquisition of new systems and the enhancement of existing legacy systems for conducting operations for the 2010 Decennial Census. As you know, the census is mandated by the U.S. Constitution and provides data that are vital to the nation. These data are used, for example, to reapportion and redistrict the seats of the U.S. House of Representatives, realign the boundaries of the legislative districts of each state, and allocate federal financial assistance. Carrying out the census is the responsibility of the Department of Commerce's Census Bureau, which is relying on automation and technology to improve the coverage, accuracy, and efficiency of the 2010 census. Because the accuracy of the 2010 census depends in part on the proper functioning of these systems, both individually and when integrated, thorough testing of these systems before their actual use is critical to the success of the census.

As you know, in March 2008, we designated the 2010 Decennial Census as a high-risk area, citing a number of long-standing and emerging challenges,<sup>1</sup> including weaknesses in the Bureau's management of its information technology (IT) systems and operations. The 2010 Decennial Census remained as one of our high-risk areas in our recent high-risk update issued in January 2009.<sup>2</sup> This statement summarizes the findings in our report, being released by the subcommittee today, on the status and plans of testing of key 2010 decennial IT systems.<sup>3</sup>

Our work for this report was performed in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objective. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objective.

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<sup>1</sup>GAO, *Information Technology: Significant Problems of Critical Automation Program Contribute to Risks Facing 2010 Census*, GAO-08-550T (Washington, D.C.: Mar. 5, 2008).

<sup>2</sup>GAO, *High-Risk Series: An Update*, GAO-09-271 (Washington, D.C.: Jan. 22, 2009).

<sup>3</sup>GAO, *Information Technology: Census Bureau Testing of 2010 Decennial Systems Can Be Strengthened*, GAO-09-262 (Washington, D.C.: Mar. 5, 2009).

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## Background

The Bureau's mission is to provide comprehensive data about the nation's people and economy. The 2010 census enumerates the number and location of people on Census Day, which is April 1, 2010. However, census operations begin long before Census Day and continue afterward. For example, address canvassing for the 2010 census will begin in April 2009, while the Secretary of Commerce must report tabulated census data to the President by December 31, 2010, and to state governors and legislatures by March 31, 2011.

The decennial census is a major undertaking for the Bureau that includes the following major activities:

- *Establishing where to count.* This includes identifying and correcting addresses for all known living quarters in the United States (address canvassing) and validating addresses identified as potential group quarters, such as college residence halls and group homes (group quarters validation).
- *Collecting and integrating respondent information.* This includes delivering questionnaires to housing units by mail and other methods,<sup>4</sup> processing the returned questionnaires, and following up with nonrespondents through personal interviews (nonresponse follow-up). It also includes enumerating residents of group quarters (group quarters enumeration) and occupied transitional living quarters (enumeration of transitory locations), such as recreational vehicle parks, campgrounds, and hotels. It also includes a final check of housing unit status (field verification) where Bureau workers verify potential duplicate housing units identified during response processing.
- *Providing census results.* This includes tabulating and summarizing census data and disseminating the results to the public.

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## Role of IT in the Decennial Census

Automation and IT are to play a critical role in the success of the 2010 census by supporting data collection, analysis, and dissemination. Several systems will play a key role in the 2010 census. For example, enumeration "universes," which serve as the basis for enumeration operations and response data collection, are organized by the Universe Control and

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<sup>4</sup>For example, in the "update/leave" operation, after enumerators update addresses, they leave questionnaires at housing units; this occurs mainly in rural areas lacking street names, house numbers, or both.

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Management (UC&M) system, and response data are received and edited to help eliminate duplicate responses using the Response Processing System (RPS). Both UC&M and RPS are legacy systems that are collectively called the Headquarters Processing System.

Geographic information and support to aid the Bureau in establishing where to count U.S. citizens are provided by the Master Address File/Topologically Integrated Geographic Encoding and Referencing (MAF/TIGER) system. The Decennial Response Integration System (DRIS) is to provide a system for collecting and integrating census responses from all sources, including forms and telephone interviews. The Field Data Collection Automation (FDCA) program includes the development of handheld computers for the address canvassing operation and the systems, equipment, and infrastructure that field staff will use to collect data. Paper-Based Operations (PBO) was established in August 2008 primarily to handle certain operations that were originally part of FDCA. PBO includes IT systems and infrastructure needed to support the use of paper forms for operations such as group quarters enumeration activities, nonresponse follow-up activities, enumeration at transitory locations activities, and field verification activities. These activities were originally to be conducted using IT systems and infrastructure developed by the FDCA program. Finally, the Data Access and Dissemination System II (DADS II) is to replace legacy systems for tabulating and publicly disseminating data.

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**Comprehensive Testing Improves Chances of a Successful Decennial Census**

As stated in our testing guide and the Institute of Electrical and Electronics Engineers (IEEE) standards,<sup>5</sup> complete and thorough testing is essential for providing reasonable assurance that new or modified IT systems will perform as intended. To be effective, testing should be planned and conducted in a structured and disciplined fashion that includes processes to control each incremental level of testing, including testing of individual systems, the integration of those systems, and testing to address all interrelated systems and functionality in an operational environment.

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<sup>5</sup>GAO, *Year 2000 Computing Crisis: A Testing Guide*, GAO/AIMD-10.1.21 (Washington, D.C.: Nov. 1, 1998) and IEEE Std. 12207-2008, *Systems and Software Engineering—Software Lifecycle Processes* (Piscataway, N.J.: 2008).

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Further, this testing should be planned and scheduled in a structured and disciplined fashion. Comprehensive testing that is effectively planned and scheduled can provide the basis for identifying key tasks and requirements and better ensure that a system meets these specified requirements and functions as intended in an operational environment.

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**Dress Rehearsal Includes Testing of Certain Systems and Operations**

In preparation for the 2010 census, the Bureau planned what it refers to as the Dress Rehearsal. The Dress Rehearsal includes systems and integration testing,<sup>6</sup> as well as end-to-end testing of key operations in a census-like environment. During the Dress Rehearsal period, running from February 2006 through June 2009, the Bureau is developing and testing systems and operations, and it held a mock Census Day on May 1, 2008. The Dress Rehearsal activities, which are still under way, are a subset of the activities planned for the actual 2010 census and include testing of both IT and non-IT related functions, such as opening offices and hiring staff.

The Dress Rehearsal identified significant technical problems during the address canvassing and group quarters validation operations. For example, during the Dress Rehearsal address canvassing operation, the Bureau encountered problems with the handheld computers, including slow and inconsistent data transmissions, the devices freezing up, and difficulties collecting mapping coordinates. As a result of the problems observed during the Dress Rehearsal, cost overruns and schedule slippage in the FDCA program, and other issues, the Bureau removed the planned testing of several key operations from the Dress Rehearsal and switched key operations, such as nonresponse follow-up, to paper-based processes instead of using the handheld computers as originally planned.

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<sup>6</sup>Individual program offices manage individual system testing for the Dress Rehearsal, and integration testing is managed by the pairs of program offices whose interfaces are being tested.

**Bureau Is Making Progress in Key System Testing, but Lacks Plans and Schedules**

Through the Dress Rehearsal and other testing activities, the Bureau has completed key system tests, but significant testing has yet to be done, and planning for this is not complete. Table 1 summarizes the status and plans for system testing.

**Table 1: Status of System Testing and Plans**

System	Dress Rehearsal system testing	Testing status	2010 system testing	
			Testing plan completed	Testing schedule completed
Headquarters Processing—UC&M and RPS	In progress	In progress	Partial	Partial
MAF/TIGER	Completed	In progress	Partial	Partial
DRIS	Completed	In progress	Partial*	Partial*
FDCA	Partially completed <sup>b</sup>	In progress	Partial	Partial
PBO	N/A <sup>c</sup>	In progress	No	Partial
DADS	DADS <sup>d</sup> in progress	DADS II in progress	Partial	Partial

Source: GAO analysis of Bureau data.

\*Program officials stated that DRIS's test plan and schedule were completed but will be modified to reflect changes resulting from the switch to paper-based operations.

<sup>b</sup>System testing related to operations removed from the Dress Rehearsal was not completed. These operations were later moved to PBO.

<sup>c</sup>The office to support PBO was created in August 2008.

<sup>d</sup>DADS system is being used for Dress Rehearsal system testing, but the replacement system, DADS II, is being developed and tested for 2010 operations.

**Bureau Has Conducted Limited Integration Testing, but Has Not Developed 2010 Test Plans and Schedules for Integration Testing**

Effective integration testing ensures that external interfaces work correctly and that the integrated systems meet specified requirements. This testing should be planned and scheduled in a disciplined fashion according to defined priorities.

For the 2010 census, each program office is responsible for and has made progress in defining system interfaces and conducting integration testing, which includes testing of these interfaces. However, significant activities remain to be completed. For example, for systems such as PBO, interfaces have not been fully defined, and other interfaces have been defined but have not been tested. In addition, the Bureau has not established a master

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list of interfaces between key systems, or plans and schedules for integration testing of these interfaces. A master list of system interfaces is an important tool for ensuring that all interfaces are tested appropriately and that the priorities for testing are set correctly. As of October 2008, the Bureau had begun efforts to update a master list it had developed in 2007, but it has not provided a date when this list will be completed.

Without a completed master list, the Bureau cannot develop comprehensive plans and schedules for conducting systems integration testing that indicate how the testing of these interfaces will be prioritized. With the limited amount of time remaining before systems are needed for 2010 operations, the lack of comprehensive plans and schedules increases the risk that the Bureau may not be able to adequately test system interfaces, and that interfaced systems may not work together as intended.

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**Bureau Has Conducted Limited End-to-End Testing as Part of the Dress Rehearsal, but Has Not Developed Testing Plans for Critical Operations**

Although several critical operations underwent end-to-end testing in the Dress Rehearsal, others did not. As of December 2008, the Bureau had not established testing plans or schedules for end-to-end testing of the key operations that were removed from the Dress Rehearsal, nor has it determined when these plans will be completed. These operations include

- update/leave,
- nonresponse follow-up,
- enumeration of transitory locations,
- group quarters enumeration, and
- field verification.

The decreasing time available for completing end-to-end testing increases the risk that testing of key operations will not take place before the required deadline. Bureau officials have acknowledged this risk in briefings to the Office of Management and Budget. However, as of January 2009, the Bureau had not completed mitigation plans for this risk. According to the Bureau, the plans are still being reviewed by senior management. Without plans to mitigate the risks associated with limited end-to-end testing, the Bureau may not be able to respond effectively if systems do not perform as intended.

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**Bureau Lacks Sufficient Executive-Level Oversight and Guidance for Testing**

As stated in our testing guide and IEEE standards, oversight of testing activities includes both planning and ongoing monitoring of testing activities. Ongoing monitoring entails collecting and assessing status and progress reports to determine, for example, whether specific test activities are on schedule. In addition, comprehensive guidance should describe each level of testing and the types of test products expected.

In response to prior recommendations, the Bureau took initial steps to enhance its programwide oversight; however, these steps have not been sufficient. For example, in June 2008, the Bureau established an inventory of all testing activities specific to all key decennial operations. However, the inventory has not been updated since May 2008, and officials have no plans for further updates.

In another effort to improve executive-level oversight, the Decennial Management Division began producing (as of July 2008) a weekly executive alert report and has established (as of October 2008) a dashboard and monthly reporting indicators. However, these products do not provide comprehensive status information on the progress of testing key systems and interfaces. Further, the assessment of testing progress has not been based on quantitative and specific metrics. The lack of quantitative and specific metrics to track progress limits the Bureau's ability to accurately assess the status and progress of testing activities. In commenting on our draft report, the Bureau provided selected examples where they had begun to use more detailed metrics to track the progress of end-to-end testing activities.

The Bureau also has weaknesses in its testing guidance. According to the Associate Director for the 2010 census, the Bureau did establish a policy strongly encouraging offices responsible for decennial systems to use best practices in software development and testing, as specified in level 2 of Carnegie Mellon's Capability Maturity Model® Integration.<sup>7</sup> However, beyond this general guidance, there is no mandatory or specific guidance on key testing activities such as criteria for each level or the type of test products expected. The lack of guidance has led to an ad hoc—and, at times—less than desirable approach to testing.

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<sup>7</sup>Capability Maturity Model® Integration is intended to provide guidance for improving an organization's processes and the ability to manage the development, acquisition, and maintenance of products and services. The model uses capability levels to assess process maturity.



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### Implementation of Recommendations Could Help Ensure Key Testing Activities are Completed

In our report, we are making ten recommendations for improvements to the Bureau's testing activities. Our recommendations include finalizing system requirements and completing development of test plans and schedules, establishing a master list of system interfaces, prioritizing and developing plans to test these interfaces, and establishing plans to test operations removed from the Dress Rehearsal. In addition, we are recommending that the Bureau improve its monitoring of testing progress and improve executive-level oversight of testing activities.

In written comments on the report, the department had no significant disagreements with our recommendations. The department stated that its focus is on testing new software and systems, not legacy systems and operations used in previous censuses. However, the systems in place to conduct these operations have changed substantially and have not yet been fully tested in a census-like environment. Consistent with our recommendations, finalizing test plans and schedules and testing all systems as thoroughly as possible will help to ensure that decennial systems will work as intended.

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In summary, while the Bureau's program offices have made progress in testing key decennial systems, much work remains to ensure that systems operate as intended for conducting an accurate and timely 2010 census. This work includes system, integration, and end-to-end testing activities. Given the rapidly approaching deadlines of the 2010 census, completing testing and establishing stronger executive-level oversight are critical to ensuring that systems perform as intended when they are needed.

Mr. Chairman and members of the subcommittee, this concludes our statement. We would be pleased to respond to any questions that you or other members of the subcommittee may have at this time.

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### Contacts and Staff Acknowledgements

If you have any questions about matters discussed in this testimony, please contact David A. Powner at (202) 512-9286 or [pownerd@gao.gov](mailto:pownerd@gao.gov) or Robert Goldenkoff at (202) 512-2757 or [goldenkoffr@gao.gov](mailto:goldenkoffr@gao.gov). Other key contributors to this testimony include Sher'rie Bacon, Barbara Collier, Neil Doherty, Vijay D'Souza, Elizabeth Fan, Nancy Glover, Signora May, Lee McCracken, Ty Mitchell, Lisa Pearson, Crystal Robinson, Melissa Schermerhorn, Cynthia Scott, Karl Seifert, Jonathan Ticehurst, Timothy Wexler, and Katherine Wulff.

Research, Experimentation and Evaluation for the Decennial Census

Statement of

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and

Chair, Committee on the  
Design of the 2010 Census Program of Evaluations and Experiments;  
of the Committee on National Statistics within the  
Division of Behavioral and Social Sciences and Education;  
National Academy of Sciences

before the

Subcommittee on Federal Financial Management, Government Information,  
Federal Services, and International Security;  
U.S. Senate Committee on  
Homeland Security and Governmental Affairs

March 5, 2009

## Statement

Good afternoon Mr. Chairman and members of the Subcommittee. I am Lawrence Brown, professor of statistics at the Wharton School of Business and a member of the National Academy of Sciences. As such, I have been actively interested in issues relating to the decennial census for over a decade, especially since my testimony before Congressional subcommittees in 1997 and 1998. I have written two scholarly articles about the operation of the decennial census, and—perhaps more pertinently—have served on several National Academy of Sciences/National Research Council advisory panels involving census issues. This service includes the 1998–2004 Panel to Review the 2000 Census and the 2005–2008 Panel on Coverage Measurement for the 2010 Census. I am currently the Chair of the Panel to Review the 2010 Census Program of Evaluations and Experiments. Many of my comments this afternoon are drawn from a very recent Letter Report of this Panel, mailed to Mr. Thomas Mesenbourg as Acting Director of the Census Bureau.

As you know, the decennial census is a complex, expensive operation. It has been described as the nation's largest peacetime mobilization. Research and development for the present, and looking to the future, are essential if this operation is to be completed now and subsequently in an accurate and acceptably economical manner. There are three issues I would like to bring to your attention from our panel's interim report in 2008 and our current letter report to Mr. Mesenbourg. Two of these issues involve research and planning that should be part of the 2010 Census if the census is to remain a satisfactorily contemporary operation in 2020. The third concern is a more immediate one about research that should be conducted before fielding the 2010 Census.

Before coming to the two issues of importance for the next decade, I'll first address the more immediate concern. This concern arises as a consequence of the replacement of handheld computing devices for use in the nonresponse follow-up portion of the census. This operation—acronymically termed NRFU—is the single largest and most expensive part of the census, with over half a million census workers operating out of regional and local offices throughout the country to actively collect census data. Several members of your committee, as well as other members of Congress, and others in the government have already noted the unfortunate and considerable increase in census costs arising out of the failed effort to incorporate handheld devices into NRFU. I want to focus on a different aspect of this forced change in census plans.

These devices and other equipment and software accompanying them had been designated to form the core of the **Operating Control System**. This is the system used to keep coordinated track of, and direct, daily operations for the army of field workers involved in NRFU. The Census Bureau is now in the process of restructuring the entire OCS. It has been reported that the new command control system will contain portions of the original design (to be supplied by the Harris Corporation, the original contractor), portions from other contractors, and components analogous to paper-based and computer-based systems used in the 2000 census.

Given the complexity of conducting the decennial census, it has long been deemed essential to have a complete test “dress rehearsal” two years prior to the census so that flaws can be detected and corrected. However, the timing of the decision to revert from handheld computers to a paper-based NRFU process was such that the 2008 dress

rehearsal did not test NRFU – a major gap in pre-census testing. Because NRFU was not tested, the dress rehearsal also provided no information or testing on the interaction of NRFU processes with the redesigned coverage follow-up operation and other component census processes.

The Census Bureau acknowledges that the dress rehearsal provided an inadequate test of the 2010 census processes. As a remedy, it has scheduled a number of small system and field tests of various components of the census OCS chain. However, given that the operational control system for the field data collection system will not be ready until the summer or fall of 2009, the Census Bureau has decided against a comprehensive test of the entire process due to the lack of time to design and carry out such a test.

The panel believes that this testing strategy puts the Census Bureau in an extremely risky position. This stance leaves the Bureau vulnerable to technical flaws in the census process that involve interactions of the many components and subsystems; it also fails to detect any potential problems in the interaction between the system and census workers and administrators under field conditions. The Census Bureau needs to perform as full and realistic an operational test as feasible of all nonresponse follow-up systems from start to finish.

It is true that ideally tests should be conducted in enough time to detect—and correct—any problems. But if time is too short to allow for a full cycle of test and correction, earlier detection of defects or inefficiencies can still be vital. Even if a flaw is discovered too late to be addressed in a pre-tested, systematic way, some contingency planning will likely be able to greatly reduce any negative consequences for the census itself.

Now let me turn to two research issues that concern the longer range future of the census. Our reports discuss two topics with strong potential effects on cost and quality—Internet data collection and the use of administrative records. Neither of these is scheduled to play a major role in the 2010 census. But 2010 is very nearby in terms of planning and implementing a large operation like the Census. So it seems much too late to fill these omissions in 2010. What concerns us now is the lack of effective plans to use the opportunity of the 2010 Census to conduct research. Such research should study how (and whether) these modern tools should be part of the 2020 Census.

In the past two decades the Census Bureau has compiled an extensive database by matching various federal-record personal ID systems including Social Security files and IRS identity records. Limited research uses have been made of these data, including an experiment in the 2000 census that used an early version of the database as a case study comparison for two sites in Maryland and Colorado. However, administrative records such as these are not a major part of plans for the 2010 census or its program of evaluations and experiments, despite their substantial potential for both census cost reduction and quality improvements.

Administrative records could be used to dramatically reduce the cost of nonresponse follow-up and improve the quality of the resulting data collected by avoiding inaccuracies in “last resort” enumerations (often supplied by proxy respondents, such as neighbors or landlords) and by providing higher quality information than is currently supplied by whole-person and whole-household imputation. In addition,

administrative records could be used to target the implementation of census processes. A key example is that administrative records could identify areas in which the Master Address File (MAF) is deficient, and therefore in need of an address canvass check prior to the decennial census. It is conceivable that this approach could dramatically reduce the costs of the currently 100 percent application of the address canvassing operation. Other potential uses of administrative records are also suggested in our reports.

Although wide-scale use of administrative records to substitute for nonresponse follow-up in 2020 or thereafter would almost certainly require a change in legislation, the potential benefits of increased use of records in census processes should be studied in order to estimate the extent to which such changes would be economically and statistically desirable. Given that the use of administrative records in such a manner provides one of the few opportunities to substantially reduce census field costs in 2020, it deserves serious attention in the planned 2010 research, experiments and evaluations.

The use of the Internet for data collection in the decennial census presents important opportunities for cost reductions and improvements in data quality. These include cost savings through the reduction in the number of forms that have to be scanned or keyed for data entry, reduction in the processing of requests for mailing of foreign language questionnaires, and savings in field work as a result of more prompt receipt of individual data. Use of the Internet may also yield quality improvements through easier access to foreign language questionnaires and online editing of census responses. Additionally, failure to allow the use of online response imposes the social cost of the Census Bureau's appearing to be out of step with modern data collection and computing environments.

We recognize that the basic steps to implement an Internet experiment in 2010 are nontrivial. However, the panel is confident that the challenges can be overcome, even within a tight time frame, as they were when the Census Bureau added a limited online response option in 2000. In addition, the Census Bureau's own experience with Internet questionnaire development in the 2000 census can be tapped in the development of privacy safeguards, as can the experience of other countries in developing security protocols for online census response (including the 2006 Canadian census internet option which involved Lockheed Martin as a major contractor).

I would like to close with a brief, general observation of my own. This observation is not based on our Panel's current report, but is certainly not contradicted by anything in our reports. The Census Bureau needs an aggressive, well coordinated, forward looking research program. Such a program requires well-trained and creative personnel with broad authority to initiate research and the expectation of being allowed to follow through to recommend improvements and innovations. This research effort requires high ranking leadership that deserves and gets the attention and respect of the Director of the Census. There should thus be established a stable unit with a reasonable expectation of adequate and continuing funding throughout the decade, and this unit should be responsible for research and development of effective innovations for future decennial censuses and other Bureau surveys and programs.

Thank you for the invitation to testify today. I would be happy to address any questions the Subcommittee might have.

**THE NATIONAL ACADEMIES**  
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Panel on the Design of the 2010 Census Program of Experiments and Evaluations  
 Committee on National Statistics  
 Division of Behavioral and Social Sciences and Education

February 19, 2009

Mr. Thomas L. Mesenbourg  
 Acting Director and Deputy Director  
 U.S. Census Bureau  
 4600 Silver Hill Road  
 Washington, DC 20233

Dear Director Mesenbourg:

This letter relates to plans for tests and experiments planned for the 2010 census. We write to call your attention to several time-sensitive concerns: (1) three crucial topics that should be included in the experimentation during the 2010 census, (2) testing plans preliminary to the census; (3) the retention of 2010 census data, and (4) the designs of the experiments currently planned for 2010.

**Background**

The Panel on the Design of the 2010 Census Program of Evaluations and Experiments (CPEX) has a broad charge:

. . . [to] consider priorities for evaluation and experimentation in the 2010 census. [The panel] will also consider the design and documentation of the Master Address File and operational databases to facilitate research and evaluation, the design of experiments to embed in the 2010 census, the design of evaluations of the 2010 census processes, and what can be learned from the pre-2010 testing that was conducted in 2003–2006 to enhance the testing to be conducted in 2012–2016 to support census planning for 2020. Topic areas for research, evaluation, and testing that would come within the panel’s scope include questionnaire design, address updating, nonresponse follow-up, coverage follow-up, unduplication of housing units and residents, editing and imputation procedures, and other census operations. Evaluations of data quality would also be within scope. . .

Pursuant to this charge, the panel transmitted an interim report providing general priorities for the CPEX program to the Census Bureau in late 2007 (National Research Council, 2008) and plans to issue a final report in fall 2009.

The panel met most recently on November 10–11, 2008. At that meeting, Census Bureau staff briefed the panel about the topics that it had chosen for inclusion in the 2010 CPEX program and presented the outlines of the designs for the experiments to be included in the 2010

census. On the basis of those briefings and subsequent discussion, and given the relatively late timing of our final report in the census experimentation planning cycle, the purpose of this letter is to continue to fulfill our charge by providing timely analysis and recommendations for the CPEX program.

#### **Experimentation During the 2010 Census: Missing Topics**

A key objective of our interim report (National Research Council, 2008) was to suggest priority topics for experimentation during the census. In particular, we urged that the topics chosen for experimentation have a direct bearing on visions for the 2020 census (however preliminary) so that they can serve as a first step for research in the intercensal period. We also explicitly recommended that the 2010 experiments be chosen to examine issues with the potential to achieve substantial cost reductions or important improvements in data quality in 2020.

In November 2008, the panel was informed that the Census Bureau has chosen topics for four experiments to be conducted during the 2010 decennial census: (1) a nonresponse follow-up contact strategy experiment, (2) a privacy notification experiment, (3) an alternative questionnaire experiment, and (4) a deadline messaging and compressed schedule experiment. We are deeply concerned that although the topics selected by the Bureau are of interest, they are not grounded in a vision for 2020, nor are they directly linked to cost or data quality concerns. At the same time, we are concerned that two topics with strong potential effects on cost and quality and overall importance for 2020 that we discussed in our interim report are absent from the Bureau's experimentation plans: Internet data collection and the use of administrative records. We reemphasize that these two areas of research are critically important. In addition, we believe that a very different alternative questionnaire experiment—one that tries multiple approaches to improve collection of census residence information—would be invaluable for the future of census questionnaire design.

**Internet Experimentation** The use of the Internet for data collection in the decennial census presents important opportunities for cost reductions and improvements in data quality. These include cost savings through the reduction in the number of forms that have to be scanned or keyed for data entry, reduction in the processing of requests for mailing of foreign language questionnaires, and savings in field work as a result of more prompt receipt of individual data. Use of the Internet may also yield quality improvements through easier access to foreign language questionnaires and online editing of census responses. Importantly, the use of online response would avoid the social cost of the Census Bureau's appearing to be out of step with modern data collection and computing environments.

An experiment in the 2010 census would provide a unique opportunity for examining the use of the Internet for decennial census data collection. A key issue that needs to be explored in an experiment is how large a fraction of the population can be induced in a census environment to use the Internet as a response option, while not at the same time greatly increasing the possibility of disclosure or incurring other security problems. Therefore, we strongly recommend a 2010 census Internet response experiment to help determine ways to increase the likelihood of Internet response in 2020 and possibly also learn how to minimize any associated negative effects. This test should include a "push Internet" option as one of the experimental treatments whereby the initial mail contact strongly encourages Internet response, perhaps even by

excluding a paper questionnaire from that initial mailing. Such an experiment could also address the quality of the data collected through the Internet, including for those requiring foreign language questionnaires for whom the Internet may provide a convenient multi-language option.

We recognize that the basic steps to implement an Internet experiment in 2010 are nontrivial: the design and testing of an online version of the census questionnaire, the development of protocols that protect census respondents from disclosure of information, and the integration of online returns with other census operations. However, the panel is confident that the challenges can be overcome, even within a tight time frame, as they were when the Census Bureau added a limited online response option in 2000. In addition to the Census Bureau's own experience with Internet questionnaire development in the 2000 census, the experience of other countries in developing security protocols for online census response (including the 2006 Canadian census) can be tapped as the Census Bureau develops privacy safeguards for online response in planning such an experiment.

**Use of Administrative Records** Administrative records offer substantial potential for both census cost reduction and quality improvements. Administrative records could be used to dramatically reduce the cost of nonresponse follow-up and improve the quality of the resulting data collected by avoiding inaccuracies in "last resort" enumerations (often supplied by proxy respondents, such as neighbors or landlords) and by providing higher quality information than is currently supplied by whole-person and whole-household imputation. (An admittedly radical eventual possibility for the use of administrative records would be avoidance of nonresponse follow-up altogether for a large percentage of U.S. households.)

In addition, administrative records could be used to target the implementation of census processes. A key example is that administrative records could identify areas in which the Master Address File (MAF) is deficient, by basing that determination on the difference between the address counts from a merged list of addresses from administrative records and the counts from the MAF, and therefore in need of an address canvass check prior to the decennial census. This approach could dramatically reduce the costs of the currently 100 percent application of the address canvassing operation. One could also use the discrepancy between a household count from the census and that from administrative records to prioritize the implementation of coverage follow-up interviews. Finally, administrative records could be used to assist in reducing the field work in following up nonmatching cases of the P-sample in coverage measurement.

Although wide-scale use of administrative records to substitute for nonresponse follow-up would almost certainly require a change in legislation, the potential benefits of increased use of records in census processes should be studied in order to estimate the extent to which such changes would be economically and statistically desirable. Given that the use of administrative records in such a manner provides one of the few opportunities to substantially reduce census field costs in 2020, it deserves serious attention in the planned 2010 experiments.

It is important to note that most of the above possibilities for research on administrative records might be properly considered priorities for "evaluation" rather than "experimentation" since they would not require additional or special field data collection. (They would, however, require the careful retention of household-level census process data, such as we recommend below.) Yet although a great deal about the utility of administrative records can be learned from post hoc study of data retained during the census, there are potentially useful possibilities for limited, experimental field work in 2010. For instance, with regard to the use of administrative



records as a substitute for late-stage field enumeration, one possible experiment would involve variations in nonresponse follow-up or coverage follow-up protocols under which the number or format of follow-up interviews depended on administrative records information (either on an individual household basis or on an area basis). Such an experiment would involve a significant expansion of the nonresponse follow-up contact strategy experiment (discussed below).

Though “administrative records” in the census context are generally thought to be national-level constructs—drawing information from, for example, Social Security Administration registers—a complete evaluation of records-based methods should also assess the quality of the records maintained by “group quarters” facilities, such as prisons, health care facilities, and college residence halls. Because these facility records were used by census enumerators to count about half of the group quarters’ population in the 2000 census, the National Research Council (2006:Table 7-1, pp. 238-240) suggested that the Census Bureau “undertake a continuing research effort to assess the accessibility of facility records at group quarters facilities and to determine whether the existing data systems meet census data collection needs.” We endorse this suggestion as it is an essential step to assessing the possibilities for using administrative records to supplement or, as necessary, replace traditional enumeration in group quarters. Assessing the alternative or “home” address information available from facility records is also critical to addressing such long-standing questions as the degree to which college students are counted at both their schools and their parental homes and whether it is feasible to define a “home address” for persons under correctional supervision.

**Census Residence** The 2010 census provides a uniquely valuable setting for a comprehensive experiment involving alternative approaches to the current residence rules. The Census Bureau’s proposed alternative questionnaire experiment for 2010 does include one treatment group for gathering a limited amount of information on residence (see below). However, given that unclear residence rules and interpretations were likely a major source of census coverage error (both omission and duplication) in the 2000 census (National Research Council, 2004), the Panel on Residence Rules in the Decennial Census (National Research Council, 2006) suggested various alternative approaches to collecting information on census residence. In particular, that panel’s report proposed a major change from the Census Bureau’s traditional approach of relying on a dense set of instructions at the start of the census form to one of asking a set of guided questions that breaks the large cognitive task of deciding one’s household composition into smaller pieces. At that panel’s urging, the Census Bureau tested a preliminary version of a “worksheet” approach to the residence question in 2005, yet no further work on residence is planned in 2010.

The single treatment group in the proposed alternative questionnaire experiment—anchored to one of the coverage probe questions—falls short of the general “any residence elsewhere” query that the National Research Council (2006) recommended be asked of the general population in a 2010 census experiment and asked of all group quarters (e.g., medical facilities and college housing) residents in the 2010 census itself. The current plans for this limited experiment also do not appear to include the follow-up activities needed to make best use of whatever information might be gained. The proposed single treatment group also falls short of the 2006 report’s suggestion to experiment with a *de facto* or “current residence” question—and add a corresponding *de jure* or “usual residence” question to the American Community Survey—so that differences in estimates between the two programs due to their differing residence standards could be assessed. Innovative (and more accurate) handling of residence

concepts is clearly a research question for which several alternatives need to be tested, and subsequently refined and retested, in order to achieve substantial gains over the Bureau's current approaches.

These three research areas—Internet data collection, the use of administrative records, and questionnaire redesign for residence rules—are ones for which important benefits could be obtained through increases in census data quality or decreases in census costs or both. In the panel's assessment, the 2010 CPEX program should include work on these topics in order to ensure early progress in the 2020 census testing cycle. Therefore, we strongly urge that these topics be included as subjects for experiments in conjunction with the 2010 census.

### **Systems Testing and Simulation Prior to the 2010 Census**

The panel is concerned that the Census Bureau's operational test plans for the 2010 census are insufficient. We are particularly concerned with the Bureau's capacity to identify potential failure modes in the field data collection components of the 2010 census process. We appreciate that the Census Bureau has had to substantially revise its plans for decennial census nonresponse follow-up. Initial plans to use handheld computers for nonresponse follow-up and to have the operational control system for field data collection developed by a contractor have been dropped in favor of a return to a paper-based nonresponse follow-up operation and a return to an operational control system for field data collection that will be developed in house (presumably by revising the system developed for the 2000 census).

Given the complexity of conducting the decennial census, it has long been deemed essential to have a complete test "dress rehearsal" two years prior to the census so that flaws can be detected and corrected. Given the need to redesign the field data collection plan at this late stage, the census dress rehearsal conducted in 2008 was essentially limited to a test of the mailout/mailback portion of the census process, with no testing of the nonresponse follow-up, coverage follow-up operations, or many other component processes.

The Census Bureau acknowledges that the dress rehearsal provided an inadequate test of the 2010 census processes. As a remedy, it has scheduled a number of small field tests of various components and sub-systems of the census process chain to attempt to identify as many potential flaws as possible prior to implementation. However, given that the operational control system for the field data collection system will not be ready until the summer or fall of 2009, the Census Bureau has decided against a comprehensive test of the entire field data collection process due to the lack of time to design and carry out such a test.

The panel believes that this testing strategy puts the Census Bureau in an extremely risky position should there be flaws in the census process that involve interactions of the many components and subsystems. Testing the interfaces between individual components of a system (e.g.,  $A \rightarrow B$ ,  $B \rightarrow C$ ,  $C \rightarrow D$ ) can produce useful information and detect unseen problems. But the Bureau's testing plan creates risks by not adequately testing subsystems (e.g.,  $A \rightarrow B \rightarrow C$ ) or complete systems. Errors at this level may not be evident in any single component test but could result in major delays and impair data quality.

Concern over the lack of time or resources to conduct a more comprehensive test is understandable, but it does not override the compelling argument for carrying out such a test. The Census Bureau needs to perform as full and realistic an operational test of all nonresponse follow-up systems as possible. The consequences of failure to identify substantial problems in the interfaces between system components could be dire, ranging from moderate to severe

impacts on the quality, costs, and timeliness of census counts for important purposes like redistricting and allocation of funds.

The panel strongly recommends that the Census Bureau try to fit into its schedule a comprehensive test of the entire operational control system for field data collection as soon as feasible after plans for this system become available. We recognize the enormous constraints in planning and accomplishing such testing. Because of these constraints, it may well be necessary in the overall testing to simulate portions of the process based on the specifications for information flows at the interface between component parts of the process. If such simulation is judged to be necessary, then additional field testing of the simulated components of nonresponse follow-up should be carried out.

Ideally, tests should be conducted in enough time to detect—and correct—any problems. But if time is too short to allow for a full cycle of test and correction, earlier detection of defects or inefficiencies can still be vital. Even if a flaw is discovered too late to be addressed in a pre-tested, systematic way, some contingency planning will likely be able to greatly reduce any negative consequences for the census itself.

### **Retention of Data**

Since 1985 several National Research Council panels on the decennial census have called for the development of a “master trace sample” database. Such a database would retain the crucial elements of the census procedural history for a sample of addresses to support census evaluation studies. A version of a master trace sample was constructed by the Census Bureau following the 2000 census (Hill and Machowski, 2003). This database supported a small number of studies (e.g., Bentley and Tancredo, 2005; Tancredo and Bentley, 2005; West et al., 2005) that began to realize some of the substantial research potential that such a database could provide.

Our panel’s interim report recommended that “the Census Bureau should initiate efforts now for planning the general design of a master trace sample database and should plan for retention of the necessary information to support its creation” (National Research Council, 2008:Rec. 5). To address the efficacy of less common procedures on small subpopulations, a large sample is clearly needed; we also note that given the greatly decreased cost of computer storage and memory, it may now be possible to save and efficiently access the entire procedural history for the entire country. Whatever the sampling rate, it is critical to retain sufficient data, preserving all relevant linkages, so that the result supports the examination of how the decennial census processes functioned for various subpopulations and domains.

As an example, it is important to retain the information as to which addresses on the MAF were added or deleted by which census address improvement operations. Furthermore, given that many fields of the various system files are overwritten continuously during the census, this means that these data archives should retain snapshots of files that will change during the course of census operations, and this should be provided for as frequently as needed. This data archival effort needs to include all parts of the census process, including address list development, nonresponse follow-up, coverage follow-up, group quarters enumeration, data capture and data treatment, and coverage measurement. In addition, it is vital that the schema used in retaining these data be carefully documented so that it is known precisely what is saved in each data field.

Given the rushed development of the operational control system for field data collection, we are especially concerned that provisions be made for retaining data relating to that part of the

census. We do not believe that providing for this additional functionality in the operational control system for the field data collection will add appreciably to the current challenge of developing such a system in time for the 2010 census. Furthermore, by guaranteeing access to this information, the Census Bureau would ensure that it could carry out evaluations that would guide the Bureau towards a more effective and cost-efficient design for the 2020 census. Therefore, we recommend that—as systems for the 2010 census are finalized by the Census Bureau and its contractors—appropriate archival outlets be created for all systems, including components of the field data operational control system, so that the relevant data to construct a master trace database or “audit trail” of census processes are retained. Experts in automated audit processes could provide assistance to the Census Bureau in implementing a master trace system.

### **Designs for Currently Planned Experiments**

Although we recommend the addition of three topics for experimentation, the Census Bureau’s chosen topics for 2010 experiments do concern issues that may be worth pursuing in addition to our recommended ones. However, three of the four census experiments, as currently outlined, suffer from important defects that will limit their effectiveness. Moreover, the Bureau has not carried out explicit studies of the statistical power of these experiments given their proposed designs. We recognize that the clustering inherent in some of the experimental designs complicates the development of such estimates, but it is also the reason that careful estimates of power are necessary. For each experiment, the Census Bureau needs to undertake a study of the statistical power of the design against reasonable alternatives based on anticipated effect sizes. This should be done not only for national-level comparisons, but also for any relevant subgroup comparisons.

Some of the experiments also do not seem to give appropriate attention to “targeting” or oversampling respondents from relevant sociodemographic groups (or geographic areas with large concentrations of such respondents). Not only does lack of targeting reduce the power of those experiments, but it also hinders the ability to learn more about the response by stratifying the analysis by subgroup.

**The Nonresponse Follow-up Contact Strategy Experiment** The question of interest in this experiment is the impact on census costs and data quality of reducing the number of attempts made in nonresponse follow-up from a maximum of six to either four or five. As currently planned, the experiment will be carried out in three local census offices, comprising about 40,000 housing units. For each office, two treatments and the control will be randomly allocated to crew leader districts, where all enumerators in a district will use the same questionnaire (which provides space for a maximal number of enumeration attempts) but will receive different instructions about how many callbacks to make. To assess the treatments and control, comparisons will be made of the resulting impact on census data quality, measured by the rate of proxy response, the distribution of response outcomes, the item nonresponse rate, and measures of form completeness. The Census Bureau staff have expressed a concern as to whether the findings would be generalizable from the three local census offices, and asked the panel for assistance in selecting local census offices for this experiment. However, our current overriding concern is whether data from only three local office areas can ever be sufficiently generalizable.

In addition to questions about generalizability and statistical power, the panel questions whether the likely reduction in field data collection costs will be sufficient to justify the

allocation of resources for an experiment during the 2010 census. The likely impact on census costs might be fairly modest. In the November meeting, the panel suggested that the cost reduction could be estimated on the basis of the frequency of enumerations in 2000 that were successful on the fourth or fifth attempts. The Census Bureau argued that such estimates are misleading due to infrastructure changes that occur during the taking of the census, such as the laying off of enumerators, consolidation of work, and other changes. The panel countered that estimates based on an analysis of 2000 census data, while somewhat flawed due to such changes, would still provide a sense of whether the potential reductions in field costs would be large enough to justify a separate experiment during the 2010 census. Based on such estimates, if the cost reduction seems likely to be, at best, modest, the experiment should be eliminated or redesigned to include assessment of even fewer enumeration attempts or the use of administrative records in lieu of field data collection.

In considering statistical power, 2000 data could have been used to estimate the percentage of housing units that first failed to return their mailed questionnaire, and then were enumerated in the 2000 census on either the fourth or fifth attempt during nonresponse follow-up. In doing so, it may be discovered that the effective sample size for this experiment is too small to provide sufficient power to identify important differences in the above data quality measures (unless such differences are strikingly large). If it is clear that the experiment will not have substantial power to detect reasonable changes to the census data quality measures, and if a two or three-fold increase in the number of local census offices would provide sufficient power, the sample size should be expanded. If no conceivable sample size can provide reasonable statistical power, the experiment would not be useful and should not be done.

One additional argument in favor of an experiment on this topic, if slightly broadened, is that there is a distinct disadvantage of waiting until six responses are attempted. This disadvantage is that the lag between Census Day and the day of enumeration increases the number of movers and in general reduces data quality and increases the rate of erroneous enumeration. Assessment of this disadvantage, possibly in conjunction with the coverage measurement program, might be very useful.

**The Privacy Notification Experiment** The privacy notification experiment will assess the effect of a message on the cover letter of the mailing package containing the census questionnaire regarding the uses of census data and the possible use of administrative records. The experiment includes two panels of 10,000 sampled households each (plus a control group without such notification), chosen using strata based on levels of mail response in the 2000 census or in the American Community Survey. The assessment of the three wordings will use response rates, data quality measures, and monitoring of public reaction. The hope is to be able to have reasonable power to identify a difference in overall mailback rate of 1.8 percent. (A one percent reduction in mail response is estimated to cost the Census Bureau \$90 million in 2010.)

The panel has three principal concerns with the current design of this experiment. The treatment panels vary only in the wording of one part of the notification message—"Your answers will be used for statistical purposes, and no other purpose" compared with "Your answers will only be used to produce statistics"—raising concerns about how informative the test will actually be regarding individual perceptions of privacy. Second, a longer, second section of the message is identical between the two treatment groups and hints at the possible use of administrative records:

To improve census results, other government agencies may give us information about your household. The additional information we receive is legally protected under Title 13, like your census answers.

If the objective of the experiment is to assess privacy concerns, it would be beneficial to explore other wordings of this second part of the notification. Instead of a single test of a very limited set of alternative statements in 2010, it would be more useful for the Census Bureau to conduct a series of intercensal tests between 2010 and 2020 that would develop a broad sense of people's sensitivity to privacy concerns and use of administrative records. Such a research program should examine this for sociodemographic subsets of the population.

Another deficiency is that the Census Bureau is not using this opportunity to evaluate the implied tradeoff of the costs incurred from the freedom to use administrative records as a result of the inclusion of such a notification and the benefits from being allowed to do so. That is, while the privacy notification may have the effect of reducing mail response rates, it will at the same time allow for the use of administrative records to reduce costs and improve data quality, for example, by substituting for last-resort and proxy enumeration. Therefore, it seems reasonable to use this opportunity to determine the degree to which administrative records can reduce census costs and improve census data quality and whether such benefits offset the reduction in mail response and the associated increase in the costs of nonresponse follow-up. Possibly, this could be done through the separate administrative records experiment noted above, but bundling this as a single experiment may have some advantages, although it would increase the complexity of the currently planned experiment.

**The Alternative Questionnaire Experiment** There are three parts to the proposed 2010 questionnaire experiment: (a) a comparison of the complete set of questionnaire changes between 2000 and 2010, (b) an attempt to collect an alternative residence address based on answers to a coverage probe question, and (c) alternative formats for the collection of information on race and ethnicity. In part (a), 10,000 housing units will receive a 2000-style census questionnaire. Comparisons will be made to the distribution of responses to the full 2010 census to ascertain what changes between 2000 and 2010 are due to changes in questionnaire format. In part (b), 30,000 housing units will be administered an alternative questionnaire that will permit respondents to specify a street address if they indicate that the person in question sometimes lives or stays at another location. In part (c), 30,000 housing units in each of 11 panels will be administered various questionnaire formats for the questions on race and ethnicity. Some of these will present slightly different versions of a combined race and Hispanic origin question (the 2010 census questionnaire itself presents them as separate numbered items). Other treatment groups respond to census advisory committee suggestions by permitting multiple and write-in answers to the Hispanic origin question or varying specific examples that are explicitly mentioned in the question (e.g., Taiwanese or Marshallese). It is planned that cognitive testing will be carried out in advance of the experiment to better refine the various alternatives. The forms will be mailed to a random sample of housing units, and initial nonrespondents will receive a replacement questionnaire that mimics the initial questionnaire. The goal of the experiment is not to identify specific alternative formats, but rather to learn more about the general formats that are preferred in order to fold this information into a longer term research program on questionnaire design.

The goals of parts (a) and (b) are not clear to the panel. Consequently, it is hard to judge whether the experimental designs and sample sizes are suitable and whether the experiments are likely to yield useful results. Although the sample size for part (a) may be sufficient to detect any economically important change in overall response rates between these two forms of the questionnaire, it may not be adequate if one wishes to understand how these changes are related to subgroups of the population, size of family, etc. The sample size is also not likely to be adequate if one is attempting to relate specific changes in response patterns to specific living situations, membership in demographic subgroups, etc. Otherwise, interpretation of any changes in response patterns will be limited due to confounding as a result of the several simultaneous changes to the questionnaire. As a result, the benefits for questionnaire design for 2020 will be reduced.

With respect to part (b) we are concerned about adequate power because it was unclear that 30,000 households would provide a large enough number of alternative addresses to be able to determine whether the inclusion of such a question on the census questionnaire would be able to substantially affect the need for the coverage follow-up interview or the accuracy of such an interview if it appeared to be needed. Therefore, some form of targeting—say of areas with a high frequency of seasonal second homes, or of people living in types of group quarters that frequently involve duplication—would be desirable. Second, it was not clear that this part included sufficient provision for gathering follow-up information so as to determine the usefulness of the additional question. That is, although the addition of any question on the census form has an associated cost of processing and a possible decrease in overall data quality, the inclusion of this question could produce higher quality responses as to census residence and/or it could also affect the frequency of coverage follow-up interviews or their accuracy. Therefore, it is important to include plans in the experimental protocol that would attempt to evaluate this tradeoff, since this should be key to making any decisions about the inclusion of such a question in the 2020 census questionnaire.

The race/ethnicity arms of this experiment (part c) involve fine distinctions in question wording that are most applicable to specific demographic subgroups. In particular, a major emphasis in this section is on Hispanic respondents. Therefore, this experiment would greatly benefit from any efforts to target the delivery of the questionnaire to areas with a larger percentage of Hispanic residents. In addition, given the increased use of bilingual questionnaires in the 2010 census to facilitate response for essentially the same population, it would be useful to extend this experiment to examine the impact of such changes on a bilingual version of the census questionnaire.

**The Deadline Messaging and Compressed Schedule Experiment** The key question of this experiment is whether the rate of mail response could be increased as a result of the use of deadline messaging (namely, the use of a notice on the mailing package that the form is required to be returned by a specific date) or a compressed mailing schedule or both. In the experiment, three sampling strata will be used: high, medium, and low mail response areas. Each of the eight study panels will involve 10,000 households. These eight panels are: (1) control, (2) compressed mailing schedule panel, (3–5) three deadline messaging panels, and (6–8) three compressed schedule combined with deadline messaging panels. The three deadline messaging panels have language of varying degrees of sternness related to delays in mailing back the questionnaire. The analysis will focus on response rates, speed of response, and item nonresponse rates. Our only concern about this experiment is the lack of specification of the statistical power.

In summary, as the Census Bureau finalizes its preparations for the 2010 census, the panel believes that the Bureau faces tremendous risk if it does not perform comprehensive systems testing—focused on the interfaces between individual system components and, ideally, involving some field work component. The quality and utility of 2010 census evaluations will also be seriously impaired if census operational systems are not designed to retain procedural data for construction of a master trace database. The Census Bureau has proposed four experiments to be conducted during the 2010 census, but the panel believes that they suffer from design flaws and, significantly, lack connection to potential visions for the 2020 census. The panel suggests that three topics that are given little or no weight in the current CPEX plan—Internet data collection, use of administrative records in various census processes, and elicitation of accurate residence information—have greater potential to decrease the cost and increase the quality of the 2020 census, and so should be built into the 2010 experimental program.

We hope that the information and recommendations in this letter are useful to the Census Bureau. We would be happy to discuss and explain any of these issues at your convenience.

Sincerely,

Lawrence D. Brown, *Chair*  
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**PANEL ON THE DESIGN OF THE 2010 CENSUS PROGRAM OF  
EVALUATIONS AND EXPERIMENTS**

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**TESTIMONY**

of

**Robert B. Hill, Ph. D.  
Sociologist and Former Chair, U. S. Census Bureau  
Advisory Committee on the African American Population**

on

**“Lessons Learned: How the New Administration Can Achieve  
An Accurate and Cost-Effective 2010 Census”**

before

**U. S. Senate Committee on Homeland Security and Governmental Affairs  
Subcommittee on Federal Financial Management, Government  
Information, Federal Services and International Security**

**Dirksen Senate Office Building, Room 342**

**March 5, 2009**

Mr. Chairman and Members of this Senate Subcommittee, I am pleased to be invited to provide testimony on the topic, "Lessons Learned: How the New Administration Can Achieve An Accurate and Cost-Effective 2010 Census." My testimony will focus on a major lesson learned from prior censuses: the importance of developing strong partnerships and community outreach strategies with hard-to-count populations in order to reduce the minority undercount in the Census.

My initial experience with decennial censuses goes back to 1969, when I was appointed National Director of the National Urban League's 1970 Census Project, which was a nationwide educational outreach program to reduce the Black undercount in the Census. This 1970 Census Project was launched by Whitney M. Young, Jr., the Executive Director of the National Urban League at that time. It was the first national partnership between the U. S. Census Bureau and a minority organization with over 100 branches throughout the nation. The primary purpose of the 1970 Census project, whose slogan was "Make Black Count," was to educate African Americans about the importance of the Census and to encourage them to cooperate with the Census.

Our community outreach project was successful in convincing large segments of the African American community to participate in the 1970 Census. However, post-Census studies revealed that there was still a sizable undercount of African Americans and other minorities in the 1970 Census. We believed that a major reason for the historic undercount of minority groups was the failure of the U. S. Census Bureau to adequately involve minority representatives in the advance planning and implementation of decennial censuses. Therefore, in his testimony to the House Census Oversight Committee in September 1970, Mr. Whitney Young recommended that the Census Bureau establish on-going Minority Advisory Committees to improve its strategies for reducing the Census undercount in hard-to-count communities.

Indeed, in 1975, under the visionary leadership of Vincent Barabba as Director, the Census Bureau formed the first Race and Ethnic Advisory Committees (or "REAC's") to assist the Bureau in planning for the 1980 Census. The initial REAC's comprised four minority groups: African Americans, American Indians, Hispanics and Asians. For the 2000 Census, a fifth group was added: Native Hawaiians and Pacific Islanders. I served as Chair of the African American Advisory Committee in planning for the 1980 Census, the 2000 Census and in the initial planning for the 2010 Census.

Over the years, the Bureau has steadily improved its methods for enumerating the American population and for reducing the undercount among minority groups. While there is still a differential undercount of minorities, its size has steadily declined. For example, while the Bureau estimated that it missed about 1.5 million (or 8%) of African Americans in the 1970 Census, it failed to count about 1.0 million (or 1.84 %) of them in the 2000 Census. But the group with the highest undercount rates in decennial censuses--regardless of their race or ethnicity--are children under 18.

One of the most effective strategies the Bureau has used to reduce the minority undercount in decennial censuses is to develop strong partnerships with minority groups in all phases of census planning and to conduct aggressive education and outreach campaigns in hard-to-count communities. Based on my experiences with prior censuses, I would like to offer some recommendations to achieve a more accurate count of all groups in the 2010 Census.

First, I think it is very important that Congress provides the Census Bureau with adequate resources to undertake the mammoth task of achieving a fair and accurate count of the entire American population. President Obama and members of Congress should be congratulated for including an additional \$1 billion in the President's Stimulus Bill to enhance the Bureau's enumeration activities in the 2010 Census. I was especially pleased that the Bill stipulates that the Bureau can spend up to \$250 million for its Partnership Program and outreach efforts to minority communities and hard-to-reach populations.

Second, because of its comprehensive scope, the Census will directly stimulate this economy by hiring over half a million census takers to work throughout the nation. It is essential that there is an ethnically and racially diverse workforce from the staff in district offices to the enumerators in the neighborhoods and barrios. Members of hard-to-count populations should be adequately represented among the census hires at all levels, and especially among the new Partnership Specialists.

Third, one of the remarkable successes of the 2000 Census was the use of paid advertising to communicate messages and information about the importance of the Census to all groups throughout the nation, regardless of race or ethnicity. The fact that minority-owned advertising firms were extensively used to reach their respective groups played a large part in reducing the undercount in minority communities in 2000.

Fourth, the Bureau should permit the members of its five Race and Ethnic Advisory Committee to play a more prominent role in implementing the 2010 Census, such as recommending Partnership Specialists and Minority Advertising Firms; distributing foreign language census forms; and identifying local sites for training census workers and for serving as Assistance Centers to aid the elderly and other individuals to fill out their census forms.

These are a few suggestions that I have to offer to ensure that the 2010 Census will be one of the most accurate and equitable enumerations in our history. Thank you for this opportunity to share my views on this important issue with this Subcommittee.