

CONTENTS

Chapter 5. Data Collection

	Page
Introduction	38
Census Mail Operations	38
General Information.....	38
Initial Mailout	38
General	38
Multiunits.....	39
Followup Mailings.....	39
General information	39
Reminder/thank you cards	39
First followup	39
Second followup.....	39
Third followup	39
Fourth followup	40
Fifth followup	40
Postmaster Returns.....	40
Telephone Followup	41
Introduction.....	41
General information	41
Telephone report form	41
Telephone Staff.....	41
Telephone Operations.....	42
Work assignments.....	42
Procedures for telephone followup.....	42
Results	43
Citrus Caretakers.....	43
Background Information	43
1987 Enumeration	43
Nonresponse Survey.....	44
General Information.....	44
Report Forms	45
Mailout.....	45
Response.....	45
Model Drop Survey.....	45
Results.....	45

INTRODUCTION

The Census Bureau's Data Preparation Division (DPD) in Jeffersonville, IN, carried out most data collection activities for the 1987 Census of Agriculture in the 50 States (Puerto Rico, Guam, and the U.S. Virgin Islands were separately enumerated; see chs. 7 and 8 for details) with close supervision and assistance from the Agriculture Division. Mail enumeration was the primary data collection method, carrying out the initial mailing to approximately 4.1 million addresses in December 1987, with one reminder postcard and five followup mailings sent out between mid-January and June 1988. The census also included a telephone followup, beginning in March 1988, of selected nonrespondent cases (those with large estimated annual total value of sales (TVP) of agricultural products, generally \$100,000 or more) and in counties with unacceptably low response (less than 75 percent). The low-response county telephone followup began in May 1988).

In addition to the mail and telephone enumeration of farms and ranches, there was a supplemental census of citrus producers¹ (contacting citrus caretakers for data) in the summer and early fall of 1987.

CENSUS MAIL OPERATIONS

General Information

In the 1982 census, addressees were asked to respond to the initial census mailing by February 15, and the first followup mailing involved sending reminder cards to nonrespondent addresses after that date. For the 1987 enumeration, the Bureau hoped to improve early response by moving up the requested response date to February 1, mailing reminder/thank you cards to all addresses on the mail list before the requested response-due date, and by advancing the schedule for the remaining mail followup operations. The agency mailed the reminder/thank you cards in mid-January 1988; there were five additional mailings to nonrespondents beginning in the first week of February 1988 and at approximately 4-week intervals thereafter. The initial census mailout, and three of the nonrespondent followups, involved complete packages of report forms, instruction sheets, cover letter, and so on, while the others used letters asking for response.

The mail list was organized by State, in eight geographic segments, to more evenly distribute the workload in preparing the followup list, addressing followup letters and packages, and mailing. The States in each segment were as follows:

¹Citrus producers enumerated in the caretaker operation also received census forms by mail so they could report their other agricultural activities.

Segment	States
1	Arizona, California, Colorado, Idaho, Nevada, New Mexico, Oregon, Utah, Washington
2	Montana, North Dakota, South Dakota, Texas, Wyoming
3	Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, North Carolina, Pennsylvania, Rhode Island, Vermont, Virginia, West Virginia
4	Alabama, Georgia, Kentucky, Tennessee, South Carolina
5	Minnesota, Michigan, Wisconsin, Florida
6	Arkansas, Louisiana, Mississippi, Missouri, Oklahoma
7	Alaska, Hawaii, Iowa, Nebraska, Kansas
8	Illinois, Indiana, Ohio

These geographic segments did not correspond to the "regions" established for the design and use of the agriculture census report forms (see ch. 3), or to the standard census geographic "regions" and "divisions" sometimes used in publishing data.² They were, instead, primarily administrative and operational conveniences, with staggered response closeout and mailing dates.

Initial Mailout

General—The Bureau mailed the agriculture census packages between December 16 and 21, 1987. This mailing included approximately 4.1 million addresses throughout the 50 States. The Data Preparation Division (DPD) in Jeffersonville, IN, handled the bulk of the mailings, except for packages for "abnormal" farms (i.e., farms operated by institutions, such as prison farms, research facilities, etc.), which were mailed directly from the Suitland headquarters. The DPD staff labeled the packages mechanically on a flow basis as labels were delivered, and held the packages until all could be mailed simultaneously. The census used third-class bulk rate postage for most of the census packages, employing first-class postage only for mailings

²The nine census geographic divisions each consisted of several States, as follows: *Division 1*: Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont; *division 2*: New Jersey, New York, Pennsylvania; *division 3*: Illinois, Indiana, Michigan, Ohio, Wisconsin; *division 4*: Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota; *division 5*: Delaware, Georgia, Florida, Maryland, North Carolina, South Carolina, Virginia, West Virginia; *division 6*: Alabama, Kentucky, Mississippi, Tennessee; *division 7*: Arkansas, Louisiana, Oklahoma, Texas; *division 8*: Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, Wyoming; and *division 9*: Alaska, California, Hawaii, Oregon, and Washington.

Divisions 1 and 2 made up the *Northeast* region; *divisions 5, 6, and 7*, the *South* region; *divisions 3 and 4*, the *Midwest* region; and *divisions 8 and 9*, the *West* region. The agriculture census data were published at the national, State, and county geographic levels (for 1987, selected data also were published by five-digit ZIP Code), but for other censuses the Census Bureau frequently used regions and geographic divisions, among several other levels of geography, for tabulating and publishing statistics.

to multiunits (i.e., companies or organizations with substantial agricultural operations at more than one location; see ch. 3), abnormals, "births" (i.e., newly identified agricultural operations), postmaster returns (see below), Alaska and Hawaii, and for the reminder/thank you cards. (First class postage was always used on the return envelope included in each report form package.) The quantities mailed, by type, were as follows:

Type	Quantity mailed
Total*	4,095,060
Nonsample (forms 87-A0101 to -A0111)	2,080,183
Sample (excluding abnormals and multiunits)	1,101,747
General sample (forms 87-A0201 to -A0213)	974,253
Must cases (forms 87-A0301 to -A0311)	127,494
Multiunits (forms 87-A0301 to -A0311)	4,895
Abnormals (forms 87-A0301 to -A0311)	1,842
Short form (form 87-A0400)	906,393

*Includes approximately 3,500 "births"—i.e., agricultural operations identified *after* the finalization of the mail list, and mailed census report forms on a flow basis as they were identified.

The initial mailing packages each contained the form 87-A01(L1) cover letter requesting response, the appropriate report form, the form 87-A01(I) information sheet (form 87-A02(I) for Hawaii), and the form 87-A8 return envelope, and any special instructions sheets (used for known feedlots, nurseries, specified animal specialties, and so on).

Multiunits—Report forms for the 4,895 identified multiunit establishments were part of the initial mailout to over 4 million addresses on the initial agriculture census mail list. A special multiunit processing group in the DPD conducted mail and/or telephone followups of multiunit cases.

Followup Mailings

General information—Private contractors assembled the mailing packages for the followup mailings and delivered them to the Jeffersonville, IN, facility for labeling and mailout on a flow basis. The Bureau employed the same methods used for addressing the packages for the initial mailout to prepare each followup mailing and applied identical quality control procedures for the label printing operation. (See ch. 3 for details of the label printing and package assembly operations.)

The following table summarizes followup mailings for the 1987 census:

Type	Reminder/ thank you card	First (report form)	Second (letter only)	Third (report form)	Fourth (letter only)	Fifth (report form)
Total	4,089,721	1,765,246	1,231,493	957,048	751,075	658,168
Nonsample	(X) 866,035	(X) 469,414	(X) 333,676			
General sample	(X) 448,606	(X) 253,504	(X) 171,647			
Must	(X) 67,752	(X) 39,588	(X) 23,928			
Short	(X) 382,853	(X) 194,542	(X) 128,917			

(X) Not applicable.

Reminder/thank you cards—The DPD mailed form 87-A01(L2) reminder/thank you cards to all the addresses (except abnormals) on the initial census mail list. Addresses were imprinted on the cards as equipment and staff became available after the initial addressing and mailing operation was completed, and the cards were held until all were ready for the mailout. The requested due date for response to the census mailing was February 1; the Jeffersonville office mailed 4,089,721 reminder/thank you cards on January 19, 1988.

First followup—By the first week of February, response to the mail census approached 55 percent, and the nonresponse followup process began. The first mail followup involved mailing complete census packages to addresses on the mail list still nonrespondent by a specified closeout date (which varied by segment from February 5 for segment 1 through February 17 for segment 8). After the closeout dates for this and succeeding followups, the staff identified nonrespondent list addresses from the mail list and printed address labels. The 1,765,246 mailing packages each contained the appropriate report form and instruction sheet, the form 87-A01(L3) (the form 87-A02(L3) through -A02(L7A) letters were used in the respective followups for Alaska and Hawaii) followup letter, and a return envelope. The Jeffersonville staff labeled and mailed the followup packages on a flow basis from February 16 through February 23.

Second followup—The second followup used the form 87-A01(L4) letter to request addressees to respond to the census. Closeout dates, by segment, for response to the second followup ranged from March 7 through March 16 and address labels were printed and the letters mailed on a flow basis from March 16 through March 22. The followup mailings totalled 1,231,493 packages.

Third followup—The Census Bureau used complete report form packages in the third followup mailing, each package comprised the appropriate report form, instruction sheet, and return envelope, and the form 87-A01(L5) cover letter requesting prompt response and including excerpts from Title 13, United States Code, on the legal requirement for

response and the confidentiality of the data. Closeout dates for the geographic segments ran from April 4 through April 13, and the DPD mailed the 957,048 followup packages beginning on April 11 and finishing April 21.

Fourth followup—The fourth followup was the second “letter” followup. Form 87-A01(L6) letters asked for response and reminded the addressees that response was required by law. The closeout dates by segment extended from May 9 through May 12 (two segments were closed out each day), and the mailing (May 16-19) consisted of 751,075 letters.

Fifth followup—By the first week of June, the census had achieved an overall mail response rate of slightly over 83 percent. The fifth and final mail followup was carried out during the second week of June. The response closeout dates for the geographic segments ran from June 6 through June 9 (two segments were closed out per day). The mailing package for this followup included the appropriate report, instruction sheet, return envelope, and the form 87-A01(L7) letter that reminded addressees of the legal requirement for response, and listed a toll free telephone number (except for the -A02(L7A) letters for Alaska and Hawaii) for use by respondents who needed assistance. A total of 658,168 packages were mailed (June 14-21) to addresses still considered nonrespondent.

Postmaster Returns

Postmaster returns (PMR’s) are mailing packages returned by the Postal Service as undeliverable as addressed. The DPD processing staff in Jeffersonville identified PMR’s during the receipt and check-in phase of the processing operation (see ch. 6 for details) and prepared mailing packages for remailing. These packages contained the appropriate report form, instruction sheet, and return envelope as in the initial mailing package, but a form 87-A01(L1A) cover letter replaced the original form 87-A01(L1) letter, and the form 87-A7C (First Class) outgoing envelope was used.

The census plans called for remailing only “first-time” PMR’s, and originally scheduled only two closeout dates—January 25 and February 24; however, a third closeout (March 10) was added to allow remailing PMR’s for which name and address corrections had not been applied to the address list in time for the second closeout. A total of 202,366 PMR packages was mailed. (See table 5-8 for details.)

Table 5-1. 1987 Census of Agriculture Mailout: December 16-21, 1988

Type	Quantity
Total	4,095,060
Nonsample (forms 87-A0101 to -A0111)	2,080,183
Sample (excluding abnormals and multiunits)	1,101,747
General sample (forms 87-A0201 to -A0213)	974,253
Must cases (forms 87-A0301 to -A0311)	127,494
Multiunits (forms 87-A0301 to -A0311)	4,895
Abnormals (forms 87-A0301 to -A0311)	1,842
Short form (form 87-A0400)	906,393

Table 5-2. Reminder/Thank You Card (form 87-A01(L2))

Date	Quantity
January 19, 1988	4,089,721

Table 5-3. First Followup: February 16-23, 1988 (report form)

Segment	Check-in closeout	Total	Non-sample (forms 87-A0101 to -A0111)	General sample (forms 87-A0201 to -A0213)	Must (forms 87-A0301 to -A0311)	Short (forms 87-A0400)
Total	-	1,765,246	866,035	448,606	67,752	382,853
1	02/05/88	246,773	103,148	56,793	14,200	72,632
2	02/08/88	271,110	160,488	71,251	11,146	28,225
3	02/09/88	229,114	99,369	60,382	9,337	60,026
4	02/10/88	251,839	103,128	64,656	7,950	76,105
5	02/11/88	201,293	98,535	58,268	7,914	36,576
6	02/12/88	247,439	132,948	57,820	7,636	49,035
7	02/16/88	163,367	91,973	43,719	5,439	22,236
8	02/17/88	154,311	76,446	35,717	4,130	38,018

Table 5-4. Second Followup: March 16-22, 1988 (letter)

Segment	Closeout date	Quantity mailed
Total	-	1,231,493
1	03/07/88	155,086
2	03/08/88	187,760
3	03/09/88	161,106
4	03/10/88	181,565
5	03/11/88	145,203
6	03/14/88	179,233
7	03/15/88	113,877
8	03/16/88	107,663

Table 5-5. Third Followup: April 11-21, 1988
(report form)

Segment	Check-in closeout	Total	Non-sample (forms 87-A0101 to -A0111)	General sample (forms 87-A0201 to -A0213)	Must (forms 87-A0301 to -A0311)	Short (form 87-A0400)
Total		957,048	469,414	253,504	39,588	194,542
1	04/04/88	118,416	49,113	28,286	7,279	33,738
2	04/05/88	151,745	88,790	41,588	6,855	14,512
3	04/06/88	120,626	52,080	33,031	5,089	30,426
4	04/07/88	139,921	56,434	37,692	5,074	40,721
5	04/08/88	111,914	55,489	33,145	4,537	18,743
6	04/11/88	140,499	74,053	34,459	4,868	27,119
7	04/12/88	91,672	51,947	25,326	3,444	10,955
8	04/13/88	82,255	41,508	19,977	2,442	18,328

Table 5-6. Fourth Followup: May 16-19, 1988
(letter)

Segment	Closeout date	Quantity mailed
Total	-	751,075
1,2	05/09/88	210,485
3,4	05/10/88	201,334
5,6	05/11/88	203,438
7,8	05/12/88	135,818

Table 5-7. Fifth Followup: June 14-21, 1988
(report form)

Segment	Check-in closeout	Total	Non-sample (forms 87-A0101 to -A0111)	General sample (forms 87-A0201 to -A0213)	Must (forms 87-A0301 to -A0311)	Short (form 87-A0400)
Total		658,168	333,676	171,647	23,928	128,917
1,2	06/06/88	182,717	94,957	48,059	9,225	30,476
3,4	06/07/88	175,264	76,020	45,636	5,521	48,087
5,6	06/08/88	181,128	93,710	49,431	6,689	31,298
7,8	06/09/88	119,059	68,989	28,521	2,493	19,056

Table 5-8. Postmaster Return (PMR) Mailings

Mailings	Closeout date	Mailout date	Quantity mailed
Total	-	-	202,366
First	01/25/88	02/03/88	142,171
Second	02/24/88	02/28/88	45,327
Third	03/10/88	03/15/88	14,868

TELEPHONE FOLLOWUP

Introduction

General information—The telephone staff was part of the DPD at the Jeffersonville, IN, facility. Agriculture census telephone operations began in January 1988, as soon as respondents began to receive report forms, and continued until completion of telephone followup of nonrespondent or incomplete cases in September 1988.

The cases referred to the telephone staff for resolution included (1) data referrals from the technical review staff in the processing office, (2) large nonrespondent cases (those with estimated value of annual agricultural product

sales of \$100,000 or more, or with 1,000 acres or more [depending on the State]), and (3) a sample of the general nonrespondent list (used for the Nonresponse Survey); and, after May 1988, nonrespondent addresses in certain low-response counties. Initial planning projected a total telephone followup workload of about 132,000 cases; in actual operations, the telephone unit received approximately 154,000 cases for followup, including 71,000 large nonrespondents, and handled some 73,000 inquiries from respondents.

Telephone report form—The telephone enumeration staff used the Form 87-A0314, Telephone Enumeration Report, to record data collected from nonrespondents contacted in the telephone followup. Items appeared as questions to be read to the respondent, with skip instructions that told the interviewer when to skip over nonapplicable items. The form also had space for recording the telephone number called, number of calls attempted, and the name of the interviewer who completed it.

The Census Bureau based the telephone report form on the sample report form used for the mail enumeration, although the telephone form reverted to generalized crop and livestock listings in place of the regionalized lists on the sample forms. The form 87-A0314 was a 10-page, 10 1/2" x 14" booklet, with pages 8 and 9 on a half-page fold, and was used for telephone cases in 48 States (Alaska and Hawaii were excluded from the telephone followup).

Telephone Staff

The Data Preparation Division (DPD) office at Jeffersonville, IN, included a staff and facilities for carrying out telephone enumerations and surveys. DPD and Agriculture Division activated the telephones for the 1987 Census of Agriculture during the first week of January, first to handle incoming calls for assistance from respondents, and referrals; then, from March through September 1988, to carry out telephone followup to selected large nonrespondent census cases, and to nonrespondent cases from census-related surveys.

While a small staff was trained and began handling incoming calls in early January 1988, the bulk of the interviewers did not join the unit until March, when telephone followup of large nonrespondents began. By the end of March, there were 91 people in the telephone unit, including supervisors and lead clerks, and it reached a maximum strength of 194 persons in July. Agriculture Division statisticians trained the telephone enumeration staff on a continuing schedule, onsite at Jeffersonville, beginning the first week of March. Each group of interviewers received 6 hours of classroom training covering telephone interviewing techniques, agricultural terms, and completing the agriculture census telephone enumeration report form, followed by 2 hours of instruction on the written procedures—the latter given in the work area by the shift supervisor.

The staff was organized in four shifts; the shifts and typical staffing levels during the most active period of the telephone followup were as follows:

Shift	Times	Inter-viewers	Lead clerks	Super-visors
Total		152	10	3
Day	7:00 a.m.-3:30 p.m.	75	4	1
Middle	12:30 p.m.-9:00 p.m.	5	1	1
Night	3:30 p.m.-12:00 p.m.	59	5	1
Part time	5:00 p.m.-9:00 p.m.	13	-	-

Members of the Agriculture Division provided expert assistance, as needed. Calls were made between 7:00 a.m. and 9:00 p.m. local time (i.e., in the nonrespondent's time zone).

Telephone Operations

Work assignments—The telephone unit (1) resolved “problem referrals” (i.e., cases with inconsistent, incomplete, or obviously incorrect information) from the correspondence and technical review staffs, and (2) followed up large nonrespondent cases³ and other nonrespondent cases as assigned. The first problem referral cases arrived at the telephone unit immediately after operations began, while large nonrespondent cases initially selected for telephone followup arrived in March, after the first mail followup. In May, the processing staff referred 1,862 delinquent cases, in 63 “low response” counties (i.e., with response rates below 75 percent), to the telephone unit for followup.

The telephone staff used the regular central telephone exchange system serving the Jeffersonville office. Up to 122 telephone instruments were assigned to the telephone operation—89 for outgoing, 33 for incoming, calls. (Letters mailed with the census report forms included an “800” telephone number for respondents to call for assistance.) The telephone exchange system normally used the Federal Telecommunications System (FTS) lines available at Jeffersonville for outgoing calls; otherwise, the system automatically switched the outgoing call to one of the Wide Area Telecommunications System (WATS) lines reserved for the agriculture census followup.

Procedures for telephone followup—The Agriculture census staff compiled the initial telephone followup file for three States—Delaware, Maryland, and Wisconsin—on

³A “large” nonrespondent case was defined based on the estimated total value of agricultural products sold, or on total acreage, with the requirements varying by State. For most States, either a total value of products (TVP) sold of \$100,000 and/or 1,000 acres qualified an operation as “large.” In some States, particularly in the Midwest, the requirements were raised to either a TVP of \$150,000 or a minimum acreage of 2,000. In three States—Illinois, Iowa, and Nebraska—the minimum TVP required for telephone followup was \$200,000 while in five other States—Kansas, Montana, North Dakota, South Dakota, and Texas—the minimum was 3,000 acres if the case did not meet the minimum TVP requirement.

March 1, 1988, after the first mail followup, and transmitted the label information to DPD's computer for printing a set of address labels. The agriculture census staff continued to compile files of delinquent large-farm cases, by groups of States, periodically during the followup operations, and transmitted them to the DPD office on a flow basis. The labeling staff affixed labels to each Form 87-A0314, Telephone Enumeration Report, by machine and delivered the cases to the telephone staff. The first labeled forms for Delaware, Maryland, and Wisconsin were delivered on March 9, 1988, and followup calling began. Referral cases arrived at the telephone unit from the agriculture analysts in the correspondence and problem-solving units. Cover sheets attached to each referral case described any problem with the case and specified questions to be asked of the respondent if and when contacted by the telephone staff. Most nonrespondent and problem referral cases had telephone numbers, and any that did not were left in the work units until the telephone followup staff was able to call directory assistance to obtain numbers.

The nonrespondent cases were kept in State sequence, and the telephone staff periodically reviewed the check-in status of each case by using interactive computer terminals. Any case with a check-in status indicating mail received was removed from the followup operation. The nonrespondent cases were then batched into work units (of approximately 15 each), which were distributed to the telephone interview staff, one or two work units per interviewer per shift, depending on the rate of case completion.

Each interviewer called the nonrespondents in his/her assigned work unit and attempted to complete the cases. Only three call outcomes were considered completed reports:

1. In scope, with data (I/S)
2. Out of scope—i.e., the nonrespondent operation did not qualify as a farm (O/S)
3. The respondent claims to have completed and returned a report form (“claims filed”—C/F)

Any other results, such as refusals to provide the data, “will file’s,” requests for another report form, no answer at the number called, no telephone number available, awaiting response from respondent, and so on, remained in the telephone unit to be tried again. The interviewer noted the date and time of each call to each nonrespondent case and the nature of the conversation—if any—on the corresponding report form. Interviewers attempted to complete a report form for each nonrespondent called. When the subject indicated a willingness to cooperate but asked the interviewer to call back, the interviewer marked the date and time of the first call, and the best time to call back, in the reserved space on the report form and set the case aside for a later call. If no response could be obtained (two attempts were made for refusals, four for “no answer when called” cases), the interview staff referred the case for secondary-source followup.

The purpose of the secondary-source operation was to obtain information required to determine the farm status of all cases that were not completed by respondent contact, including refusal and "no telephone number listed" nonresponse cases, as well as "no answer," "will file," "unavailable," and so on. The telephone control unit sorted referred cases into State and county groups, using the CFN, and assigned each county group to a telephone interviewer, who contacted the appropriate county Agricultural Stabilization and Conservation Service (ASCS) office of the U.S. Department of Agriculture to try to obtain necessary data. Prior to contacting the ASCS office, telephone interviewers reviewed the (still blank) labeled reports and sorted them into two groups—those for addresses that had been inscope in the 1982 census and for which data had not been imputed from historical data in 1982, and all others (i.e., cases that were identified as inscope in 1982 and were imputed from previous census data, or cases without previous census history). For the 1982 inscope cases, telephone interviewers asked the ASCS offices only those questions needed to determine whether the cases were in or out of scope; inscope cases were given a census use code and the computer was used to replicate selected data from the 1982 data file. For all other cases, interviewers tried to collect the basic information needed from ASCS or other secondary sources.

Secondary-source reports coded for computer replication of 1982 data were sent directly to the batching unit to be batched for data keying. Reports with 1987 data collected went to the agricultural coverage unit for prekey review before being forwarded to the batching unit. Telephone control clerks updated the check-in status for cases identified as out of scope using the interactive computer processing system in the telephone control unit, then sent the report forms for those cases to central files.

The telephone staff also conducted followup calls to approximately 12,000 nonrespondent cases from the Nonresponse Survey and 3,500 more for the Classification Error Study, beginning in the first week of May and continuing through September 1988. The telephone staff used the standard Form 87-A46, Nonrespondent Sample Survey, and Form A90, Classification Error Study, questionnaires. Control clerks affixed a Form 87-A82, Telephone Record Label, to each questionnaire to provide space for recording telephone call information. The A46 and A90 report forms were referred to the evaluation unit for processing.

Problem referral cases that were resolved by the telephone staff were returned to the originating unit to continue processing. Referral cases not resolved were returned to analysts for further review.

The control clerks on each shift batched completed inscope telephone followup cases and routed them to the check-in unit, which entered the check-in status, then forwarded the cases to the agriculture coverage unit for prekeying review.

Results—Altogether, the telephone staff completed approximately 154,000 cases by interview, and handled over 73,000 incoming calls from respondents. The totals for each type of telephone case were as follows:

Completed Telephone Cases by Type		Incoming Telephone Calls	
Type	Total	Purpose	Total
Total	153,860	Total	73,307
Referrals	7,157	Request for assistance	3,067
Large farms	71,252	Request for time extension	1,937
Nonresponse Sample Survey	11,898	Request for materials	11,762
Low-response counties	1,884	Claims filed	32,755
Multiunits	336	Out of scope	16,912
Secondary sources	36,836	Other	6,874
Classification Error Study cases (form A90)	3,497		
Advertising and Response Behavior Survey (ARBS)	*21,000		

*Estimated ARBS cases added to the regular telephone followup workload. See ch. 10 for further information on the ARBS.

CITRUS CARETAKERS

Background Information

While general agriculture censuses had been carried out by mail since 1969, the Census Bureau continued to collect data by direct field enumeration for selected citrus caretakers in several States. This methodology avoided the difficulty of identifying and enumerating absentee grove owners, who frequently employed caretakers for their groves (a citrus caretaker is an organization or individual caring for, supervising, or managing citrus groves for owners), and usually did not have the information available to complete the report form.

A special field operation was introduced to collect data on citrus caretakers in the 1964 agriculture census, when those in Florida received special attention in an effort to improve overall coverage of the citrus groves. Field interviewers completed a report form for each caretaker, asking for a list of grove owners' names and addresses and the acres owned by each. The staff matched the owners' names and addresses to the respondent file to eliminate duplicate reports. Direct canvassing of caretakers continued in the following censuses, with coverage extended to include Texas in the 1974 and later enumerations, and Arizona from 1978.

For the 1987 census, the agency used the field enumeration for citrus caretakers in Arizona, Florida, and Texas, where their employment was widespread, and they generally were the most reliable sources of data. Individual caretakers' activities varied considerably in scope; some were responsible for the entire care and management of the groves while others performed only selected grove work, and many did not do the harvesting.

1987 Enumeration

For the citrus enumeration, there was a special version of the standard report form—87-A0215, Citrus Caretakers—that dropped the standard crop and livestock

sections and substituted a section for reporting acres in citrus groves and other orchards. It asked for data on the specific type of citrus, number of trees or vines of bearing or nonbearing age, acreage in citrus, and quantity harvested. The report form had write-in sections for other crops or livestock raised, as well as the sections included in the "sample" forms used in the regular census.

The Agriculture Division compiled a list of citrus caretakers from various administrative records and mailed the census report forms, along with a cover letter, instruction sheet, and return envelope, to identified citrus caretaker operations in Texas in May 1987, to Florida caretakers early in September, and to those in Arizona later in September. Caretakers were asked to look over the report form, complete it if possible, and hold it until a member of the field staff visited to either pick up the completed form, or complete it by interview. This mailing schedule meant that followup visits by field enumeration staff—planned for about 2 weeks after completing the mailout to each State—occurred when the caretakers' workload was lightest and information from the 1986-87 harvest season was available.

The field interviewers assigned each caretaker a "caretaker number" after completing each interview and filling out the report forms, and asked the caretaker to inform his or her grove owners that they should (1) mark "citrus reported by caretaker #" on any regular census report form they might receive, and (2) be certain to supply any data requested for any other agricultural operations they might have. The Bureau matched the list of grove owners' names obtained from each caretaker to the "status report list" of the regular census, and where duplicate reports were identified, the owners' citrus data were deleted from the file. During the census processing, report forms containing remarks about a citrus caretaker were referred for matching to the list of caretakers to delete the grove owner's citrus data from the report.

The number of citrus caretakers, approximate number of grove owners they served, and approximate citrus acreage included in their operations, by State, were:

State	Caretakers	Grove owners	Citrus acreage
Total	92	3,975	196,500
Arizona	7	175	12,000
Florida	65	3,000	170,000
Texas	20	800	14,500

Those citrus operations not associated with caretakers in these selected areas and in other States (e.g., California) were included in the regular census data-collection effort that began in December 1987.

NONRESPONSE SURVEY

General Information

The Bureau surveyed a sample of census nonrespondents to "inflate" the data from respondent farms to represent "all farms," including farms that did not respond to the

census. Farms with acreage and/or TVP exceeding the limits set in their particular State were subject to 100-percent telephone followup (see Vol. 1, *Geographic Area Series*, app. C, for details of the statistical estimation methodology and the reliability and coverage estimates for each State), and were excluded from the sample, together with all must, abnormal, and Alaska addresses. The specific limits varied from State to State; the TVP from \$100,000 to \$200,000, and the acreage from 1,000 to 3,000 acres.

The Bureau selected the Nonresponse Survey sample from the 1987 agriculture census check-in file, and stratified the eligible file based on expected value of sales, information from previous censuses, and form type. The stratum codes assigned were:

Stratum	Description
1	Nonrespondent short form cases.
2	Nonrespondent, nonshort form cases with 1987 estimated TVP less than \$2,500.
3	All nonrespondent, nonshort form cases with 1987 estimated TVP of \$2,500-\$9,999.
4	All nonrespondent, nonshort form cases with a 1982 census inscope source combination code and 1987 estimated TVP of \$10,000 or more.*
5	All nonrespondent, nonshort form cases with no 1982 census inscope source combination code and 1987 estimated TVP of \$10,000 or more.*

*Since TVP cutoff levels for telephone followup varied by State, the mail size codes included in these strata also varied.

The staff used a single stage systematic sample of the eligible records in each State to select a total of 27,109 addresses for the survey. The sample was selected from the nonrespondent list for each State, with sampling intervals calculated to produce a sample large enough to make reliable State estimates. Sample selection was completed for groups of States at five points during the processing, depending on the census data collection close-out dates for the States involved. The States in each group were as follows:

Group	States
1	Delaware, Maryland, and Wisconsin
2	Connecticut, Illinois, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont
3	Colorado, Indiana, Iowa, Missouri, Michigan, New Jersey, New York, Ohio, Oregon, Pennsylvania, Virginia, Washington, West Virginia, and Wyoming
4	Alabama, Arizona, Arkansas, California, Idaho, Kansas, Kentucky, Minnesota, Montana, Nebraska, Nevada, New Mexico, Tennessee, Texas, and Utah

Group States

5 Florida, Georgia, Hawaii, Louisiana, Mississippi, North Carolina, North Dakota, Oklahoma, South Carolina, and South Dakota

Report Forms

The survey employed two versions of the report form; the form 87A46(A) was a four-page folder that included a cover letter explaining the need for the survey and requesting the addressees' cooperation as its first page, followed by a series of items requesting basic production and inventory information (this basic format had been used in previous nonresponse surveys). The form 87-A46(B), also a four-page form, asked for the same data as the (A) version, but used a separate cover letter. The staff used the two versions to determine if one or the other obtained better response from farmers, sending (A) versions to half of each stratum and (B) versions to the other half. There appeared to be no difference in the response levels obtained by the two versions of the form, but no statistical tests were carried out to substantiate this conclusion.

Mailout

The DPD staff prepared, labeled, and mailed survey packages for each group of States as sample selection was completed for that group. The mailing dates and total report forms mailed, by State group, were:

Mailout date	Group	Quantity mailed
Total	–	27,109
04/05/88	1	983
04/13/88	2	2,134
05/04/88	3	2,827
06/08/88	4	3,106
07/13/88	5	18,059

Respondents to the survey mailed their forms to the Jeffersonville, IN, office, where they were checked in and processed.

Response

Mail response was not overwhelming; the Bureau received 3,820 completed report forms (1,941 A46(A) and 1,879 A46(B) versions), together with 31 PMR's. Approximately 12,000 delinquent Nonresponse Survey cases were referred to the telephone staff for followup, while about 8,500 more were telephoned by the AGR staff from Suitland. Telephone followup obtained 20,415 responses, for total receipts of 24,266. While slightly less than half of the receipts represented inscope agricultural operations, all were used to develop the imputation estimates. (For more information on imputation for nonresponse, see ch. 6.)

MODEL DROP SURVEY

In April 1988, the Census Bureau carried out the Model Drop Survey—a sample survey of addresses deleted from the 1987 agriculture census mail list—to evaluate the efficiency of the classification-tree methodology used in its statistical modeling of the 1987 census mail list. (See ch. 10 for more information on this evaluation.) The national sample frame consisted of five strata (A through E), defined by specified source combinations and estimated size. Each stratum consisted of addresses believed to represent similar kinds of records, based on expected sizes and on the sources from which the addresses had been drawn. Strata A through D were records removed from the mail list due to statistical modeling used to identify probable nonfarms. (See ch. 3 for more information on the statistical modeling used in preparing the census mail list.) Stratum E records were those that the modeling suggested should be included, but that Agriculture Division staff deleted for “subjective” reasons (e.g., expectation that particular types of operation would qualify as farms). The Suitland office staff drew systematic samples of approximately 1,000 addresses from each of the five strata, and mailed survey packages (each consisting of a Form 87-A90, Census of Agriculture Classification Error Survey, a cover letter explaining the survey and requesting response, and a return envelope) to a total sample of 5,339 cases on May 18, 1988. Two mail followups, each using complete survey mailing packages, were carried out to 3,216 and 2,400 nonrespondents during the first and last weeks of June, respectively. The Agriculture Division staff contacted approximately 900 of the remaining nonrespondent cases in a telephone followup conducted between August 4 and August 19, 1988.

A total of 2,643 responses (49.5 percent) were obtained, but only 2,471 of these could be classified as farm or nonfarm. The remaining 172 were postmaster returns.

RESULTS

The 1987 Census of Agriculture achieved an overall response rate of 86.2 percent (excluding PMR's), obtaining responses from approximately 3,404,000 addresses, out of a total mailing of some 4,095,000. Postmaster returns accounted for an additional 148,000 cases. Telephone followup accounted for over 110,000 completed cases—73,472 from interviews with respondents and 36,836 from secondary sources.

The census published data for 2,087,759 agricultural operations that met the census definition of a farm. These operations represented over 964 million acres of land in farms; a value in land, buildings, and equipment of almost \$690 billion; and \$136 billion in total value of sales of agricultural products.