

callbacks had been completed, the mailing of letters and questionnaires to nonresident and other farm operators for whom agriculture questionnaires had not been obtained, the checking of the list of specified farms to insure the complete enumeration of such places, and the preparation of a special summary by enumeration districts for the number of agriculture questionnaires, land in farms and, in some areas, for the county, the acreage of selected crops—corn, wheat, cotton, tobacco, or rice. The special summary contained comparative data by enumeration districts from the 1950 Census of Agriculture for the number of farms and land in farms and, also, check data for the acres in 1954 for the county for selected crops. The check data on the acreage of selected crops in 1954 for wheat, corn, cotton, tobacco, or rice were obtained from the Commodity Stabilization Service of the U. S. Department of Agriculture and represented the measured acreage before harvest.

The special summary for all the enumeration districts in each county was reviewed by the field processing office supervisor and then sent to Washington for approval before the Census in a county was considered acceptable. Whenever the review of this special summary indicated that the enumeration was incomplete, then a complete check was made of the map and other materials submitted by the enumerator and in case there was evidence of underenumeration, another enumerator was employed to check and complete the enumeration. On the basis of the review of this survey, further checking was required in 799 counties.

OFFICE PROCESSING

In order to compile the statistics contained in the various reports for the 1954 Census of Agriculture, it was necessary to perform a series of processing operations. Part of these processing operations were performed in the operations offices established for this purpose in Detroit, Michigan, and Pittsburg, Kansas, and the remaining processing operations were performed in the Washington, D. C., office. A brief description of these processing operations follows. A more detailed description will be found in Part 12 of Volume III of the reports for the 1954 Census of Agriculture.

Receiving and packaging of questionnaires.—Before being transferred from the 26 Field Processing Offices to the two Census Operations Offices, the agriculture questionnaires were arranged by counties and enumeration districts within counties. At the Operations Offices the questionnaires in each county were arranged by minor civil divisions within the county, counted, and placed in labeled portfolios containing approximately 400 questionnaires each. Questionnaires were kept in this arrangement during office processing.

Checking, editing, and coding.—Each individual questionnaire was checked, edited, and coded by clerks. The checking consisted of seeing (1) that the questionnaires were completely filled out; (2) that the acreage of individual crops harvested was in reasonable agreement with the acreage of cropland harvested when 100 or more acres of cropland harvested were reported; (3) that the acres of land classified according to use accounted for the entire farm acreage for farms having 200 acres or more; (4) that the total of the acreage for the various uses of corn, sorghum, soybeans, cowpeas, and peanuts was in reasonable agreement with the total acreage reported for all purposes for each of these crops; (5) that the age and sex breakdown for cattle, hogs, and sheep added to approximately the total number of such animals of all ages; and (6) that all entries for related items were reasonably consistent.

Editing consisted of the identification and withdrawal of questionnaires filled for places not qualifying as farms; the selection of questionnaires with entries of unusually large size for review by the technical staff; the selection of groups of questionnaires with common reporting errors in an individual enumeration district for referral to technical personnel for review; and the correction of obvious inconsistencies, such as reporting in an incorrect unit, or reporting in an improper place on the questionnaire. Entries determined to be in error were referred to the technical staff and corrected on the basis of relationships existing on nearby farms, or, if the entries were large, on the basis of correspondence with the farm operator. In case of information missing for a group of questions, estimates were prepared on the basis of adjacent questionnaires for farms with similar operations

and, in some cases, on the basis of information obtained by mail from the farm operators. When estimates were made, letters were mailed to the farm operators to verify the information and, if the estimates were not in reasonable agreement with the information contained in the replies, the entries were corrected before the tabulations were made.

Coding consisted of entering code numbers for crops for which there were no separate inquiries on the agriculture questionnaire, for color and tenure of operator, and for irrigation; and, for a sample of farms, of entering codes for economic class of farm and type of farm.

Punching.—The information for the 1954 Census of Agriculture required a total of 10 punchcards. The column headings are shown in the accompanying chart, and the number of punched cards is given in Table 2. All cards were punched in the two operations offices.

The verification of card punching consisted of a complete verification of the work of each punching machine operator until the work was of acceptable quality. Thereafter, verification was on a sample basis unless the sample indicated that the quality of the punching was not acceptable. The punching of approximately 15 percent of the cards for Census was verified. After verification, the punchcards, together with all records containing the corresponding basic data, were forwarded to the Washington office for tabulation.

TABLE 2.—NUMBER OF CARDS PUNCHED AND NUMBER OF PUNCHED CARDS SELECTED BY MECHANICAL EDIT FOR FURTHER VERIFICATION, BY CARD TYPE, FOR THE UNITED STATES: 1954 CENSUS OF AGRICULTURE

Card type	Total number of cards	Cards selected by mechanical edit	
		Number	Percent of total cards
All cards.....	38,410,859	3,143,893	8.2
A.....	4,856,169	274,508	5.7
C-1 (corn).....	2,961,609	215,494	7.3
C-2 (sorghums).....	372,657	62,883	16.9
C-3.....	14,828,890	1,188,824	8.0
G.....	1,141,986	52,013	4.6
H.....	3,673,804	452,188	12.3
I.....	3,831,383	160,862	4.2
J.....	397,529	58,473	14.7
K.....	3,521,887	101,619	2.9
L.....	1,100,542	205,288	18.7
M.....	1,081,911	202,209	18.7
N.....	642,492	169,532	26.4

Mechanical editing.—Once on punchcards, the data were sorted, listed, or otherwise handled by electric tabulating equipment to facilitate making final checks and to obtain totals. The initial, and a primary step in the machine handling of the punchcards was to separate, by means of electric statistical machines, those punched cards which lacked necessary information, those on which the relationships of the data punched on the cards were inconsistent or unreasonable, and those on which the relationships were possible, but of such magnitude that a further review of the individual questionnaires was warranted. Specifications for the selection of these questioned cards varied according to the item being examined (for example, a crop production of more than 100 units per acre for crops such as wheat, oats, etc.). The number of cards selected by mechanical editing for each type of card is shown in Table 2. The selected cards were listed and the listings were examined, checked to the agriculture questionnaires, and corrected, if necessary, before the tabulations were made.

Tabulation.—The tabulation was performed by means of electric tabulating machines. The tabulations were divided into three series, one series to provide data by counties, another series to provide data for 361 State Economic Areas, and the third to