

Cotton Gin Operating Costs
in the San Joaquin Valley
of California -
1971/72 and 1972/73

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1971/72 and 1972/73 by Charles A. Wilmot, Dale L. Shaw, and Betty K.
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ABSTRACT

A comparative study of 41 sample gins in the San Joaquin Valley of California in 1972/73 with the previous season revealed higher overall averages in rated ginning capacities, annual volumes ginned, and in plant capacity utilization. Operating cost averages, per bale, ranged from \$16.27 for out-of-pocket to \$21.64 for total standardized costs; down \$2.59 and \$5.03, respectively, from 1971/72. Ginning revenues from all sources combined, for independents and some cooperatives in the sample, were almost identical both seasons. A stepwise multiple linear regression analysis revealed that volume ginned was the most influential factor in determining annual gin operating costs.

Keywords: Cotton, ginning, costs, capacity, utilization.

PREFACE

The objectives of this continuing research in the San Joaquin Valley of California, three major producing areas of Texas, and the Mississippi Delta are to: (1) determine current costs of ginning and observe trends over time, (2) analyze the effects of changes in ginning volumes on operating costs, and (3) consider the possibilities of reducing operating costs through more efficient ginning.

Cost records and other information used in preparing these annual reports are mailed in from a sample of gins at the close of each ginning season. The authors wish to express their appreciation to the gin owners, managers, and accountants for their fine cooperation and assistance in this study. Statistical analyses of ginning volumes and cost data were carried out using computer facilities at the University of Arizona.

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by

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INTRODUCTION

This is the second annual report based on a continuing study of cotton gin operating costs in the San Joaquin Valley of California. Findings in this report are based on the same sample of 41 gins included in last year's study. The sample gins 2/ for 1972/73 represented 27 percent of the total ginning capacity and 25 percent of the total ginnings for the area, comparable to the previous season. Size groups by rated hourly capacities for the sample gins, also unchanged, were: Group 1, 8 bales or less; group 2, 9-11 bales; group 3, 12-20 bales; and group 4, 21 bales or more.

This report includes ranges and averages in gin rated hourly capacities, annual ginning volumes, rates of gin plant capacity utilization, costs by individual items of input, estimates of itemized operating costs at 70-percent plant capacity utilization, ginning revenues, estimating equations, and other statistical data obtained from regression analyses. Where applicable, comparisons with last year's findings were made to point up changes and to identify indications of developing trends.

FINDINGS

Ranges in sample gin hourly capacities for each of the size groups and for all gins combined remained unchanged from last year. One firm in group 4 acquired an additional small gin plant following the 1971/72 season. This resulted in higher bale per hour averages for both size group 4 and all sample gins combined.

1/ Wilmot and Shaw are agricultural economists. Heron is an economic assistant.

2/ A sample gin is a ginning operation of one or more plants, in one or more locations, operated as a single business.

Seasonal volumes were up substantially over last year, ranging from a low of 2,318 bales to a high of 51,498 (table 1). The average volume ginned for all sample gins combined was 10,224 bales. Plant capacity utilization ^{3/} rates were up an average of 23 to 29 percentage points over last year, reflecting the higher ginning volumes. Total plant investment, excluding land, ranged from \$100,483 to \$1,804,158 this year compared with \$103,483 to \$1,769,849 in 1971/72. The weighted average for all sample gins was \$490,160, up \$16,334 from last year.

Table 1--Rated hourly capacities, volumes ginned, and capacity utilization, by size group, in ranges and averages, sample gins, San Joaquin Valley, California, 1971/72 and 1972/73

Gin size group by season	Rated hourly capacity ^{1/}		Annual volume ginned		Rate of capacity utilization	
	Range	Average	Range	Average	Range	Average
	----- Bales -----				-- Percent --	
<u>1971/72</u>						
Group 1.....	7- 8	7.8	1657- 5125	3149	31- 83	52
Group 2.....	9-11	9.9	1452- 6439	3821	21- 84	50
Group 3.....	12-20	16.9	3653-13410	7230	35-145	56
Group 4.....	21-74	36.4	6135-34959	14242	33-101	51
Combined :	7-74	16.8	1452-34959	6754	21-145	53
<u>1972/73</u>						
Group 1.....	7- 8	7.8	2318- 7056	4704	43-115	78
Group 2.....	9-11	9.9	2396-10569	6037	35-125	79
Group 3.....	12-20	16.9	4742-19295	10235	44-209	79
Group 4.....	21-74	37.6	8966-51498	22197	55-122	77
Combined :	7-74	17.0	2318-51498	10224	35-209	78

^{1/} Based on observations in plants operating under normal conditions.

Operating Costs

Costs are shown by ranges and averages for individual items as well as by out-of-pocket subtotals (excludes depreciation and interest); totals (includes depreciation and interest); and standardized totals (depreciation and interest

^{3/} Ratio of volume ginned to estimated total seasonal ginning capacity, without seed cotton storage. Based on typical ginning season of 906 operating hours and a sustained seasonal ginning rate capability set at 85 percent of rated capacity. Several of the sample gins stored seed cotton either in the field or on the gin yard. This practice, in effect, extends the ginning season and makes it possible to exceed 100 percent capacity utilization.

adjusted to compensate for wide variations in rates observed among sample gins). 4/

Comparisons of 1971/72 and 1972/73 Seasons at Existing Rates of Plant Capacity Utilization

Concurrent with higher ginning volumes in 1972/73, operating costs were down from the prior season. Weighted average costs for all gins combined ranged from \$16.27 per bale for out-of-pocket costs to \$21.64 per bale for total standardized costs; down \$2.59 and \$5.03 per bale, respectively, from last year's averages (tables 2 and 3). Reductions in operating costs among individual size groups ranged from \$2.15 to \$3.82 per bale in out-of-pocket costs, \$3.69 to \$5.20 per bale in total costs, and \$4.37 to \$5.38 per bale in total standardized costs.

Economies of scale were evident again this year in both out-of-pocket and total costs. Total standardized costs deviated slightly from this expected pattern with costs for size group 3 being a little higher than for size group 2.

Comparison of 1971/72 and 1972/73 Seasons at 70-Percent Plant Capacity Utilization

Results of a 2-year comparison of estimated costs at 70-percent capacity utilization were mixed, with 1972/73 averages for some groups being higher and some lower than those of the season before. In 1972/73 the out-of-pocket cost for all gins combined was \$16.94 per bale, up \$0.14; total cost was \$20.19 per bale, up \$0.10; and total standardized cost was \$22.93 per bale, up \$0.26 (table 4).

Ginning Revenues

Revenue per bale varies widely among California gins. Independents and a few cooperatives assess the grower a fixed charge per hundredweight of seed cotton for ginning, and purchase the seed which they later sell, usually at a profit. Most cooperatives, on the other hand, make no ginning charge but derive the bulk of their revenues from the sale of the seed which they keep as payment for ginning.

During the 1972/73 season, total ginning revenues from all sources for both independents and those cooperatives in the sample which assessed ginning charges averaged \$30.86 per bale (table 5). This was a decline of \$0.20 per bale from the previous season.

During both 1971/72 and 1972/73, total revenue exceeded total standardized and total cost averages for each size group. Gin operating profit margins ranged, depending upon the size group and cost type being considered, from \$1.81 to \$10.00 per bale in 1971/72 and from \$6.99 to \$13.49 per bale in 1972/73 (table 6).

4/ See costing methods in appendix for definition of costs.

Table 2--Costs per bale, in ranges and averages, by size groups, sample gins, San Joaquin Valley, California, 1971/72 ^{1/}

Cost item ^{2/}	Group 1		Group 2		Group 3		Group 4		Weighted average ^{4/}
	Range ^{3/}	Average	Range ^{3/}	Average	Range ^{3/}	Average	Range ^{3/}	Average	
	----- Dollars -----								
Management.....	4.27-14.14	7.87	2.56-18.88	7.05	1.36- 4.31	2.40	1.26- 3.63	1.95	3.77
Insurance.....	.44- 1.02	.54	.38- 1.19	.50	.29- 1.05	.54	.36- .93	.55	.54
Taxes.....	.75- 2.18	.99	.43- 2.76	.93	.56- 1.69	.98	.52- 1.91	1.02	.98
Energy.....	1.10- 3.92	1.62	1.31- 3.63	1.86	1.28- 3.36	1.92	1.48- 2.15	1.77	1.83
Labor.....	3.10- 7.15	4.50	1.85- 6.86	3.53	1.84- 6.55	3.91	2.60- 4.75	3.51	3.78
Bagging and ties.....	2.98- 3.40	3.11	2.79- 3.44	3.00	2.38- 4.42	3.66	3.35- 4.02	3.70	3.48
Repairs.....	2.35- 6.66	3.14	1.58- 4.80	2.52	1.49- 5.72	3.12	1.64- 4.58	2.78	2.90
Miscellaneous.....	.58- 5.22	1.73	.52- 3.39	1.15	.49- 6.41	1.85	.66- 2.56	1.48	1.59
Out-of-pocket subtotal ^{5/}	16.98-36.03	23.50	13.55-42.16	20.54	11.81-27.98	18.39	13.78-21.46	16.75	18.86
Depreciation.....	1.84- 8.95	3.76	1.54- 6.65	3.06	1.99- 6.17	4.15	2.63- 6.81	4.07	3.87
Interest.....	0 - 2.36	.21	0 - 1.73	.13	0 - 6.94	.99	0 - .82	.24	.51
Total.....	18.81-45.87	27.47	16.53-47.62	23.73	16.77-39.39	23.53	16.41-28.32	21.06	23.24
Standardized depreciation ^{6/}	2.40- 4.97	3.46	2.18-12.70	4.19	3.55- 6.90	5.13	3.12- 8.29	5.35	4.83
Standardized interest ^{6/}	1.69- 3.27	2.28	1.44- 8.03	2.68	2.11- 4.21	3.12	1.87- 5.00	3.23	2.98
Total standardized ^{7/}	21.26-44.25	29.25	18.23-62.89	27.42	17.48-38.90	26.64	18.76-34.75	25.32	26.67

Individual cost items may not add to totals because of rounding.

^{1/} Rated hourly ginning capacity: Group 1, 8 bales or less; group 2, 9-11 bales; group 3, 12-20 bales; group 4, 21 bales or more. The universe includes all active gins in the study area.

^{2/} Taken from gin records and subjected to uniform allocation procedures--see appendix.

^{3/} Low and high values shown for individual cost items indicate ranges among sample gins within a size group. Since the same gin plant was not consistently lowest or highest for all cost items, individual costs will not add to totals shown.

^{4/} Sample averages across groups, weighted by each group's representative portion of the total rated hourly ginning capacity in the study area gin universe.

^{5/} Sample gin costs excluding depreciation and interest.

^{6/} Sample gin costs using uniform rates in computing depreciation and interest--see appendix.

^{7/} Out-of-pocket costs plus standardized depreciation and standardized interest.

Table 3--Costs per bale, in ranges and averages, by size groups, sample gins, San Joaquin Valley, California, 1972/73 1/

Cost item 2/	Group 1		Group 2		Group 3		Group 4		Weighted average 4/
	Range 3/	Average	Range 3/	Average	Range 3/	Average	Range 3/	Average	
	----- Dollars -----								
Management.....	4.54-10.03	7.24	2.43-10.52	5.90	.96- 3.65	1.95	1.02- 2.58	1.35	3.14
Insurance.....	.34- .68	.44	.30- .98	.41	.40- .84	.50	.21- .75	.41	.44
Taxes.....	.40- 1.20	.62	.26- 1.58	.57	.46- 1.49	.70	.36- 1.27	.60	.63
Energy.....	1.01- 3.66	1.64	1.13- 4.69	1.79	1.16- 2.47	1.84	1.38- 1.98	1.66	1.75
Labor.....	1.69- 6.39	2.41	1.64- 5.79	2.23	2.19- 5.21	3.76	2.78- 4.80	3.30	3.13
Bagging and ties.....	3.05- 3.48	3.22	3.02- 3.68	3.28	3.01- 3.88	3.41	3.14- 3.68	3.48	3.39
Repairs.....	1.79- 4.98	2.72	.45- 4.83	2.53	.97- 4.40	2.51	1.57- 4.33	2.50	2.53
Miscellaneous.....	.59- 4.15	1.40	.41- 2.67	1.00	.39- 3.40	1.56	.71- 2.00	1.11	1.26
Out-of-pocket subtotal 5/	14.79-26.48	19.68	13.60-26.07	17.70	10.12-21.86	16.24	12.75-19.66	14.41	16.27
Depreciation.....	1.28- 6.01	2.45	1.01- 4.73	2.02	1.25- 6.65	3.01	2.33- 4.84	2.80	2.66
Interest.....	0 - 1.66	.14	0 - 1.04	.07	0 - 5.51	.52	0 - .64	.16	.27
Total.....	18.02-34.15	22.27	14.63-30.80	19.79	13.46-30.30	19.77	15.14-23.57	17.37	19.18
Standardized depreciation 6/.....	1.40- 3.30	2.53	1.48- 7.67	2.68	2.51- 6.84	3.75	2.24- 5.89	3.56	3.33
Standardized interest 6/..	.99- 2.30	1.65	.98- 4.85	1.72	1.49- 4.16	2.28	1.35- 3.55	2.15	2.05
Total standardized 7/..	19.72-32.07	23.87	16.25-33.71	22.10	14.12-30.27	22.27	16.39-29.10	20.11	21.64

Individual cost items may not add to totals because of rounding.

1/ Rated hourly ginning capacity: Group 1, 8 bales or less; group 2, 9-11 bales; group 3, 12-20 bales; group 4, 21 bales or more. The universe includes all active gins in the study area.

2/ Taken from gin records and subjected to uniform allocation procedures--see appendix.

3/ Low and high values shown for individual cost items indicate ranges among sample gins within a size group. Since the same gin plant was not consistently lowest or highest for all cost items, individual costs will not add to totals shown.

4/ Sample averages across groups, weighted by each group's representative portion of the total rated hourly ginning capacity in the study area gin universe.

5/ Sample gin costs excluding depreciation and interest.

6/ Sample gin costs using uniform rates in computing depreciation and interest--see appendix.

7/ Out-of-pocket costs plus standardized depreciation and standardized interest.

Table 4--Estimated costs per bale at 70-percent capacity utilization, by size groups, 2-year comparison, sample gins, San Joaquin Valley, California, 1971/72 and 1972/73 1/

Cost item 2/	1971/72				1972/73					
	Group 1	Group 2	Group 3	Group 4	Weighted average	Group 1	Group 2	Group 3	Group 4	Weighted average
	Dollars									
Management.....	6.40	5.62	2.08	1.63	3.03	7.78	6.40	2.08	1.41	3.39
Insurance.....	.45	.41	.46	.44	.44	.47	.44	.54	.44	.48
Taxes.....	.73	.67	.78	.74	.74	.69	.65	.79	.65	.70
Energy.....	1.44	1.63	1.77	1.57	1.65	1.71	1.87	1.91	1.71	1.81
Labor.....	3.97	3.06	3.55	3.05	3.34	2.52	2.34	3.93	3.42	3.26
Bagging and ties.....	3.11	3.00	3.66	3.70	3.48	3.22	3.28	3.41	3.48	3.39
Repairs.....	2.81	2.22	2.88	2.47	2.61	2.82	2.63	2.60	2.58	2.62
Miscellaneous.....	1.64	1.09	1.78	1.40	1.51	1.42	1.02	1.59	1.13	1.28
Out-of-pocket subtotal 3/	20.54	17.70	16.95	15.00	16.80	20.61	18.62	16.86	14.81	16.94
Depreciation.....	2.81	2.20	3.29	2.96	2.91	2.73	2.29	3.38	3.07	2.96
Interest.....	.15	.10	.79	.18	.38	.15	.07	.58	.17	.29
Total.....	23.51	19.99	21.03	18.13	20.09	23.49	20.98	20.82	18.05	20.19
Standardized depreciation 4/	2.58	3.01	4.07	3.88	3.63	2.82	3.05	4.21	3.89	3.71
Standardized interest 4/.....	1.70	1.93	2.47	2.35	2.24	1.84	1.95	2.55	2.35	2.28
Total standardized 5/.....	24.83	22.64	23.50	21.22	22.67	25.27	23.61	23.62	21.05	22.93

Individual cost items may not add to totals because of rounding.

1/ See appendix for cost adjustments and weighting procedures. Rated hourly ginning capacity: Group 1, 8 bales or less; group 2, 9-11 bales; group 3, 12-20 bales; group 4, 21 bales or more. The universe includes all active gins in the study area.

2/ Taken from gin records and subjected to uniform allocation procedures--see appendix.

3/ Sample gin costs excluding depreciation and interest.

4/ Sample gin costs using uniform rates in computing depreciation and interest--see appendix.

5/ Out-of-pocket costs plus standardized depreciation and standardized interest.

Table 5--Average revenue per bale, by item, for gin plants which make direct charges for ginning, sample gins, San Joaquin Valley, California, 1971/72 and 1972/73

Revenue item	Revenue per bale	
	1971/72	1972/73
	----- Dollars -----	
Ginning charge.....	22.88	22.76
Cottonseed margin.....	5.49	5.35
Other <u>1/</u>	2.69	2.75
Total.....	31.06	30.86

1/ Includes revenue from sampling, compression, notes, loose cotton, burs, margins on planting seed, and any other miscellaneous income.

Table 6--Profit margin per bale, by revenue source, costing method, and gin size group, sample gins, San Joaquin Valley, California, 1971/72 and 1972/73

Year and gin size group <u>1/</u>	Sources of revenue			
	All sources combined <u>2/</u>		Ginning charges only	
	Total standardized cost <u>3/</u>	Total cost <u>3/</u>	Total standardized cost <u>3/</u>	Total cost <u>3/</u>
	----- Dollars -----			
<u>1971/72</u>				
Group 1.....	1.81	3.59	-6.37	-4.59
Group 2.....	3.64	7.33	-4.54	-0.85
Group 3.....	4.42	7.53	-3.76	-0.65
Group 4.....	5.74	10.00	-2.44	1.82
Weighted average..	4.39	7.82	-3.79	-0.36
<u>1972/73</u>				
Group 1.....	6.99	8.59	-1.11	0.49
Group 2.....	8.76	11.07	0.66	2.97
Group 3.....	8.59	11.09	0.49	2.99
Group 4.....	10.75	13.49	2.65	5.39
Weighted average..	9.22	11.68	1.12	3.58

1/ Rated hourly ginning capacity: Group 1, 8 bales or less; group 2, 9-11 bales; group 3, 12-20 bales; group 4, 21 bales or more. The universe includes all active gins in the study area.

2/ Includes cottonseed margins and revenue from sampling, compression, notes, loose cotton, burs, margins on planting seed, and any other miscellaneous income in addition to ginning charges.

3/ See appendix for costing methods.

If the margins on seed and all other revenue had been eliminated, however, leaving the ginning charge per hundredweight of seed cotton as the only revenue source, profit margins would have been greatly reduced. For example, in 1971/72 the average ginning charge alone would have been insufficient to cover costs in all but one case, based on the size group averages under both total standardized and total costs. Size group 4, under total costs, would have shown a profit of \$1.82 per bale while the other nine averages considered would have registered losses ranging as high as \$6.37 per bale. On the other hand, with the generally higher volumes and resulting lower per bale average operating costs in 1972/73, ginning charges alone would have exceeded costs in all cases but one. Size group 1, under total standardized costs, would have recorded a loss of \$1.11 per bale while profit margins among the other size group averages would have ranged from \$0.49 to \$5.39 per bale.

Estimating Equations

A stepwise, multiple linear regression was run on the weighted sample gin data for both 1971/72 and 1972/73. Multiple regression is a statistical technique for studying the relationship between a dependent and two or more independent variables. Equations resulting from this analysis are useful both in explaining existing relationships and for estimating results using other value combinations for the variables specified. The development of estimating equations was the primary purpose of this analysis. The stepwise regression technique was employed to determine the relative influence of each of the independent variables, as well as their combined effects, on the dependent variable. Gin plant investment and ginning volumes, generally recognized as the principal factors contributing to the total cost of ginning, were specified as the independent variables and total cost was specified as the dependent variable. Equations were derived based on both total standardized and total costs. They are:

$$\text{Total standardized costs} = \$32,391 + \$0.159000(I) + \$10.3300(V)$$

$$\text{Total costs} = \$34,015 + \$0.094898(I) + \$10.8587(V)$$

Where: I = total investment in buildings and equipment (in dollars).
V = annual volume ginned (in bales).

All coefficients were significant at the .01 level. The coefficient of determination (R^2), denoting the proportion of the dependent variable explained by the independent variables, was .973 for the total standardized and .960 for the total cost equation (table 7). Volume ginned appeared as the most influential variable, coming in first in the stepwise regressions with an R^2 of .904 in the total standardized and .927 in the total cost equation.

The coefficient of variability, which is the standard deviation expressed as a percentage of the mean, was smaller for the total standardized cost equation, at 9.9 percent, compared to 11.9 percent for the total cost equation. This is to be expected since the objective in introducing the standardizing procedure was to reduce the variation in depreciation and interest rates found in the sample gin data.

Table 7--Effects of volume and investment on the coefficient of determination (R^2), stepwise multiple regression analysis, sample gins, San Joaquin Valley, California, 1971/72 and 1972/73

Cost types <u>1/</u>	Most influential variable	Individual effect of most influential variable	Combined effect of both variables
		(R^2)	(R^2)
Total standardized...	volume	.904	.973
Total.....	volume	.927	.960

1/ See appendix for costing methods.

The abilities of these two equations to estimate operating costs were tested by comparing their results, on a per bale basis, with actual cost averages for each size group. The results were very satisfactory. While ranges among size group averages were greater, the estimates compared to actual costs for all groups combined, on a percentage basis, ranged from -0.3 to 1.6 percent for total standardized costs and from 0 to 0.8 percent for total costs, depending upon the year and rate of capacity utilization considered. 5/

Other Uses

Gin operating cost estimating equations may be used as guides in determining (1) justifiable capital investment, (2) total volume or ginning revenue required to yield a given return to capital or net profit per bale, and (3) break-even volume. Examples of each, using the total standardized cost equation, follow:

(1) Determining justifiable capital investment.

Given:

Anticipated average ginning volume = 5,000 bales

Anticipated average revenue = \$27.00 per bale

Desired return on investment = 10 percent

Justifiable capital investment ... = X

Solution (using total standardized cost equation):

$$\$32,391 + \$0.159000(X) + \$10.3300(5,000) + .10(X) = \$27.00(5,000)$$

$$$.259000X = \$50,959$$

$$X = \$196,753$$

5/ The use of these specific equations on other data may not provide the same closeness of fit as observed in these data due to differences in cost structures.

(2) Determining volume necessary to yield 10 percent on investment.

Given:

Anticipated average revenue = \$27.00 per bale

Investment = \$300,000

Necessary volume = X

Solution (using total standardized cost equation):

$$\$32,391 + \$0.159000(\$300,000) + \$10.3300(X) + .10(\$300,000) = \$27.00(X)$$

$$\$16.6700(X) = \$110,091$$

$$X = 6,604 \text{ bales}$$

(3) Determining break-even volume.

Given:

Investment = \$250,000

Anticipated average revenue = \$27.00 per bale

Return on investment..... = 0

Necessary volume = X

Solution (using total standardized cost equation):

$$\$32,391 + \$0.159000(\$250,000) + \$10.3300(X) = \$27.00(X)$$

$$16.6700X = \$72,141$$

$$X = 4,328 \text{ bales.}$$

APPENDIX: METHODOLOGY

Gins vary widely by type of organization, ownership structure, accounting procedures used, and in many other ways. In analyzing costs reported by sample gins, the uniform allocation procedures described below were used to compensate for some of the differences in accounting procedures.

Costs of hauling cottonseed and lint--such as truck drivers' wages, truck depreciation, insurance, road-use taxes, and associated truck-operating costs--and any other costs not directly related to gin processing were excluded.

Cost Allocations

Management: Where applicable, includes salaries, bonuses, commissions, expense allowances, house rent, and personal insurance policies for owners and managers; bookkeeping and other office salaries, and home office cost (line companies); social security; and workmen's compensation insurance and any other insurance on management and office personnel.

Depreciation: Includes allowances for depreciation exactly as carried on gin records except for standardized costs. (See standardized sample gin costs below.)

Interest: Includes interest exactly as carried on gin records except for standardized costs. (See standardized sample gin costs below.)

Insurance: Includes costs for all forms of insurance on gin buildings, equipment, housing furnished management and labor, cotton products, and automotive equipment (except large trucks and trailers).

Taxes: Includes all taxes on real property only.

Energy: Includes cost of all utilities--electricity, gas, and water--used in ginning and directly related operations.

Labor: Includes cost of gin wages, social security, and workmen's compensation and any other insurance on gin labor borne by the gin; plus any rental housing furnished labor (excludes gin repair labor). (See repairs below.)

Bagging and ties: Includes actual cost of bagging and ties purchased.

Repairs: Includes cost of gin repair wages, social security, and workmen's compensation and other insurance on gin repair labor borne by the gin; plus the cost of repair materials and supplies.

Miscellaneous: Includes pickup, tractor, and other automotive expenses; telephone, telegraph, advertising, and promotion costs; legal and audit fees; dues, memberships, and subscriptions; annual meetings and director's fees and expenses; conventions and travel expenses; donations and contributions, cotton losses from fire; sampling, compressing, and related charges; gin and office supply costs; and any other costs not included elsewhere.

Costing Methods

Sample gin costs: Gin costs which have been subjected to the above allocations are identified in this report as sample gin costs.

Standardized sample gin costs: Uniform rates for computing depreciation and interest on investment were used in developing standardized sample gin costs. Depreciation was set at 7 percent of the initial purchase price of capital items carried on the depreciation schedule regardless of age or former method of depreciation. Interest was charged at 8 percent on the estimated average value of the land comprising the gin site and 8 percent on one-half the cost of buildings, machinery, and equipment.

Out-of-pocket costs: Sample gin costs from which depreciation and interest have been excluded.

Cost Adjustments

Estimates of ginning costs at other than existing levels of capacity utilization were based on relationships assumed in the development of a series of model gins. See: Zolon M. Looney and Charles A. Wilmot, Economic Models for Cotton Ginning. U.S. Dept. Agr., Agr. Econ. Rpt. 214, Oct. 1971.

Weighting

In computing weighted averages, the simple weighted average cost per bale for each group was further weighted by its representative proportion of the total rated hourly ginning capacity in the San Joaquin Valley of California.

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