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MISSISSIPPI

EXPERIMENTAL COTTON SURVEYS

1953

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SUMMARY OF RESULTS FROM MISSISSIPPI EXPERIMENTAL
COTTON SURVEYS FOR 1953

- The Sample -

These surveys represent an attempt to conduct scientifically designed mail surveys on a probability sample of cotton growers. The sample size was set to give a sampling error of 3 percent in Mississippi and 1 percent at the national level if the program were extended to the entire cotton belt. A probability sample of 12,766 cotton growers was drawn from the 1950 PMA listing of all cotton growers in Mississippi. The entire sample was circularized as of July 1 with 3 mailings to get information on cotton acreage. Approximately 45 percent of the farmers responded by mail. About one-sixth of the non-respondents or 1067 farmers were interviewed in July. The July Survey showed that 16 percent of the respondents and 31 percent of the non-respondents were not growing cotton in 1953.

Mail surveys to get information on prospective production were conducted monthly, August through December. The mailing list consisted of one-third of the July mail respondents and all of the farmers interviewed in July. A 30 percent return was anticipated. This was achieved from farmers who had previously responded by mail, but only about a 14 percent return was obtained from those who were visited in July. The mail returns gradually declined as the season advanced. In addition to the mail surveys a sample of 300 non-respondents was interviewed in September and December.

- Estimating Procedure -

It was intended that 1950 cotton allotments be used as a basis for expanding the sample data to State estimates. This proved unsatisfactory because of lack of comparability between reporting farms and the way those farms are constituted in the PMA records. Many farming operations are covered by more than one PMA contract. When a farmer reports for his farm he usually includes his entire operation regardless of the number of PMA farms that may be involved. This was anticipated and various methods of dealing with it were considered before the surveys were started. When tabulating a farmer's report it is necessary to know the 1950 allotment for his reported "farm". Presumably adjustments could be made for this lack of comparability, and the allotment for the farm as constituted in 1950 used, if the number of PMA Contracts covering a farmer's operation were known. Farmers were not asked for the number of PMA Contracts for two reasons. (1) Since considerable actual changes in the constitution and tenure of farms had taken place since 1950, many farmers would not know how many 1950 PMA contracts covered the land they were currently operating. (2) It was also believed that references to PMA contracts might lead farmers to bias their replies because new allotments were in prospect. As the next best alternative it was decided to use reported "land in farm" as a guide. Comparing the reported size of farm with the farm size listed in the PMA records was thought to provide an index of the number of PMA farms covered by each report; the reported data were adjusted on that basis.

In practice this procedure gave disappointing results for several reasons. First of all it was discovered that a farmer's reported "size of farm" is often not a good index of the farm land he is actually operating. He usually includes land that is rented out and farmed by others, he also generally includes land that is rented in from others. There are some exceptions to this in that a farmer quite often omitted small cultivated acreages that were rented in. Most

Farmers renting out land also included the cotton on that land while at the same time the farmer renting in the land generally included this same cotton acreage. This caused an unknown amount of "double reporting" of Cotton Acreage. Furthermore, many farmers report only their cropland as "total land in farm." As these difficulties had not been anticipated, no satisfactory adjustments could be made. Experience gained in these surveys does indicate the changes that are needed in our questionnaires to correct the difficulty in future work. For one thing it seems evident that "farm land" or "cropland" would perhaps be preferable to cotton allotments as a basis for estimating and that questionnaires can be designed in such a way as to insure that those data are reported properly.

The questionnaires asked for data on "last year's cotton acreage and production" as well as for current data. As data for the two years seemed consistently to cover the same farming operation, it was decided to use "last year's production" as a basis for expansion.

- July Acreage Estimates -

The Survey results on acres planted, and acres in cultivation July 1, using "bales produced last year" as the expansion factor, compared with Board estimates are shown in tables 1 and 2.

Table 1 SURVEY AND BOARD ESTIMATES - PLANTED ACRES 1953

Item	Cotton planted 1953 (000 acres)	Survey as % Board
July Survey	2,596	98.0
September Survey	2,413	91.1
December Survey	2,449	92.4
Board 1/	2,650	-

1/ Board Estimate as of Oct. 1, 1953 -- not published.

PMA measurements of planted acres were available to the Board as a basis for establishing the planted acreage.

Table 2 SURVEY AND BOARD ESTIMATES - ACRES IN CULTIVATION JULY 1, 1953

	July	December
Survey (000 acres)	2,453	-
Board (000 acres)	2,430	2,554
Survey as percent of Board (%)	100.9	96.0

- Harvested Acreage Estimates -

Table 3 shows the harvested acreage estimates indicated by the Survey for September and December and the Board estimates as of those dates.

Item	September	December
Survey (000 acres)	2,163	2,252
Board (000 acres)	2,360	2,490
Survey as percent of Board (%)	91.7	90.4

PMA measurements of planted acreage were available to the Board in Dec.

- Production Estimates -

Prospective production from these Surveys compared with the Board forecasts for August through December are shown in table 4.

Month	Survey (000 bales)	Board 1/ (000 bales)	Survey as % Board (Percent)
August	1,833	1,831	100.1
September	1,804	1,890	95.4
October	1,952	2,018	96.7
November	2,115	2,067	102.3
December	2,031	2,111	96.2

1/ Board monthly forecasts of production in 500 lbs. bales adjusted to estimated production of running bales assuming average gross weight of 508 lbs. per running bale.

- Locality Data -

Locality data, similar to that obtained from the Regular List of Crop Reporters, were obtained for August through December. These data have been summarized for "all reports", those "growing cotton" and those "not growing cotton." The results indicate that respondents from a probability sample report locality data about the same as respondents on the Regular List. It also indicates that farmers "not growing cotton" should not be asked for locality reports on the crop.

Table 5 compares the results of the Survey in a typical month - October - with the Regular List.

Table 5 LOCALITY DATA FROM OCTOBER SURVEY COMPARED WITH REGULAR LIST

	SURVEY DATA						REGULAR LIST 1/	
	All Reports		With Cotton		No Cotton		No.	Wtd. Av.
	No.	Wtd. Av.	No.	Wtd. Av.	No.	Wtd. Av.		
Condition (% Normal)	502	85	472	85	30	86	780	86
Bolls Safe - Number	259	16.6	246	16.3	13	12.8	339	15.3
Yield-Seed Cotton (Lb)	452	1084	428	1084	24	849	-	-
Yield-Lint Cotton (Lb)	459	408	434	405	25	360	767	402

1/ General and Cotton List combined.

- Non-Respondent Interviews -

Non-response to the mail surveys resulted from a variety of the usual causes. Many farmers who were on the PMA list because they were given cotton allotments in 1950 were not growing cotton at all or were growing it only as a side line. A much higher proportion of farms not growing cotton was encountered among the non-respondents than among the respondents. Respondents also had larger acreages of cotton per farm. In some cases large farms were non-respondents because those operations were so large that the questionnaires never reached the person who actually was operating the farm; it went to an absentee owner who did not bother to forward it to the proper person.

In these surveys non-response had only a slight effect on the results of the July acreage estimates and the August - December Forecasts of production because the ratio method of estimating eliminated the effect of the bias. In some instances including data from the samples of non-respondents actually seemed to distort the results instead of improving them because of the poor quality of the data reported. But it should be emphasized that the good showing made by the mail returns alone is due largely to the fact that farmers who were out of the cotton business had been out for some time; if there had been a sudden shift out of cotton this year the picture would be different.

The cost of enumerative surveys is shown in table 6.

Table 6 SUMMARY: COST OF MISSISSIPPI ENUMERATIVE SURVEYS - 1953

Item	July	September	December
1. Number usable schedules	1067	300	254
2. Number of Interviewers	30	20	18
3. Number of schedules per 8 hour day per interviewer	3.7	2.9	2.9
4. Average number miles per schedule	30	40	46
5. Interviewer salary cost per schedule	\$3.07	\$3.87	\$3.88
6. Interviewer mileage cost per schedule	\$2.10	\$2.77	\$3.25
7. Interviewer per diem cost per schedule	\$0.02	\$0.00	\$0.10
8. Interviewer cost per schedule (salary, mileage, per diem)	\$5.19	\$6.64	\$7.23
9. Total interviewer cost each survey	\$5,540.59	\$1,991.56	\$1,835.87

- Conclusions -

The results of this work indicate that PMA lists of cotton growers provides a workable basis for putting our mail cotton surveys on a sounder footing. Unless radical changes take place in the cotton-growing picture, interviews on samples of non-respondents can be eliminated without much risk of biasing the results. The most pressing need that the work has brought to light is a thorough revision of the questionnaires so that data on farm land and cropland for the farm covered by the report are properly taken into account. This requires the addition of some questions which will give a true picture of how much land is actually in the farm as it is being operated and how much of that land is in cotton. At present, there is too much guess-work in interpreting the reported data.

It is recommended that the findings of this study be put to use in our regular operations by

1. Drawing a probability sample of farms from the 1953 PMA lists throughout the cotton belt.
2. Designing a set of questionnaires which are adapted to making direct expansions of reported data.
3. Conducting mail surveys according to the regular timetable and making direct expansions of the sample data, using the previous year's production as the expansion factor.
4. Using a sub-sample of the PMA list to locate fields for the objective measurements, - i.e. boll counts etc. - that are already a part of our regular operations.

With such a program in operation, samples of non-respondents could be visited in critical years when the need arises. When provision is made for non-respondent interviews, farm land or cropland may be preferable as an expansion base because of memory lapses with respect to "last year's production". When non-respondents are not interviewed, "last year's production" should be a better basis for expansion because it makes allowance for under-representation of small cotton growers.

It is believed that questions relating to prospective yield can be improved. The present study was not designed to investigate this aspect of the problem. However, questions on the December Survey asking for reasons for changes in yield prospects indicate that information such as weather during the past month, stage of maturity of the crop and cultural practices might be useful in improving our early forecasts of yield.

NOTE: The December 1953 Board estimates are of course subject to further revision in May 1954.

REPORT ON EXPERIMENTAL COTTON SURVEYS FOR 1953

Introduction:

Funds were provided by the last Congress for conducting research in Agricultural estimates. It was determined to use a major portion of the funds provided to conduct research on ways and means of improving the acreage and production estimates for cotton. Mississippi was chosen as one of the two states in which this research work was to be conducted in crop year 1953. Mississippi is the second largest cotton producing state in the U. S. with eighty of the eighty-two counties producing some cotton. However, a little more than one-half of the cotton is produced in the 12 Delta counties comprising Crop Reporting Districts one and four. The surveys were made by using a probability sample of ten percent of the 1950 PMA list of cotton growers.

i. July Acreage Estimates:

As a basis for conducting the research on cotton acreage and production the county PMA offices were instructed to forward to the state agricultural statistician certain basic information on every tenth farm with a cotton acreage allotment contract in force in that county in 1950. It should be noted that this was a 10 percent sample of farms with contracts in force in 1950 rather than a 10 percent sample of farmers. Some farmers had more than one contract and therefore had more than one chance of being included in the sample.

Mississippi had a total of 127,861 farms with 2,308,979 acres of cotton allotted in 1950. The sample provided by the county PMA offices totaled 12,766 farms with allotments of 227,923 acres of cotton. The ratios of allotments in the sample to total allotments were very consistent by crop reporting districts.

July acreage questionnaires were mailed to the 12,766 names in the sample. A total of 5,675 usable schedules or 44.4 percent were returned. Three mailings were made and the percentage returns were as follows: 1st, 13.5%; 2nd, 20.0 % and 3rd, 10.9 %. A sample of 1,109 farms plus 152 alternates was drawn from the non-respondents for interviewing. A total of 1,067 usable schedules were obtained by 30 interviewers who had been employed in the early part of July for this work. These interviews cost \$5540.59 or \$5.19 per schedule.

A comparison of the reports of respondents and non-respondents who were interviewed shows that 16.3 percent of the respondents were not growing cotton in 1953 whereas 30.6 percent of the non-respondents were not growing cotton. This causes the 1953 cotton acreage of non-respondents to average less than for respondents as shown in table 7. The fact that a farmer was not growing cotton in 1953 was one of the major reasons given for not returning the mail inquiry.

A summary of the reasons indicated by farmers for not returning the mail questionnaire in July is as follows:

A. Lack of Interest	322
1. Statement to that effect reported by interviewer (289)	
2. No statement (33)	
B. Schedules not received	393
C. Reluctant to answer any questionnaires	12
D. Suspect some connection with '54 allotments	4
E. Unable to understand questionnaire	36
F. No cotton	72
G. Misc. statements such as on vacation, etc.	31
Sub-total	870
H. Stated questionnaire was returned	194
I. Question not asked by interviewer	3
Total number interviewed	1067

The "no cotton" category could have been tabulated under "lack of interest" But a separate tabulation was made because of the number of farmers who evidently assumed that having no cotton was a good reason for not returning the questionnaire. No doubt a number of the 393 farmers stating that they did not receive the questionnaire actually did receive it, or at least the questionnaire was delivered to the household. Many of them probably were not interested enough to remember whether or not they received the questionnaire. It is believed that some of those in category B may have received the questionnaire since the questionnaires were returned by the Post Office for only about 8 percent of sample of non-respondents drawn for interviewing. It is quite possible that some of the rural carriers may have noted that the letter was from the Agricultural Statistician's office and delivered the questionnaire to the new operator if the farm had changed hands since 1950.

The acres of cotton allotted per farm in 1950 compared with the survey indications of acres per farm harvested in 1952 and acres per farm in cultivation July 1, 1953 are shown in table 7.

Table 7 1950 ALLOTMENTS PER FARM COMPARED WITH JULY SURVEY DATA

	1950 Allotments :		July 1953 Survey	
	acres per farm	farm	Harvested 1952	Cultivation July 1, 1953
	acres per: % 1950	farm	acres per: % 1950	farm
	farm	Allotment	farm	Allotment
State	18.06	21.14 1/	117	21.60 1/ 120
PMA Sample	17.84			
Mail Respondents	18.23	22.14	121	22.76 125
Non-Respondents	17.56			
Interviews	15.88	17.80	112	18.11 114
<u>1/ Basis 1950 farms</u>				

The comparison in table 7 above indicates that the allotment of acres per farm for the PMA Sample was approximately the same as the average for the state as a whole. However, the average number of acres of cotton per farm allotted in 1950 was less for non-respondents as a group than for the respondents, and still smaller for the non-respondents interviewed. Although those interviewed showed increases in cotton per farm in 1952 and 1953 over the 1950 allotments, these increases were not as great as for the respondents.

The acreage estimates derived from the July combined mail and interview survey are as follows:

Table 8	JULY COMBINED MAIL AND INTERVIEW SURVEY				
	Expansion by Ratio to Allotments (A)	Expansion Adj. to 1952 Running Bales (B)	Board Est. or Check Data (C)	"A" as % of "C" (D)	"B" as % of "C" (E)
Acres land in farm (000) 1953	17,398	15,451	20,834 <u>1/</u>	83.5	74.2
Acres land in farm (000) 1952	17,258	15,327	20,834 <u>1/</u>	82.8	73.6
Acres of Cotton planted this year (000) 1953	2,923	2,596	2,650 <u>2/</u>	110.3	98.0
Acres of Cotton planted last year (000) 1952	2,732	2,426	2,435 <u>2/</u>	115.2	99.6
Acres of Cotton in cultivation July 1, (000) 1953	2,762	2,453	2,430 <u>3/</u>	113.7	100.9
Acres of Cotton harvested last year (000) 1952	2,703	2,400	2,375 <u>3/</u>	113.8	101.1
Bales of cotton harvested last year (000) 1952	2,096	1,861 <u>4/</u>	1,861 <u>4/</u>	112.6	100.0
<hr/>					
<u>1/</u>	PMA List "Acres in Farm" Expanded to State Total				
<u>2/</u>	Board Estimates as of Oct. 1, 1953 - not published				
<u>3/</u>	Board Estimate as of July 1, 1953				
<u>4/</u>	Census Running Bales				

The expansion of the combined mail and interview sample data by ratio to 1950 allotments gives state totals significantly higher than the official Board Estimates of cotton acreage and production. This over-expansion is approximately the same for the cotton acreage and production items. If these estimates relating to cotton acreage and production are adjusted by scaling them down to the level of 1952 Census bales harvested, they are very close to the Board estimates. In contrast with the indicated over-expansion of cotton acreage and production the sample appears to have under-expanded for "acres in farm." The check data in this case are the PMA list of "acres in farm" in 1950 expanded to a state figure by the ratio of the allotments in the PMA list to the total allotments in 1950. This under-expansion seems to indicate that many farmers report "cropland" instead of "total acres in farm" when answering this question either by mail or through interviewers. This might be avoided in future surveys by asking two questions: (1) "total cropland" and (2) "total land in farm." It would appear worthwhile to adopt this idea for all regular acreage inquiries, since errors in the "all land" base affect the ratio for every crop.

The acreage estimates derived from the July mail returns only are shown in table 9.

Table 9	JULY MAIL SURVEY ONLY				
	Expansion by Ratio to Allotments (A)	Expansion to 1952 Sales (B)	Adj. Board Est. or Check Data (C)	"A" as % of "C" (D)	"B" as % of "C" (E)
Acres land in farm (000) 1953	15,346	13,105	20,834 <u>1/</u>	73.7	62.9
Acres land in farm (000) 1952	15,280	13,047	20,834 <u>1/</u>	73.3	62.6
Acres of Cotton planted this year (000) 1953	3,014	2,574	2,650 <u>2/</u>	113.7	97.1
Acres of Cotton planted last year (000) 1952	2,843	2,478	2,435 <u>2/</u>	116.8	101.8
Acres of Cotton in cultivation July 1, (000) 1953	2,884	2,463	2,430 <u>3/</u>	118.7	101.4
Acres of Cotton harvested last year (000) 1952	2,807	2,397	2,375 <u>3/</u>	118.2	100.9
Bales of Cotton harvested last year (000) 1952	2,180	1,861 <u>4/</u>	1,861 <u>4/</u>	117.1	100.0

- 1/ PMA Sample Acres in Farm 1950 expanded to State Total.
- 2/ Board Estimates as of Oct. 1, 1953, not published.
- 3/ Board Estimate as of July 1, 1953.
- 4/ Census Running Bales.

The over-expansion of the mail returns only, for the cotton acreage and production items, is consistently about 4 percent more than the over-expansion of the combined mail and interview survey. In contrast, the expansion of the "land in farm" data gave relatively lower state totals. Apparently farmers come nearer reporting a farm size comparable to the PMA records when interviewed than when responding by mail.

II. Farmers' Concepts in Reporting on Rented Land.

Analysis of the July 1953 interview survey indicates that 15 percent or 37 out of 250 of the farmers reporting land "rented in" exclude such land in the reported farm size. On the other hand 195 farmers, or every farmer with one exception, reporting land "rented out" said they included such land in their farm size. These data are based on interviews of 1067 farmers in which 250 or about 24 percent report land "rented in", and 196 or 18 percent report land "rented out." In a few instances a farmer reported both land rented in and land rented out.

The tally of information on rented land is as follows:

A.	Number reporting land <u>rented in</u> .		250
1.	Number including such land in the farm size.		213
a.	Of these, number growing cotton and including cotton acreage on that land.	(189)	
b.	Of these, number growing cotton and excluding cotton acreage on that land.	(0)	
2.	Number excluding such land from the farm size.		37
a.	Of these, number growing cotton and including the cotton acreage on that land.	(16)	
b.	Of these, number growing cotton and excluding the cotton acreage on that land.	(17)	
B.	Number reporting land rented out.		196
1.	Number including such land in the farm size.		195
a.	Of these, number growing cotton and including the cotton acreage on that land.	(155)	
b.	Of these, number growing cotton and excluding the cotton acreage on that land.	(8)	
c.	Of these, number reporting croppers on the farm.	(75)	
2.	Number excluding such land from the farm size.		1
a.	Of these, number growing cotton and including the cotton acreage on that land.	(0)	
b.	Of these, number growing cotton and excluding the cotton acreage on that land.	(0)	
c.	Of these, number reporting croppers on the farm.	(0)	

All farmers including land "rented in" in their farm size said they included the cotton on that land. This group consisted of 213 farmers of which 189 had cotton. Of the 37 farmers excluding land "rented in" in their farm size, 4 had no cotton; 16 included the cotton on the rented acreage; and 17 excluded the cotton on the rented acreage. The "rented in" land of the 16 farmers excluding it in their farm size but including the cotton on this land amounted to only 287 acres, or an average of 18 acres per farm. These 16 farmers also "rented out" 62.5 acres of land.

The farm size for each of these 16 farms was adjusted by starting with the "acres owned" subtracting the acres "rented out" and adding the acres "rented in." Using this adjusted farm size as a basis for editing would only adjust downward the cotton acreage planted in 1953 by about 13 acres or less than 0.1 percent of the cotton acreage reported on the interviews. Similar adjustments for farm size, without subtracting the "rented out" acres would not affect the editing significantly. These adjustments for farm size would not account for a significant part of the over-expansion of the data by ratio to 1950 allotments.

If the 17 reports which exclude "rented in" land from their farm size do in fact also exclude the cotton acreage on that rented land, then no adjustment should be made in farm size for this group. On the assumption that neither the "rented in" land nor the cotton on it is in the sample, no adjustments for farm size similar to that for the 16 reports mentioned above were made for these 17 farms.

The most surprising part of the tally is that all of the farmers, except one, reporting land "rented out" said they included this land in their farm size.

The one exception was not growing cotton. Of the 163 farmers growing cotton and renting out land, 155 said they included the cotton on that rented out land, and 8 said they did not. However, 3 of these 8 reported that they had croppers and that the cotton grown by the croppers was included in the reported cotton acreage. Thus it appears that these three farmers may have been renting out some land on a cash rent or some other rental arrangement, as well as having some croppers. Another possibility is that these 3 farmers have actually included all cotton on land "rented out," in spite of the way the interviewer recorded the answers. The above analysis of the farmers' concept in reporting land "rented out," and the cotton on that land, indicates the need for special provision to be made to avoid including any land "rented out" which is covered by a separate allotment. There is the possibility that some of these farmers may have reported on land covered by more than one PMA contract in 1950. Our current editing procedures attempt to make allowance for these multiple contracts if the farmer reported his "land in farm" comparable to the PMA record of this item.

The state totals for the Interview Survey for "land in farm," land "rented in," and land "rented out" are summarized below:

	<u>Acres</u>
1. Total land in farms	142,766
2. Total land "owned"	120,335
3. Total land "rented in."	<u>21,796</u>
4. Total of 2 plus 3	142,131
5. Total land "rented out"	8,259

(The "rented in" land reported by 37 farmers who excluded it in their farm size was a little more than offset by failure of others interviewed to report sufficient land as either "owned" or "rented in" to account for the total of "all land" in their farms.)

In the light of the way the farmers reported their cotton acreages on "rented in" and "rented out" land, it appears that it would be better to use the farm size as reported by the farmers, in making expansions.

There may be some question as to whether or not land farmed by croppers should be called "land rented out." In the opinion of Statist this land farmed by croppers should not be called land "rented out." PMA does not establish farm units for croppers. Therefore, the report of the farm operator should include any land being farmed by croppers. Evidently farmers with croppers did report in this manner since every one of the 279 farmers growing cotton and reporting croppers said they included the cotton grown by the croppers in the reported cotton acreage. The fact that 75 of the 163 farmers growing cotton and reporting land "rented out" said they had croppers might appear to indicate that some farmers do consider land farmed by croppers as "rented out." It is the opinion of Statist that the location of the land "rented out" question on the schedule, and the areas of the state in which the 75 farmers interviewed are located, account for the fact that these 75 farmers reporting croppers reported land "rented out" and at the same time said they included the cotton land farmed by the croppers in their cotton acreage. With the land "rented out" question coming before the "cropper" question, and with the farmer having no way of knowing that he would later on be asked if he had croppers, a farmer with croppers may have for the moment considered the land farmed by them as "rented out." On the other hand, since 67 of these 75 reports are from the "hill" areas of the state,

where croppers are not so common, as in the Delta, we are inclined to suspect that many of those reported as croppers are actually share tenants, paying one-third of the corn and one-fourth of the cotton as rent. In such cases the farmer would very likely know how much of these two crops these share tenants have, since he is to receive a portion of them as rent. If the renter had a separate allotment, however, his acreage would be duplicated if it were reported by both landlord and tenant.

III. Reasons for Over-expansion of the July Survey by Ratio to Allotment.

A. Adjustments for Farm Size.

As indicated in Section II of this paper adjusting the reported farm size, where appropriate (16 reports) by starting with land "owned," subtracting land "rented out," and adding land "rented in," would not change the expanded data significantly for cotton acreage and production. Also, as pointed out in Section II, adjusting all reports in a similar manner would reduce the average farm size. This would in turn result in less editing on the basis of farm size and thereby would increase the over-expansion by ratio to allotments.

The table below compares the average farm size in 1953 as indicated by the survey with the average farm size in 1950 based on the PMA list.

Table 10	AVERAGE SIZE FARM		
	1950	1953	1953 as %
	Acres per farm	Acres per farm	1950
State	163 <u>1/</u>	136 <u>2/</u>	83.4
PMA List	161		
Respondents	164	123	75.0
Non-Respondents	158	143 <u>3/</u>	90.5

1/ PMA List expanded by ratio to allotment.

2/ Combined mail and interview survey, expanded, divided by number of farms in 1950.

3/ Interview survey, expanded.

Apparently farmers came nearer reporting their farm size comparable to that carried by the PMA when they were interviewed than when they responded by mail. If farm size is used in future surveys as a basis for editing for multiple contracts, it seems that some allowance may be necessary for this difference between reports by mail and through interviews. Asking for both "cropland" and "total land," as has already been suggested, may clarify this matter in the future.

B. Substitution of farms with "0" cotton for alternates where appropriate.

All of the interview schedules on alternates were examined to ascertain, if possible, the reasons why the alternates were selected. It was clear that 12 of these alternates were chosen for interview because the farm on the regular list was idle and the former operator could not be located. It may be that some of the other alternates were chosen for this same reason, but there was no positive evidence to that effect.

Revised district and state totals have been calculated for the interview reports by removing these alternates and replacing them with the appropriate idle farms. Substituting the 12 farms with "0" cotton for the alternate, the expanded interview data for the state as a whole for cotton acreage and

production was reduced by about 2.3 percent. These revised interview data combined with the mailed reports reduced the original expanded state totals by about 1.3 percent. This may be considered a significant reduction in the expanded state data, but it does not account for any where near the approximately 13 percent over-expansion for the cotton questions as compared with Board estimates and Census bales harvested in 1952. This analysis does indicate, however, that in future surveys instructions to interviewers as to when to choose an alternate should be tightened up. The July instructions were not too specific on the point of turning in a schedule for a farm even though it was idle, rather than choosing an alternate.

- C. Adjustment of reported data on all farms with 10 percent or more land in farm in 1953 than in 1950, to the 1950 level of farm land.

In accordance with the July 14, 1953 Research Instructions, the data reported on farms with $1\frac{1}{2}$ to $2\frac{1}{2}$ times as many acres in farm in 1953 as in 1950 were divided by 2, similarly, farms with $2\frac{1}{2}$ to $3\frac{1}{2}$ times as many acres in farm were divided by 3 and so on. In addition data reported on farms with 10 percent or more land in farm in 1953 than in 1950 have been adjusted to the 1950 level of land in farm. In this latter instance adjustments were made on 393 or 7 percent of the mail reports and 124 or 11 percent of the interview reports.

The expansion of the July combined mail and interview survey after these additional adjustments is shown in table 11.

Table 11 - COMBINED "M" AND "I" SURVEY WITH ADDITIONAL ADJ. FOR FARM SIZE*

	Expansion by Ratio to Allot. (A)	Expansion Adj. to '52 Bales (B)	Check Data (C)	"A" as % of "C" (D)	"B" as % of "C" (E)
Acres land in farm 1953 (000)	16,623	15,521	20,834 <u>1/</u>	79.8	74.5
Acres land in farm 1952 (000)	16,508	15,414	20,834 <u>1/</u>	79.2	74.0
Acres cotton planted 1953 (000)	2,784	2,599	2,650 <u>2/</u>	105.1	98.1
Acres cotton planted 1952 (000)	2,605	2,432	2,435 <u>2/</u>	107.0	99.9
Acres cotton in cult. July 1, 1953 (000)	2,631	2,457	2,554 <u>3/</u>	103.0	96.2
Acres cotton harv. 1952 (000)	2,577	2,407	2,375 <u>3/</u>	108.5	101.3
Bales harvested 1952 (000)	1,994	1,861	1,861 <u>4/</u>	107.1	100.0

* Farms with 10% or more land in 1953 than in 1950 adjusted to 1950 base.

- 1/ FFA List "acres in farm" expanded to state total.
- 2/ Board Est. as of Oct. 1, 1953, not published.
- 3/ Board Est. as of Dec. 1953.
- 4/ Census Running Bales.

As indicated in the above table the acreage and production items, expanded by ratio to 1950 allotments, are higher than the check data. These

additional adjustments reduced the over-expansion of the 1952 production to 7 percent compared with 12.6 percent indicated in table 8.

The tally of information on rented land questions on the July interview part of the survey indicated that all farmers renting out cotton land included that cotton acreage in their reports. The tally also showed that 205 of the 222 farmers growing cotton on rented land included that cotton in their reports. While it is true that 189 out of the 205 included the rented land in their farm size it is likely that our 10% upward tolerance in farm size was too liberal to catch a number of these renters. The farmers (16 out of 205 in the tally) who include the cotton on rented land but exclude the rented acreage in their farm size are also a source of upward bias in the expansions.

It should also be recognized that many rental arrangements complicate the use of ratio of cotton acres to total acres in farm in making expansions. For example a farmer may own 100 acres of land with 10 acres of cotton on it. He may also rent 10 acres of cotton land which is a part of another farm. He probably would report 100 acres in farm or at most 110 acres in farm with 20 acres of cotton. In either case the ratio of cotton to total land would be much too high. This is the sort of problem we will have so long as we depend on the mail inquiry or a combination of mail inquiry and interviews not tied to a specific area of land.

D. Adjustments for Multiple Contracts.

As pointed out in "C" above, reports showing $1\frac{1}{2}$ to $2\frac{1}{2}$ times as much land in farm in 1953 as in 1950 were divided by 2 and so on. This editing for multiple contracts was based on the assumption that generally a report showing twice as many acres in farm in 1953 as in 1950 was covered by 2 PMA contracts in 1950. Farm operators interviewed in December were asked how many PMA Contracts were in force in 1950 on the farms they now operate. The number of contracts in force in 1950, on farms reporting more than one contract, compared with the number assumed in the July editing is shown below.

	<u>Number</u>
Farms in tabulation.	34
Number contracts in force on these farms in 1950.	64
Number assumed by Statist in July, 1953.	128

This tabulation would indicate that adjustments for multiple farms were more than adequate if we are merely trying to adjust for the number of contracts involved. An examination of the individual reports indicates that the adjustments were about in line with the number of 1950 contracts involved so long as the factor was low -- say not higher than 3. If a larger factor were involved it usually indicated that the farmer was operating an entirely different and much larger farm which generally was covered by one or a very limited number of contracts in 1950. This was confirmed by a fairly intensive investigation by statist of all the July schedules from three counties. The adjustment of the reported data on the basis of the ratio of land in farm in 1953 to land in farm in 1950 was a step in the right direction but apparently did not go far enough on the basis of the check data.

IV. August through December Surveys.

The sample for these surveys consisted of a sub-sample of 2039 of farmers or approximately one-third of those who replied by mail in July and all of the

1067 respondents interviewed in July. The August, October and November surveys were conducted by mail only. The September and December mail surveys were followed up with interviews of a systematic sample of approximately 300 non-respondents distributed equally between the "M" and "I" lists. For December the interview part of the survey was modified to the extent that "Dummy" schedules showing the pertinent data from the July Survey were used for those farmers whose July reports showed they were growing no cotton in 1953.

In addition 32 farmers whose December mailed reports differed significantly in some respect from previous reports were interviewed to ascertain the reasons for these differences.

Editing of the schedules for multiple contracts was consistent throughout the season. Reports showing $1\frac{1}{2}$ to $2\frac{1}{2}$ times as much land in farms in 1953 as in 1950 were divided by 2, those with $2\frac{3}{4}$ to $3\frac{1}{2}$ times as much land were divided by 3 and so on. The exception to this rule was that reports on farms of over 1,000 acres in 1953 on the "M" list were adjusted to the 1950 farm size in accordance with Agricultural Estimates Instructions #1732.

A. AUGUST SURVEY:

The response to this survey is shown in table 12.

	Schedules Mailed	Usable Returns	Returned
			%
"M" List	2039	695	34
"I" List	1067	124	12

The percentage returns from the "I" list in particular was disappointing. The low percentage returns from this list probably can be attributed to a number of reasons, some of which are: (1) lower level of education and intelligence of this group as a whole, (2) lack of interest in public affairs, and (3) higher percentage not growing cotton.

Table 13 shows the percentage of respondents to the July and August Surveys reporting "0" cotton in 1953.

	"M" List - %	"I" List - %
July Survey	16.3	30.6
August Survey	14.7	27.2

It should be noted that the percentage reporting no cotton on both the "M" and "I" lists in August was still close to that for the respective lists in July.

The kind of farms, as indicated by 1950 allotments, reporting in July and August compared with the PMA sample and the universe is shown in table 14.

Table 14 1950 COTTON ALLOTMENTS - ACRES PER FARM

Item	July Survey (Acres per farm)	August Survey: (Acres per Farm)
"M" List	18.2	17.4
"I" List	15.9	12.8
PMA Sample	17.8	17.8
STATE	18.1	18.1

Table 15 shows that the August production data for 1952 over-expanded by 10.6 percent compared with the over-expansion of 12.6 percent in the July Survey. Table 7 indicated that the rate of increase in cotton acreage in 1953 over 1950 allotments was higher for the larger farms. Therefore, the decrease in the average farm size, as indicated by 1950 allotments, for those reporting in August may account for some of the decrease in the over-expansion. The indicated production for 1953, adjusted to 1952 bales harvested, is about the same as the Board forecast in August. It appears that direct expansions of the mail response to a PMA sample, using last year's production as the expansion factor is a satisfactory way of forecasting cotton production.

Table 15 AUGUST PRODUCTION INDICATIONS

Item	Expansion Ratio to Allotment (A)	Expansion Adjusted to 1952 bales (B)	Check Data (C)	"A" as % of "C" (D)	"B" as % of "C" (E)
Bales harvested 1953 (000)	2,025	1,833	1,831 ^{1/}	110.6	100.1
Bales harvested 1952 (000)	2,056	1,861	1,861 ^{2/}	110.5	100.0

^{1/} Board August forecast of 1,860,000 (500 lb.) bales adjusted to running bales by factor of 101.6 (factor used by Board in October)

^{2/} Census running bales.

The locality data from the Survey compared with the Regular cotton list are shown in table 16.

Table 16 LOCALITY DATA FROM AUGUST SURVEY COMPARED WITH REGULAR LIST

	S U R V E Y D A T A						REGULAR	
	All Reports:		With Cotton		No Cotton		LIST 1/	
	No.	Av.	No.	Av.	No.	Av.	No.	Av.
Condition August 1 (% Normal)	604	87	563	87	41	85	1060	84
No. Bolls Safe	579	7.6	545	7.6	34	8.9	539	6.7
Percent Stand	682	85	639	85	43	87	740	83
Yield - Seed Cotton (Lbs.)	549	1041	514	1049	35	1010	-	-
Yield - Lint Cotton (Lbs.)	562	380	527	379	35	303	922	388
1st boll open Aug. 1 - 1	429	23	399	23	30	17	174	19 2/
Weevil Infestation (%)	575	22	544	22	31	30	690	21

1/ General and cotton list combined.

2/ Cotton schedule only.

Reported condition and number of bolls safe are slightly higher in the Survey while yield per acre is a little higher on the Regular List. If the locality data are to be obtained through mail inquiries it may be just about as satisfactory to use the Regular cotton list as the mail response to a probability sample. The survey data are shown separately for all reports, reports from farmers growing cotton and reports for farmers not growing cotton. The small number of reports from farmers growing no cotton do not affect the State averages significantly.

B. SEPTEMBER SURVEY

The mail response to the September Survey was as follows:

Table 17 MAIL RESPONSE TO SEPTEMBER SURVEY

List	Schedules	Usable	Percent
	Mailed	Returns	Returned
"M" List	2,039	623	31
"I" List	1,067	159	15

An interview sample of 152 names plus 25 alternates was drawn from the non-respondents on the "M" list and similarly a sample of 156 names plus 26 alternates was drawn from the non-respondents on the "I" list. 152 farmers on the "M" list and 148 farmers on the "I" list were interviewed in September.

The State was divided into twenty areas for the September interview work compared with thirty areas in July. This was primarily for the purpose of reducing the number of new Interviewers to be hired, since almost one-half those Interviewers working on the July Survey were school teachers and not available in September. This re-distributing also make it more worthwhile for a person to accept the job. The pay for the time and mileage to interviewers for the 300 usable schedules obtained in September was \$1991.56 or \$6.64 per usable schedule.

A comparison of the 1950 allotments per farm for the State as a whole with the mail returns and interviews is shown below:

Table 18 COMPARISON OF 1950 ALLOTMENTS WITH 1953 ACREAGE OF COTTON

	:1950 Allotment:		: 1953 Planted		: 1953 Harvested	
	:Acres per Farm:	Acres	: % 1950	: Acres	: % 1950	
		: Per Farm	: Allot.	: Per Farm	: Allot.	
Sept. Resp. "M" List	21.5	28.6	133	26.2	122	
Sept. Non-Resp. "M" List	16.6					
Sept. Interviews "M" List	18.5	22.0	119	20.7	112	
Sept. Resp. "I" List	11.9	12.5	105	11.7	98	
Sept. Non-Resp. "I" List	16.6					
Sept. Interviews "I" List	17.1	20.7	121	17.6	103	
STATE	18.1	21.8 <u>1/</u>	120	19.6 <u>1/</u>	108	

1/ Based on 127,861 PMA Contracts in 1950.

This comparison shows that farmers on the "I" List who responded by mail in July and again in September had more cotton acreage allotted in 1950 than the average for the State and that they have also increased their cotton acreage more than the average. Those farmers who replied by mail in July but did not respond in September and were subsequently interviewed had slightly more cotton allotted per farm than the State average in 1950, and increased their acreage in 1950 about in proportion to the estimated increase for the State. September mail respondents on the "I" list had only 11.9 acres per farm allotted in 1950 compared with an average of 16.6 acres per farm for the non-respondents on the "I" list. The mail respondents on the "I" list reported only a slight increase in cotton acreage per farm in 1953 over the 1950 allotments whereas those on the "I" list who were interviewed reported about the same percentage increase in planted acres per farm as those interviewed on the "M" list.

A tabulation of the percentage of farms reporting no cotton was made to see if this might account for the differences in acres per farm allotted in 1950 among the various categories of reports. The tabulation follows:

Table 19 PERCENT FARMS GROWING NO COTTON

	: July %		: September %	
Respondents "M" List	16.3		18.5	
Interviews "M" List			13.2	
Respondents "I" List			33.3	
Interviews "I" List	30.6		31.8	

The percentage of farms with no cotton is about the same for respondents and non-respondents interviewed on the "I" list and does not appear to account for the wide variation in the size farms, as indicated by allotments in 1950.

The September combined mail and interview acreage and production indications compared with check data are shown in table 20.

Table 20 SEPTEMBER COMBINED MAIL AND INTERVIEW INDICATIONS

	Expansion Ratio to Allotment (A)	Expansion Adj. '52 Bales (B)	Check Data (C)	"A" as % of "C" (D)	"B" as % of "C" (E)
Acres planted 1953 (000)	2,790	2,413	2,650 <u>1/</u>	105.3	91.1
Acres harvested 1953 (000)	2,500	2,163	2,360 <u>2/</u>	105.9	91.7
Bales harvested 1953 (000)	2,085	1,804	1,890 <u>3/</u>	110.3	95.4
Bales harvested 1952 (000)	2,151	1,861 <u>4/</u>	1,861 <u>4/</u>	115.6	100.0

1/ Board Estimate as of October 1, 1953 - not published.

2/ Board Estimate as of September 1, 1953.

3/ Board forecast of 1,920,000 bales as of Sept. 1, adjusted by factor 101.6.

4/ Census running bales.

The mail only September acreage and production indications are as follows:

Table 21 SEPTEMBER MAIL ONLY INDICATIONS

	Expansion Ratio to Allotment (A)	Expansion Adjusted '52 Bales (B)	Check Data (C)	"A" as % of "C" (D)	"B" as % of "C" (E)
Acres planted 1953 (000)	2,807	2,986	2,650 <u>1/</u>	105.9	112.7
Acres harvested 1953 (000)	2,429	2,584	2,360 <u>2/</u>	102.9	109.5
Bales harvested 1953 (000)	1,859	1,978	1,890 <u>3/</u>	98.4	104.7
Bales harvested 1952 (000)	1,749	1,861	1,861 <u>4/</u>	94.0	100.0

1/ Board Estimate as of October 1, 1953 - not published.

2/ Board Estimate as of September 1, 1953.

3/ Board forecast of 1,920,000 bales as of Sept. 1, adjusted by factor 101.6.

4/ Census running bales.

The combined mail and interview survey under-expanded for both acres and production in 1953 when adjusted to 1952 bales harvested. In contrast the mail only portion of the survey over-expanded for these items when adjusted to 1952 bales harvested.

The size of the sample may be the primary cause of the differences in the indications between the combined mail and interview survey and the mail only survey. In July the indications on acres in 1953 and production in 1952 were about the same for the combined and mail only surveys after adjusting to 1952 bale s harvested.

The 10.7 percent abandonment indicated from the September individual reports applied to the planted acreage of 2,596,000 acres derived from the July Survey (July Survey adj. to 1952 bales harvested) would give a harvested figure of 2,318,000 acres. This compared with the Board September forecast of 2,360,000 acres. A yield of 405 pounds per acre was derived by dividing the production by harvested acres in the September Survey. This yield applied to the 2,318,000 acres indicated a production of 1,958,000 bales compared with the Board September forecast of 1,920,000 bales.

The locality data from the September Survey are compared with the Regular List in table 22 below.

Table 22 LOCALITY DATA FROM SEPTEMBER SURVEY COMPARED WITH REGULAR LIST

	SURVEY DATA						REGULAR LIST 1/	
	:All Reports		:With Cotton		: No Cotton		: No.	: Wtd. Av.
	:no.	:Wtd.Av.:	No.:	Wtd.Av.:	No.:	Wtd Av.:		
Condition (% Normal)	814	81	727	81	87	85	985	80
Abandonment, %	644	3.6	567	3.4	77	3.1	856	3.9
Bolls Safe, Number	511	13.4	467	13.5	44	12.9	546	12.7
Yield-Seed Cotton (Lb.)	700	1009	630	1011	70	990	-	-
Yield-Lint Cotton (Lb.)	733	358	660	356	73	363	929	366
Boll Size (% Normal)	725	87	653	87	72	94	705	87
Weevil Infestation, %	762	36	692	37	70	31	714	31

1/ General and Cotton List combined.

C. OCTOBER SURVEY

Questionnaires were mailed to 2,039 on the "M" List and 1,067 on the "I" List. 562 usable schedules or 28 percent of those mailed were returned by the "M" List. Usable schedules were returned by 155 or 15 percent of those on the "I" List. 12 percent of the farms on the "M" List and 33 percent of the farms on the "I" List were growing no cotton. The production indications are shown in table 23.

Table 23 OCTOBER PRODUCTION INDICATIONS

Item	Expansion	Expansion	Check Data (C)	"A" as % of "C" (D)	"B" as % of "C" (E)
	Ratio to Allotment (A)	Adj. '52 Bales (B)			
	Bales harv. 1953 (000)	2,018			
Bales harv. 1952 (000)	1,924	1,861	1,861 2/	103.4	100.0

1/ Board October forecast 2,050,000 bales adjusted to running bales by factor 101.3.

2/ Census running bales.

The locality data on the October Survey are compared with the Regular List in table 24 below. Only 25 percent (30 out of 119 reports) of those farmers growing no cotton answered one or more of the locality questions. Eighty percent of those farmers growing cotton answered one or more of the locality questions.

Table 24 LOCALITY DATA FROM OCTOBER SURVEY COMPARED WITH REGULAR LIST

	S U R V E Y D A T A						REGULAR	
	All Reports		With Cotton		No Cotton		LIST 1/	
	No.	Wtd. Av.	No.	Wtd. Av.	No.	Wtd. Av.	No.	Wtd. Av.
Condition (% Normal)	502	85	472	85	30	86	780	86
Bolls Safe - Number	259	16.6	246	16.3	13	12.8	339	15.3
Yield-Seed Cotton (Lb.)	452	1084	428	1084	24	849	-	-
Yield-Lint Cotton (Lb.)	459	408	434	405	25	360	767	402

1/ General and Cotton List combined.

Farmers not growing cotton expected the yield per acre to be significantly less than those growing cotton. However, most of this difference may be accounted for by the fact that most of the reports by farmers growing no cotton are from the lower yielding areas of the State. The locality information from "all reports" in the Survey and the Regular List are in very close agreement.

D. NOVEMBER SURVEY

Response to the mail inquiry continued to decline in November. 470 schedules were returned by the "M" List and 142 schedules were returned by the "I" List.

The average size of farm reporting in July and in November, as indicated by 1950 allotments, is shown in table 25.

Table 25 1950 COTTON ALLOTMENTS, ACRES PER FARM

Item	July 1953	November 1953
	Survey Acres	Survey Acres
"M" List	18.2	23.1
"I" List	15.9	13.0
PMA Sample	17.8	17.8
STATE	18.1	18.1

The percentage of farmers reporting no cotton in 1953 decreased from July to November for the "M" List but remained about the same for the "I" List. This decrease in the percent of farms on the "M" List reporting no cotton may be the major reason for the increase in the average size of farm on the "I" List reporting in November. Although the average size of farm reporting on the "I" List in November is smaller than in July, it is larger than for September or October. Apparently the fluctuation in the average size of farms reporting on the "I" List since July is due mostly to the small number of respondents.

The expanded data on cotton production on the November Survey compared with the check data are shown in table 26.

Item	Expansion	Expansion	Check Data (C)	"A" as % of "C" (D)	"B" as % of "C" (E)
	Ratio to Allotment (A)	Adj. '52 Bales (B)			
	Bales harv. 1953 (000)	2,377			
Bales harv. 1952 (000)	2,091	1,861	1,861 <u>2/</u>	112.4	100.0

- 1/ November Board forecast of 2,100,00 bales adjusted to running bales by factor 101.6.
2/ Census Running Bales.

The locality data on the November Survey are compared with the regular list in table 27 below. Only 26 percent (25 out of 96 reports) of those farmers growing no cotton in 1953 answered one or more of the locality questions. Eighty percent (411 out of 516 reports) of those growing cotton answered one or more of the locality questions.

Item	SURVEY DATA						REGULAR LIST <u>1/</u>	
	All Reports			Growing Cotton			No Cotton	
	No.	Wtd. Av.	No.	Wtd. Av.	No.	Wtd. Av.	No.	Wtd. Av.
Condition (% Normal)	356	91	334	91	22	92	793	90
Bolls Safe	154	20.6	149	20.6	5	22.6	111 <u>2/</u>	17.0
Yield-Seed Cotton (lb)	363	1229	344	1233	19	1036	-	-
Yield-Lint Cotton (lb)	367	444	346	442	21	411	845	430
Av. Price Hand Pick	436	2.75	411	2.75	25	2.63	595	2.79
Av. Price Hand Snap	45	2.44	42	2.44	3	2.15	14 <u>2/</u>	2.09
Av. Wt. Bale, (lb) <u>3/</u>	489	499	489	499	-	-	198 <u>2/</u>	508

- 1/ General and Cotton List combined.
2/ From Cotton Schedule only.
3/ From Individual returns.

The difference between the Survey Data (reporters growing cotton) and the Regular List data on yield per acre may be significant. The difference of 12 pounds per acre would amount to about 60,000 bales on the basis of the current estimate of harvested acreage.

The average weight per bale applies to the individual farm although the data are shown along with the locality reports. The average bale weight of 499 pounds appears too low in the light of recent history.

E. DECEMBER SURVEY

The December survey was combined mail and interview survey. Usable returns from the "M" List were 595 or 29 percent of those on the List. Returns from the "I" List were 147 or 14 percent of those on that list. The increase in the December mail response over November was probably due to a special appeal asking for an "end of season" report. A systematic sample of 154 names plus 26 alternates was drawn from the non-respondents on the "M" List and a sample of 152 names plus 31 alternates was drawn from the

"I" List. "Dummy" schedules, containing the pertinent data obtained in July, were made up for those farmers who reported no cotton in 1953 in July. The December interviews, including the "dummy" schedules, totaled 150 for the "M" List and 147 for the "I" List. In addition 32 farmers whose mail reports in December differed significantly in one or more aspects from their earlier reports were interviewed in an effort to determine the reason for these differences.

Response to the mail inquiry in December compared with previous months is shown in table 28.

Table 28 RESPONSE TO MAIL INQUIRY

DATE	"M" LIST			"I" LIST		
	Total	Usable	Returned	Total	Usable	Returned
	Number	Returns	%	Number	Returns	%
August	2,039	695	34	1,067	124	12
September	2,039	623	31	1,067	152	14
October	2,039	562	28	1,067	155	15
November	2,039 ^{1/}	470	23	1,067	142	13
December	2,039 ^{1/}	595	29	1,067 ^{2/}	147	14

^{1/} Includes 37 farmers dropped by request.

^{2/} Includes 9 farmers dropped by request.

The percentage of respondents in December growing no cotton in 1953 compared with respondents in previous months is shown in table 29.

Table 29 PERCENT OF FARMS REPORTING NO COTTON IN 1953

DATE	"M" LIST		"I" LIST	
	Mail Resp.	Interviews	Mail Resp.	Interviews
	%	%	%	%
July	16.3	-	-	30.6
August	14.7	-	27.2	-
September	18.5	13.2	33.3	31.8
October	11.9	-	32.9	-
November	11.5	-	29.6	-
December	13.8	20.0	30.2	34.7

The average size farm reporting in July and December, as indicated by 1950 allotments is shown in table 30.

Table 30 - 1950 ALLOTMENTS, ACRES PER FARM FOR FARMS REPORTING IN JULY, DEC., 1953

Item	July	December
Mail response "M" List.	18.2	20.2
Interviews "M" List.	-	14.6
Mail response "I" List.	-	16.8
Interviews "I" List.	15.9	16.6
FMA Sample	17.8	17.8
State	18.1	18.1

The combined mail and interview survey data over-expanded in December by 6.8 percent on the basis of the 1952 production (Census Running Bales). This compares with an over-expansion of 12.6 percent in July (see table 8) and 15.6 percent in September (see table 20). The estimate of acres planted in 1953, adjusted to 1952 production, is less than that currently carried by the Board. The July, September and December expansions for acres planted in 1953 are 98.0, 91.1, and 92.4 percent respectively of the Board forecast. The September and December estimates on acres harvested in 1953, adjusted to 1952 production, are 91.7 and 92.4 percent of the current Board estimate.

The expanded data, relating to the individual farm questions, in the combined mail and interview survey are shown in table 31 below.

Table 31 DECEMBER COMBINED MAIL AND INTERVIEW SURVEY

	Expansion by Ratio to Allot. (A)	Expansion Adj. to '52 Bales (B)	Check Data (C)	"A" as % of "C" (D)	"B" as % of "C" (E)
Acres of land in farm 1953 (000)	19,966	18,695	20,834 <u>1/</u>	95.8	89.7
Acres cotton planted 1953 (000)	2,615	2,449	2,650 <u>2/</u>	98.7	92.4
Acres cotton harvested 1953 (000)	2,406	2,252	2,490 <u>3/</u>	96.6	90.4
Bales cotton harvested 1953 (000)	2,170	2,031	2,111 <u>4/</u>	102.8	96.2
Acres cotton harvested 1952 (000)	2,490	2,331	2,375 <u>3/</u>	104.8	98.1
Bales cotton harvested 1952 (000)	1,987	1,861 <u>5/</u>	1,861 <u>5/</u>	106.8	100.0

1/ PMA List "acres in farm" expanded to State Total.

2/ Board Est. as of Oct. 1, 1953 -- not published.

3/ Board Est. as of December, 1953.

4/ Board Est. as of December, 1953 of 2,145,000 bales adjusted to running bales by factor 101.6.

5/ Census Running Bales.

The mail only portion of the survey adjusted to 1952 production also under-expanded for 1953 acres planted, 1953 acres harvested and 1953 production. The acres for harvest in 1952 after adjustment to 1952 production, over-expanded on the mail only portion of the survey in contrast with the under-expansion on the combined mail and interview survey.

The expanded data relating to the individual farm questions from the mail only portion of the survey are shown in table 32.

Table 32 DECEMBER MAIL RETURNS ONLY TO "M" AND "I" LIST

	Expansion by Ratio to Allot. (A)	Expansion Adj. to '52 Bales (B)	Check Data (C)	"A" as % of "C" (D)	"B" as % of "C" (E)
Acres land in farm 1953 (000)	20,413	19,239	20,834 <u>1/</u>	98.0	92.3
Acres cotton planted 1953 (000)	2,729	2,572	2,650 <u>2/</u>	103.0	97.1
Acres cotton harvested 1953 (000)	2,430	2,290	2,490 <u>3/</u>	97.6	92.0
Bales cotton harvested 1953 (000)	2,022	1,905	2,111 <u>4/</u>	95.8	90.2
Acres cotton harvested 1952 (000)	2,698	2,543	2,375 <u>3/</u>	113.6	107.1
Bales cotton harvested 1952 (000)	1,974	1,861 <u>5/</u>	1,861 <u>5/</u>	106.1	100.0

- 1/ PMA List "acres in farm" expanded to State Total.
- 2/ Board Est. as of Oct. 1, 1953 -- not published.
- 3/ Board Est. as of December, 1953.
- 4/ Board Est. as of December, 1953 of 2,145,000 bales adjusted to running bales by factor 101.6.
- 5/ Census Running Bales.

A summary of identical farms in the September and December mail surveys indicates very little change in the estimates of these reporters on acres harvested in 1953. The summary is as follows:

Item	No. Reports	September (Acres harvested in 1953)	December
"M" List	249	6870	6921
"I" List	64	969	942
Total	313	7839	7863

The December expanded data on 1953 production, adjusted to 1952 bales harvested, indicates a harvest of 2,031,000 running bales or 96.2 percent of the December Board forecast of 2,111,000 running bales (Board forecast of 2,145,000 -- 500 lb. bales adjusted to running bales.)

The locality data from the Survey compared with the Regular List are shown in table 33.

Table 33 LOCALITY DATA FROM DECEMBER SURVEY COMPARED WITH REGULAR LIST

	SURVEY DATA						REGULAR LIST	
	: All Reports:			: Growing Cotton:			: No Cotton :	
	: No.:	: Wtd. Av.:	: No.:	: Wtd. Av.:	: No.:	: Wtd. Av.:	: No.:	: wtd. Av.:
Abbr. since July 1.%	519	3.2	491	3.5	28	2	919	2.5
Yield-Seed Cotton (Lb)	638	1154	615	1154	23	954	1127	1197
Yield-Lint Cotton (Lb)	641	422	618	422	23	354	1200	440

Farmers on the "M" and "I" Lists who were interviewed in December and whose answers to the "land in farm", "acres for harvest" or 1953 production questions differed significantly from their previous reports were asked to give the reasons for the change. These reasons, together with the reasons given by the 32 farmers whose December mail reports differed significantly from earlier reports, are summarized in tables 34, 35, and 36 below.

Table 34 LAND IN FARM IN DECEMBER DIFFERENT FROM JULY

Reason	Number Reports
1. Reported crop land only in July	39
2. Operates more than one farm	12
3. Did not include rented land in one of the reports	10
4. Changed farm size (bought, sold, moved, etc.)	10
5. Miscellaneous	6
Total	<u>77</u>

Table 35 ACRES COTTON HARVESTED DECEMBER DIFFERENT FROM SEPTEMBER

Reason	Number Reports
1. Measured acres differed from September estimate.	11
2. Operates more than one farm	2
3. Abandonment differed from September estimate.	3
4. Rented land not included.	4
5. Miscellaneous	3
Total	<u>23</u>

Table 36 DECEMBER PRODUCTION DIFFERENT FROM PREVIOUS REPORTS

Reason	A. MORE		:	B. LESS	
		No. Reports		Reason	No. Reports
1. Rain when needed		9	:	1. Drought	13
2. Late cotton made good crop		4	:	2. Heavy weevil damage	3
3. Under-estimated		19	:	3. Over-estimated	6
4. Miscellaneous *		5	:	4. Miscellaneous *	2
Total		<u>37</u>	:	Total	<u>24</u>

* Including reports on different unit in December compared with earlier months.

Table 34 emphasizes the importance of asking for more detailed information on the farm unit such as "crop land," land "rented in" and "rented out" if we are to get the correct "land in farm" figures for use in our expansions. The major reason given in table 35 for differences between the estimates of acres for harvest in September and December is that the PMA measurements were available in December. This may indicate the need for further investigation as to the significance of response errors in farmers' acreage reports.

Since the crop turned out better than expected earlier in the season it is logical that many farmers would say they under-estimated the crop as indicated in table 36. However, the comments obtained by the interviewers do not shed much light as to the reason for this under-estimation. This survey points up the need for further investigation as to the reasons for

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changes in yield prospects such as the weather during the past month, stage of maturity of the crop and cultural practices. It also emphasizes the urgency of making further efforts toward developing objective measurements for forecasting yields early in the season.