

HOW THE LAST TWO PERCENT WAS COUNTED

by Barbara Everitt Bryant

The charge to the U.S. Census Bureau in 1990 to enumerate a national population, using survey research techniques, was a challenge of some magnitude. There is a national expectation of 100 percent coverage for the decennial census, particularly from the mayors and other heads of our nearly 40,000 units of local government. So much political power and money move with the census count that every unit of government wants its own count maximized. If I can give anyone doing survey projects one bit of advice it is: Never take on a group of clients for whom about 27 billion dollars a year of funds move with your results!

In June 1990, following extensive primary data collection activities, which included a mail survey and personal interview follow-up with six callbacks, personal interviews with those with non-mailable addresses, special quarters enumeration and "last resort" interviews with neighbors, postal carriers and landlords not otherwise reached, the US population count stood at 243.2 million. After a series of improvement projects (discussed below) the population count increased 2.2 percent to 248.7 million. And after adding overseas military and federal personnel and dependents, the count, delivered to President George Bush on December 26, 1990 as the basis for congressional apportionment became 249.6 million.

At this point, two new *estimation procedures* were undertaken. One included an estimate based on a Post Enumeration Survey, which produced a population estimate for the country of between 253 to 255 million. The other involved preliminary demographic analysis, which yielded a range of population estimates of between 253 and 257 million. If the mid-point of the latter range is accepted as the actual US population, this means that the basic census enumeration located 96% of the population, while the various improvement projects upped coverage to 98%. While 100% is what we at Census strive for, 96-98% is far better than most large scale surveys ever achieve—and none of them has a sample size on the magnitude of one quarter of a billion people.

Herculian Efforts to Improve the Count

The coverage improvement projects, mentioned above, accounting for the last 2.2 percent of the actual count, are worth describing further. These projects have received relatively little publicity, not because we at the Census Bureau did not want it, but because these are not the kinds of activities which attract media interest. This

final set of large scale coverage improvement projects counted an additional 5.4 million people (See table).

In the first coverage improvement project, units identified as vacant or uninhabitable during the spring follow-up of non-respondents were rechecked in the summer. Of the approximately 8 million vacancies, the recheck showed 7.6% occupied as of Census Day, April 1. Their enumeration added about 1.6 million persons to the count. Of the approximately 2.9 million units previously identified as uninhabitable or non-existent, 5.4% were reinstated as occupied April 1. These conversions added almost one-half million persons to the count.

In the second project, the "**Were You Counted?**" campaign, the Census Bureau initiated a procedure to give anyone who felt overlooked the opportunity to fill out publicly available forms or call toll-free 800 numbers that operated in English, Spanish, and six Asian languages. In all, through the help of the media and thousands of community-based organizations, Census received about 400,000 "Were You Counted?" calls or completed forms. Approximately one-third of them produced uncounted persons, the other two-thirds showed to already have been counted when names were matched with returned census questionnaires.

The third project, **Parolee and Probationer Count Check**, totally new in 1990, was undertaken to identify a group, disproportionately young, male, and minority, who research had suggested may have been missed in earlier censuses. After an unsuccessful first attempt the project was redesigned and produced 400,000 new names.

Projects 4 and 5, **Housing Coverage Check** and **Post-census Local Government Review** were undertaken simultaneously. With a computerized census that captured questionnaire data as returns came in, it was feasible to make additional accuracy checks not possible in earlier censuses. The Census Bureau searched its data bases to identify any blocks or communities where there were any indicators of a possible low count. Based on these data searches, the Bureau decided to recanvass blocks where problems might exist. These blocks represented 15 percent of the nation's housing units.

At the same time, local governments had their second chance to review census housing counts, by block. (The first chance had been before the December 1989-January 1990 mailouts.) This time the 39,000 plus local government units were sent housing and group quarters counts by block to compare with local data. New computer maps for the communities had been sent in July. Local governments were given 15 working days in which to challenge the housing unit or group quarters count for any block.

Measuring Things: Trials of the 1990 Census/Bryant/continued

The feedback from local governments was noisy. Many communities took the counts to be final, although the vacancy recheck, the housing coverage check—in fact all of the coverage improvement projects done after the primary data collection—were still in progress. But, seventeen percent of local governments, including all of the 51 largest cities, challenged some blocks, and eight cities (Atlanta, Boston, Chicago, Detroit, Honolulu, Los Angeles, New York, and Philadelphia) challenged over 2,000 blocks.

Good Research, Poor PR

When the Census Bureau compared the local government challenges with the blocks it had already identified for the housing coverage check, a great deal of overlap was found. By re-canvassing the blocks with an additional 5% of housing units, the Census Bureau could recheck every block in which any city claimed an undercount of two or more housing units, or the Census Bureau found an overcount of five or more, compared with local data.

The re-canvass generated by the housing coverage check and local government review yielded very few new housing units. In spite of all the noise—and I consider the local review a public relations disaster for the Census Bureau—it added only 0.2% of new addresses to the address control file and about 300,000 people to the count. This re-canvass of blocks containing 20% of all housing

units (15% from housing coverage check plus an additional 5% from local review) meant that the hardest-to-enumerate neighborhoods had been canvassed four times (mailout, non-response follow-up, vacancy check, housing coverage or post-census local government review re-canvass).

The coverage improvement project called "miscellaneous" shown in the table and accounting for an additional 2.4 million people is really one or more of the ones previously described. Things cannot be sorted out more precisely until interview records are analyzed in great detail.

Striving for complete population coverage has a price. The 5.4 million individuals added to the total by our various coverage improvement projects cost far more to enumerate than the overall average cost of \$10.40 per person or \$26 per housing unit that is associated with the entire 10-year census cycle budget of \$2.6 billion, which includes initial planning on through production of over 500,000 pages of reports, hundreds of data tapes and CD-ROMs.

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Table 1
Coverage Improvement Projects

<u>Project</u>	<u>Schedule</u> <u>1990</u>	<u>Population</u> <u>Count</u> <u>(in millions)*</u>	<u>Percent of</u> <u>Enumerated</u>
Residential Population Count at the End of Primary Data Collection		243.2*	97.8
1. Recheck of uninhabitable or or nonexistent housing	June-Aug	2.1*	0.8
2. "Were you Counted?"	June-Sept	0.2*	0.1
3. Parolees and probationers count check	Sept-Dec	0.4*	0.2
4-5. Housing coverage check and postcensus local government review	Aug-Oct	0.3*	0.1
6. Miscellaneous ¹	June-Dec	2.4*	1.0
Final Residential Population Count	Dec 26	248,709,873 ²	100.00
Total Population Added From Coverage Improvement Operations		5.4*	2.2

*Note: All numbers expressed as components of the final residential population count are estimates based on preliminary report data from census field office management information systems, or unedited data capture files.

¹This number includes persons added during: the field follow-up and the telephone questionnaire assistance program. Some portion of the remaining adds in this category cannot be attributed to a specific operation without further review and evaluation.

²The population counts set forth herein are subject to possible correction for undercount or overcount. The US Department of Commerce is considering whether to correct these counts and will publish corrected counts, if any, not later than July 15, 1991.