PRODUCT PROFITABILITY

APRIL 1964

COPY NO. 1

0633402

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This report has been prepared to serve as a basic reference for volume, price, costs, profitability and potential of Monsanto's principal products. Such products are listed alphabetically by division, broken down between Sales (external) and Internal Use. The products covered herein account for 85% of the total domestic investment. The report will be issued annually or otherwise updated for major product additions, etc.

This information is extremely confidential and special safeguards are recommended to maintain security.

All return figures are calculated on the investment, volume, and profit on product sales made to outside customers. Quantities of product indicated for "Internal Use" are transferred as intermediate materials to end products. Investment and cost of intermediates are rolled forward to the end product and included in the profitability of the sale of end products to customers.

Sales are for the domestic divisions only, but include their export sales. Product profitability is based on "Division Contribution" (operating profit before any Central Office allocations) after applying the applicable pro-forma tax rate.

Results are shown for 1961-62-63 plus Budget 1964, and on a hypothetical basis of maximum output based on 1964 capacity. Such maximum is shown only as an approximation of current potential, with no attempt made to reflect any such results on intermediate product costs.

As a yardstick for viewing product profitability, return on gross investment of the Company and each division is as follows:

	% Return on Investment			
	Actual			Budget
	1961	1962	1963	1964(a)
Based on Net Income				
Consolidated	4.9	4.7	4.6	4.9
Parent Company (b)	5.1	4.8	4.6	4.8
Based on Divisional Contr.				
Parent Company (b)	6.2	5.9	5.8	7.1
Agricultural	6.3	6.3	7.1	7.4
Chemstrand	10.0	10.4	9.4	10.8
Hydrocarbons	3.4	1.9	2.7	3.6
Inorganic	6.4	6.1	6.8	7.3
Organic	6.9	6.9	5.9	7.9
Plastics	2.7	2.6	1.7	2.6
Shawinigan	-	-	6.1	6.8
Gering	-	2.4	3.0	3.7
Packaging	-	-	(.2)	1.3

(a) Depreciation at straight-line. Previous years at SYD. Change increases 1964 Return by approximately 1/2 of 1% point.

(b) Including Domestic and Panamanian Subsidiaries.

On page 3 there is a compilation of division returns grouped to show the amount of investment in products having a rate of return which is (a) a loss, (b) low, 0-3%, (c) low to company average, 3-5.8%, and (d) above company average. The company average at 5.8% is that of the Parent Company based on divisional contribution in 1963.

RETURN ON INVESTMENT
Year 1963

	% of Total Invest.	In MM's Invest.	Div. Contribution*	% Ret. on Invest.
Agricultural Division				
% Return at: Loss	1.7	$ 2.4	$ (.1)	-
0 to 3%	23.8	34.3	.6	1.6
3 to 5.8%	3.8	5.4	.2	3.7
Over 5.8%	70.7	101.9	9.5	9.3
Total	100.0	$ 144.0	$ 10.2	7.1
Chemstrand Division				
% Return at: Loss	.7	$ 3.4	$ (.4)	-
0 to 3%	-	-	-	-
3 to 5.8%	12.6	61.7	2.5	4.1
Over 5.8%	86.7	424.6	43.8	10.3
Total	100.0	$ 489.7	$ 45.9	9.4
Hydrocarbons Division				
% Return at: Loss	26.8	$ 67.3	$ (2.6)	-
0 to 3%	12.3	31.0	.8	2.6
3 to 5.8%	44.9	112.9	4.1	3.6
Over 5.8%	16.0	40.3	4.3	10.6
Total	100.0	$ 251.5	$ 6.6	2.7
Inorganic Division				
% Return at: Loss	3.5	$ 6.5	$ (1.1)	-
0 to 3%	-	-	-	-
3 to 5.8%	18.2	34.1	1.3	3.8
Over 5.8%	78.3	146.4	12.5	8.6
Total	100.0	$ 187.0	$ 12.7	6.8
Organic Division				
% Return at: Loss	12.8	$ 32.6	$ (1.7)	-
0 to 3%	11.0	28.0	.2	.8
3 to 5.8%	42.8	109.0	4.2	3.9
Over 5.8%	33.4	84.9	12.3	14.4
Total	100.0	$ 254.5	$ 15.0	5.9
Plastics Division				
% Return at: Loss	42.4	$ 95.0	$ (3.6)	-
0 to 3%	7.5	16.8	.2	1.1
3 to 5.8%	33.9	75.9	2.8	3.7
Over 5.8%	16.2	36.4	4.4	12.0
Total	100.0	$ 224.1	$ 3.8	1.7
Combined Divisions**				
% Return at: Loss	16.1	$ 266.8	$(10.2)	-
0 to 3%	8.5	140.5	2.5	1.8
3 to 5.8%	24.0	399.0	15.1	3.8
Over 5.8%	51.4	853.7	88.8	10.4
Total	100.0	$1,660.0	$ 96.2	5.8

* After Taxes at 52%

** Including Building Products, Gering, Packaging and Shawinigan

AGRICULTURAL DIVISION

Division profitability has been ($MM's)

	Actual			1964
	1961	1962	1963	Budget
% Return on Investment AT	6.3	6.3	7.1	7.4
Gross Investment	119.4	136.2	144.0	160.0
Sales	68.1	73.7	81.7	92.3
Division Contribution BT	15.5	18.0	21.3	23.8
Div. Cont. as % of Sales	22.8	24.4	26.0	25.8
$ Sales/$ Investment	.57	.54	.57	.58

In 1963 investment in the divisions' products earned the following rates of return:

	% of Total Investment
Loss	1.7
0 to 3%	23.8
3 to 5.8%	3.8
Over 5.8%	70.7

Major products reported are:

These comprise 80% of the divisions' investment in 1963.

AMMONIUM NITRATE
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$38.9	36.8	35.6	40.7	42.1
Internal Use	$ .4	1.2	2.1	2.7	2.1
Total	$39.3	38.0	37.7	43.4	44.2
For Sales:					
% ROI (after tax)	5.1	6.1	6.4	5.9	8.0
Sales	$18.3	17.9	17.6	17.6	21.6
Gross Profit	$ 5.6	5.9	6.0	6.2	8.4
SARE	$ 1.5	1.2	1.3	1.4	1.7
Other Income	$ -	-	-	-	-
Division Contribution	$ 4.1	4.7	4.7	4.8	6.7
As % of Sales:					
Division Contribution	22.4	26.1	27.0	27.2	31.1
Gross Profit	30.7	33.0	33.9	35.4	38.7
SARE	8.4	7.0	7.4	8.2	7.6
$ Sales/$ Investment	.47	.49	.49	.43	.51
Selling Price/Ton	$ 58	57	55	53	53
Cost of Sales/Ton	$ 40	38	36	35	33
Capacity - M Tons	543	489	468	427	427
Excess	222	162	132	76	-
Internal Use	3	10	17	22	22
Sales	318	317	319	329	405

Sales volume of this product has remained constant at capacity through the last few years with a slight increase forecast for 1964. The excess capacity shown represents the imbalance between prilling capability and available ammonia and nitric acid. The decrease shown in the excess capacity reflects the utilization of these prilling facilities to produce Nutrium. Return on investment has increased from 5.1% in 1961 to 6.4% in 1963. This has been accomplished through cost reductions which more than offset lower selling prices. Although the return on investment is still not satisfactory, the high capital already invested in nitrogen end products, and particularly in ammonium nitrate, must be utilized as fully as possible to maximize the total profits generated by the nitrogen complex. A unit of ammonia sold as ammonium nitrate generates more gross profit and cash flow than the sale of the unit of ammonia as such but the high investment in these end-product facilities does not yield high return.

The MAC agricultural system now being developed to sell at the retail level is expected to provide overall improvement in the return.

ANHYDROUS AMMONIA
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$21.2	30.4	18.2	18.1	19.7
Internal Use	$24.4	23.2	37.8	43.9	42.6
Total	$45.6	53.6	56.0	62.0	62.3
For Sales:					
% ROI (after tax)	8.5	7.5	10.4	9.5	10.6
Sales	$11.2	13.0	10.7	9.9	11.2
Gross Profit	$ 5.4	5.6	4.6	4.3	5.1
SARE	$ .9	.9	.8	.8	.9
Other Income	$ -	-	.1	-	-
Division Contribution	$ 4.5	4.7	3.9	3.5	4.2
As % of Sales:					
Division Contribution	40.2	36.1	36.8	34.8	37.5
Gross Profit	48.6	42.8	43.8	42.9	45.3
SARE	8.5	7.0	7.4	8.2	7.9
$ Sales/$ Investment	.53	.43	.59	.55	.57
Selling Price/Ton	$ 69	66	68	71	71
Cost of Sales/Ton	$ 36	37	38	41	39
Capacity - M Tons	454	503	588	600	600
Excess	-	-	4	17	-
Internal Use	292	304	427	443	443
Sales	162	199	157	140	157

Return on investment has grown from 8.5% in 1961 to 9.5% in 1964. The actual improvement is greater than 1% because 1961 included high profit sales to Chemstrand. If the 1964 transfer of 75M tons were to be shown as sales, 1964 return would be about 11%. Ammonia has historically been a profitable product and this trend is expected to continue since the principal growth of ammonia sales is projected for fertilization by direct application to the soil.

Selling prices of ammonia have stabilized and the projected balanced supply and demand situation will tend to maintain that stability. The increase in average selling prices reflects the shift of ammonia from industrial users to the direct application markets.

Major additions to capacity, including the Muscatine Plant, have been accomplished to increase 1961 capacity by one-third.

M R A
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ 1.7	1.8	2.9	3.0	3.3
Internal Use	$ -	-	-	-	-
Total	$ 1.7	1.8	2.9	3.0	3.3
For Sales:					
% ROI (after tax)	18.4	22.2	11.8	15.5	23.1
Sales	$ 2.0	2.6	2.4	2.7	4.4
Gross Profit	$ 1.0	1.2	1.1	1.2	2.0
SARE	$ .3	.4	.3	.4	.4
Other Income	$ -	-	-	-	-
Division Contribution	$ .7	.8	.8	.8	1.6
As % of Sales:					
Division Contribution	32.2	31.0	30.3	31.3	34.9
Gross Profit	47.4	47.0	44.1	44.7	45.1
SARE	15.3	16.0	13.8	13.3	10.2
$ Sales/$ Investment	1.19	1.49	.83	.92	1.33
Selling Price/lb	$1.05	1.02	.97	.91	.91
Cost of Sales/lb	$ .55	.54	.54	.50	.50
Capacity - MM lbs	2.4	3.0	4.8	4.8	4.8
Excess	.5	.4	2.3	1.8	-
Internal Use	-	-	-	-	-
Sales	1.9	2.6	2.5	3.0	4.8

Return on investment is 15.5% in 1964, down from 18.4% in 1961. This is the result of significant price reductions following reductions in the chief competitive product (D L Methionine). In addition, there has been strong price pressure by competitive manufacturers in Europe who have been importing into domestic markets.

Cost reductions have been able to offset only a portion of this price decline but expanded volume is expected in the future to bring a gratifying increase in return. In spite of the somewhat depressed state of the poultry industry, increased product technology and knowledge of application should result in these expected volume increases being realized.

CONCENTRATED NITRIC ACID

($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ 1.0	2.3	3.4	4.3	4.9
Internal Use	$ 1.4	1.6	1.5	1.1	.7
Total	$ 2.4	3.9	4.9	5.4	5.6
For Sales:					
% ROI (after tax)	(2.0)	5.5	5.9	6.0	9.8
Sales	$ .5	2.0	1.8	1.8	2.7
Gross Profit	$ -	.4	.5	.7	1.2
SARE	$ .1	.1	.1	.2	.2
Other Income	$ -	-	-	-	-
Division Contribution	$(.1)	.3	.4	.5	1.0
As % of Sales:					
Division Contribution	(7.8)	13.1	23.6	29.1	36.2
Gross Profit	.8	20.1	31.0	37.4	43.3
SARE	8.5	7.0	7.4	8.2	7.1
$ Sales/$ Investment	.52	.87	.52	.41	.54
Selling Price/Ton	$ 59	67	65	55	55
Cost of Sales/Ton	$ 58	54	45	35	31
Capacity - M Tons	11	47	45	58	58
Excess	(7)	12	2	16	-
Internal Use	12	15	16	10	10
Sales	6	20	27	32	48

Small quantities of concentrated nitric acid are sold to customers and it is also used to strengthen regular nitric acid for sale as 42° Bé. acid. The larger portion of sales is to Mobay under existing long term contracts. Internal use is in the Organic Division for manufacture of nitrated organic compounds. Both outlets are expected to grow at satisfactory rates.

Even though selling prices have declined from $59/ton in 1961 to a forecasted $55/ton in 1964, return on investment has improved to 6.0%. This has been the effect of lower cost of our new regular and concentrated nitric acid plants installed over the last few years. Because of the high ratio of fixed to total cost in these plants the increased volume has lowered unit costs substantially and the future growth in volume will further reduce these to provide a return on investment of about 10%.

NITROGEN SOLUTIONS
($ in Millions)

		Actual			1964	
		1961	1962	1963	Budget	Cap'ty
Gross Invest. -	Sales	$14.1	15.6	15.2	16.8	31.9
	Internal Use	$ -	-	-	-	-
	Total	$14.1	15.6	15.2	16.8	31.9
For Sales:						
% ROI (after tax)		6.1	5.2	6.2	5.7	7.1
Sales		$ 7.1	6.1	6.7	6.6	13.9
Gross Profit		$ 2.4	2.1	2.4	2.5	5.4
SARE		$ .6	.4	.4	.6	.9
Other Income		$ -	-	-	-	-
Division Contribution		$ 1.8	1.7	2.0	1.9	4.5
As % of Sales:						
Division Contribution		25.2	27.8	29.5	29.0	32.6
Gross Profit		33.6	34.4	36.6	37.2	39.1
SARE		8.5	7.0	7.4	8.2	6.5
$ Sales/$ Investment		.50	.39	.44	.39	.44
Selling Price/Ton		$ 52	51	48	48	48
Cost of Sales/Ton		$ 35	34	30	30	29
Capacity - M Tons		320	320	290	290	290
Excess		184	202	150	152	-
Internal Use		-	-	-	-	-
Sales		136	118	140	138	290

Return on investment has remained relatively stable at about 6%. 1964 return is projected at slightly lower because of higher investment charged per ton of ammonia contained. Selling prices have declined in the period covered (from $52/ton to $48/ton) but this has been more then offset by the lower cost which has the effect of slightly increasing the per ton margin.

PARATHIONS
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$12.9	14.4	16.1	18.2	18.3
Internal Use	$ -	-	-	.1	.1
Total	$12.9	14.4	16.1	18.3	18.4
For Sales:					
% ROI (after tax)	9.8	11.1	15.7	13.6	13.8
Sales	$ 9.7	9.9	13.3	13.4	13.6
Gross Profit	$ 4.0	4.9	7.0	6.8	6.9
SARE	$ 1.5	1.6	1.9	1.8	1.8
Other Income	$ .1	-	.1	-	-
Division Contribution	$ 2.6	3.3	5.2	5.0	5.1
As % of Sales:					
Division Contribution	27.3	33.6	39.3	37.2	37.3
Gross Profit	41.7	49.4	52.6	50.4	50.4
SARE	15.3	16.0	13.8	13.3	13.2
$ Sales/$ Investment	.75	.69	.83	.74	.75
Selling Price/lb	$ .62	.65	.67	.64	.64
Cost of Sales/lb	$ .36	.33	.32	.32	.32
Capacity - MM lbs	18.0	20.4	19.5	21.4	21.4
Excess	2.3	5.1	(.5)	.3	-
Internal Use	-	-	-	.3	.3
Sales	15.7	15.3	20.0	20.8	21.1

Return on investment is improving at an excellent rate from under 10% in 1961 to 13.6% forecast for 1964. Even 1964 is conservatively stated since 1964 capital includes the $3.0MM expansion to 36.0MM/lbs. per year, the benefits of which will not be realized until 1965.

Yield and other manufacturing cost improvements over the last few years have brought significant decreases in unit costs. The trend of parathion sales prices has been upward for the last five years, however, price reductions are expected in the domestic market in the future as tariffs are reduced or completely eliminated.

Dynamic growth in demand for these insecticides is expected over the next three to five years. Major insect pests are becoming resistant to chlorinated hydrocarbon insecticides which will open significant insecticide markets to parathion.

RANDOX GRANULAR
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ 1.9	2.2	3.4	3.7	3.8
Internal Use	$ -	-	-	-	-
Total	$ 1.9	2.2	3.4	3.7	3.8
For Sales:					
% ROI (after tax)	2.7	4.9	8.6	11.9	15.1
Sales	$ 1.0	1.4	2.3	3.2	4.0
Gross Profit	$ .3	.4	.9	1.3	1.6
SARE	$ .2	.2	.3	.4	.5
Other Income	$ -	-	-	-	-
Division Contribution	$ .1	.2	.6	.9	1.1
As % of Sales:					
Division Contribution	11.2	15.9	26.8	27.7	29.0
Gross Profit	26.6	31.9	40.6	41.0	40.6
SARE	15.3	16.0	13.8	13.3	11.6
$ Sales/$ Investment	.51	.64	.67	.86	1.04
Selling Price/lb	$ .30	.30	.32	.32	.32
Cost of Sales/lb	$ .22	.20	.19	.19	.19
Capacity - MM lbs	12.4	12.4	12.4	12.4	12.4
Excess	9.2	7.7	5.2	2.6	-
Internal Use	-	-	-	-	-
Sales	3.2	4.7	7.2	9.8	12.4

The return on investment has risen from marginal to excellent (2.7% in 1961 to 11.9% forecast for 1964). Continued sales growth is expected at a rate of about 20% per year through 1968. This growth is expected because of the good reputation Randox has developed for consistent, effective weed control and crop safety. In addition, the market for pre-emergence herbicides has now matured and farmers readily accept the concept of controlling weeds before they emerge. New uses, such as weed control in sugar cane with Randox/2,4-D mixtures, are being developed which will add meterially to future sales.

A new CDAA plant is being constructed at Muscatine replacing the interim facilities at the Queeny plant. This new installation will offer improvements in manufacturing costs and a location value of being near the market center.

RANDOX LIQUID
($ in Millions)

		Actual			1964	
		1961	1962	1963	Budget	Cap'ty
Gross Invest. -	Sales	$ .8	.9	1.0	1.1	1.2
	Internal Use	$ -	-	-	-	-
	Total	$ .8	.9	1.0	1.1	1.2
For Sales:						
% ROI (after tax)		1.3	7.3	7.6	7.5	14.7
Sales		$ .5	.8	.8	.7	1.3
Gross Profit		$ .1	.3	.3	.3	.5
SARE		$ .1	.1	.1	.1	.1
Other Income		$ -	-	-	-	-
Division Contribution		$ -	.2	.2	.2	.4
As % of Sales:						
Division Contribution		4.1	17.2	19.3	22.5	26.4
Gross Profit		19.3	33.3	33.1	35.8	35.8
SARE		15.3	16.0	13.8	13.3	9.4
% Sales/$ Investment		.64	.88	.81	.67	1.11
Selling Price/Gal		$5.34	5.57	5.82	5.86	5.86
Cost of Sales/Gal		$4.30	3.71	3.89	3.76	3.76
Capacity - MM Gals		.2	.2	.2	.2	.2
Excess		.1	.1	.1	.1	-
Internal Use		-	-	-	-	-
Sales		.1	.1	.1	.1	.2

This formulated herbicide has shown excellent growth with return on investment increasing from 1.3% in 1961 to 7.5% in 1964. Sales of the liquid material are expected to grow but at a rate somewhat lower than that of the Randox granule.

Sales prices have increased from an average of $5.34/gallon in 1961 to a forecasted average of $5.86/gallon in 1964. These prices are generally based on the economic value to the farmer rather than supply-demand factors and Randox can economically justify these higher price levels.

ROGUE
($ in Millions)

		Actual			1964	
		1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales		$ -	1.2	3.7	3.9	4.1
Internal Use		$ -	-	-	-	-
Total		$ -	1.2	3.7	3.9	4.1
For Sales:						
% ROI (after tax)		-	9.6	19.9	23.6	28.5
Sales		$ -	.6	2.1	2.9	3.9
Gross Profit		$ -	.3	1.4	2.1	2.8
SARE		$ -	.1	.3	.4	.4
Other Income		$ -	-	-	-	-
Division Contribution		$ -	.2	1.1	1.7	2.4
As % of Sales:						
Division Contribution		-	44.6	53.7	57.8	60.0
Gross Profit		-	60.7	67.5	71.1	71.1
SARE		-	16.0	13.8	13.3	11.1
$ Sales/$ Investment		-	.45	.56	.74	.95
Selling Price/Gal		$ -	10.77	10.80	10.38	10.38
Cost of Sales/Gal		$ -	4.23	3.51	3.00	3.00
Capacity - MM Gals		-	.3	.4	.4	.4
Excess		-	.2	.2	.1	-
Internal Use		-	-	-	-	-
Sales		-	.1	.2	.3	.4

This product has made a spectacular contribution to division profits and is forecast as producing a 23.6% return on investment in 1964. It has achieved widespread acceptance by rice growers for post-emergence treatment of barnyard grass and certain broadleaf weeds, and has very little competition in this area.

The outlook for this product is favorable since it is improbable that Rogue would become obsolete due to superior performance of a newly developed product. The possibility exists that a cheaper product might be introduced; however, Rogue could still be profitable at a lower price due to Monsanto's basic position in the manufacture of 3-4-dichloroaniline.

SANTOQUIN LIQUID
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ 1.2	1.7	2.4	2.6	3.5
Internal Use	$ .3	.7	.8	.7	.2
Total	$ 1.5	2.4	3.2	3.3	3.7
For Sales:					
% ROI (after tax)	10.3	16.7	17.8	22.4	34.7
Sales	$ 1.0	1.5	1.9	2.4	4.6
Gross Profit	$ .4	.8	1.1	1.5	2.9
SARE	$ .1	.2	.2	.3	.4
Other Income	$ -	-	-	-	-
Division Contribution	$ .3	.6	.9	1.2	2.5
As % of Sales:					
Division Contribution	27.0	37.8	47.3	48.3	52.2
Gross Profit	42.4	53.8	60.1	61.7	61.5
SARE	15.4	16.0	13.8	13.3	9.3
$ Sales/$ Investment	.80	.92	.78	.93	1.33
Selling Price/lb	$1.10	1.08	1.04	1.04	1.04
Cost of Sales/lb	$ .63	.50	.42	.40	.40
Capacity - MM lbs	5.4	5.0	5.0	5.4	5.4
Excess	4.0	2.8	2.3	2.2	-
Internal Use	.5	.8	.9	.9	.9
Sales	.9	1.4	1.8	2.3	4.5

Return on investment has increased since 1961 to 17.8% in 1963 and 22.4% forecast for 1964. Increased volume and substantially reduced costs have more than offset selling price reductions to achieve these results.

The reduction in costs reflect lower costs of Santoflex AW, production efficiencies and the introduction of bulk product handling. Volume increases have been achieved by creating a profitable climate (by price reductions) for distributors. This program has enabled Monsanto to utilize the services of nationally recognized pre-mix companies in reaching the desired markets.

Product acceptance has been good and the outlook for the future is extremely favorable as research claims that Santoquin is a superior feed antioxidant are documented by experience.

2, 4-D ACID
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ 5.4	5.2	5.3	5.6	5.9
Internal Use	$ 2.2	2.3	2.1	1.9	1.7
Total	$ 7.6	7.5	7.4	7.5	7.6
For Sales:					
% ROI (after tax)	1.3	1.4	2.0	4.8	5.4
Sales	$ 2.9	2.6	2.8	3.0	3.4
Gross Profit	$ .6	.6	.6	.9	1.1
SARE	$ .4	.4	.4	.4	.4
Other Income	$ -	-	-	-	-
Division Contribution	$ .2	.2	.2	.5	.7
As % of Sales:					
Division Contribution	5.2	5.9	7.9	18.3	18.6
Gross Profit	20.6	21.9	21.7	31.6	30.8
SARE	15.4	16.0	13.8	13.3	12.1
$ Sales/$ Investment	.53	.51	.53	.53	.58
Selling Price/lb	$ .29	.28	.28	.26	.26
Cost of Sales/lb	$ .23	.22	.22	.18	.18
Capacity - MM lbs	21.6	19.2	19.2	19.2	19.2
Excess	6.4	4.7	2.4	1.8	-
Internal Use	5.3	5.0	6.9	5.9	5.9
Sales	9.9	9.5	9.9	11.5	13.3

The 4.8% return on investment projected for 1964 represents a sharp increase from the 1-2% levels of earlier years. This increase will come from lower costs resulting from the reduced cost of Dichlorophenol and its intermediates. A projected increase in sales volume will also contribute.

Selling prices have remained relatively firm though some attrition is recognized in the 1964 projection. The history of the growth in the commodity sale of this product is not spectacular but it is steady. The development of specialty weed herbicides is a factor which would tend to preclude rapid growth. The future should show a greater share of 2,4-D acid capacity being diverted to formulations with a resulting increase in overall profits.

2,4,5-T ACID
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ 1.7	2.0	2.4	1.8	2.1
Internal Use	$ .4	.9	.4	1.0	.8
Total	$ 2.1	2.9	2.8	2.8	2.9
For Sales:					
% ROI (after tax)	3.1	4.2	(2.3)	9.3	11.6
Sales	$ 1.5	1.7	1.7	1.5	2.0
Gross Profit	$ .3	.4	.1	.5	.7
SARE	$ .2	.2	.2	.2	.2
Other Income	$ -	-	-	-	-
Division Contribution	$ .1	.2	(.1)	.3	.5
As % of Sales:					
Division Contribution	7.6	10.3	(7.0)	22.6	24.4
Gross Profit	23.0	26.3	6.8	35.9	35.7
SARE	15.4	16.0	13.8	13.3	11.3
$ Sales/$ Investment	.85	.85	.70	.82	.95
Selling Price/lb	$ .93	.91	.84	.84	.84
Cost of Sales/lb	$ .72	.67	.79	.54	.54
Capacity - MM lbs	2.2	2.2	2.8	4.0	4.0
Excess	.1	(.6)	.3	.6	-
Internal Use	.5	1.0	.6	1.6	1.6
Sales	1.6	1.8	1.9	1.8	2.4

Return on investment is projected at 9.3% for 1964, up from 3.1% in 1961 and from the 2.3% loss in 1963. This increase will result as the lower costs expected of the new plant installed in 1963 are realized. This substantial cost reduction will more than offset the sharp selling price reduction felt in 1963 (from 91 to 84 ¢/lb.).

The 1963 loss was the result of the aforementioned decrease in selling prices coupled with the cost of an extremely difficult and expensive start-up of the new plant.

This is an established growing herbicide for control of brush and woody plants. It has an excellent cost/performance relationship and will not be replaced in its principal markets by any future product. The outlook for increased use in existing and newly developing forestry markets is extremely favorable. Monsanto costs have been high and national capacity generally sold out so that the market has never been fully exploited.

UREA PRILLS
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ 4.9	5.1	5.4	8.1	8.3
Internal Use	$ .2	-	.1	.4	.3
Total	$ 5.1	5.1	5.5	8.5	8.6
For Sales:					
% ROI (after tax)	2.5	2.4	3.7	4.4	5.7
Sales	$ 2.8	3.4	3.0	3.1	3.7
Gross Profit	$ .5	.5	.6	1.0	1.2
SARE	$ .2	.2	.2	.3	.3
Other Income	$ -	-	-	-	-
Division Contribution	$ .3	.3	.4	.7	.9
As % of Sales:					
Division Contribution	9.3	7.7	14.0	23.2	25.8
Gross Profit	17.8	14.7	20.9	31.4	33.5
SARE	8.4	7.0	7.4	8.2	7.7
$ Sales/$ Investment	.57	.66	.55	.38	.44
Selling Price/Ton	$ 79	81	78	78	78
Cost of Sales/Ton	$ 65	69	62	54	52
Capacity - M Tons	40	40	49	49	49
Excess	4	(2)	10	8	-
Internal Use	2	-	1	2	2
Sales	34	42	38	39	47

Return on investment is increasing to 4.4% in 1964 from 2.5% in 1961. Since selling prices have remained relatively stable this improvement comes from a reduction in cost resulting from the increased volume projected and the gradual elimination of purchased material.

In agriculture there is a growing awareness that urea is an economical source of nitrogen. In rice it is rapidly becoming the predominant fertilizer since it is more efficient for aerial application and leaches less rapidly in water. The demand outlook for feed urea as a protein supplement for ruminant cattle is favorable as cattle population in Texas and Oklahoma will increase and urea's principal competition, soybean meal prices will remain high.

CHEMSTRAND DIVISION

Division profitability has been ($MM's)

	Actual			1964
	1961	1962	1963	Budget
% Return on Investment AT	10.0	10.4	9.4	10.8
Gross Investment	339.0	400.3	489.7	550.0
Sales	225.6	265.5	285.0	312.7
Division Contribution BT	70.7	86.5	95.3	118.3
Div. Cont. as % of Sales	31.3	32.6	33.4	37.8
$ Sales/$ Investment	.67	.66	.58	.57

In 1963 investment in the divisions' products earned the following rates of return:

	% of Total Investment
Loss	.7
0 to 3%	-
3 to 5.8%	12.6
Over 5.8%	86.7

Major products reported are:

	Page
Acrilan - Total	18a
Acrilan - Carpet	19
Acrilan - Continuous Filament	20
Acrilan - Solution Dyed	21
Acrilan - Textile	22
Nylon - Total	22a
Nylon - Industrial	23
Nylon - Textile	24
Nylon - Textured	25
Nylon - Tire	26

These comprise 100% of the divisions' investment in 1963.

ACRILAN - TOTAL
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$85.5	89.8	105.0	118.9	118.9
Internal Use	$ -	-	-	-	-
Total	$85.5	89.8	105.0	118.9	118.9
For Sales:					
% ROI (after tax)	(.7)	2.7	4.6	8.4	8.4
Sales	$26.4	34.8	48.0	59.0	59.0
Gross Profit	$ 9.6	17.1	23.4	33.8	33.8
SARE	$12.1	12.7	14.5	15.3	15.3
Other Income	$ .4	.7	1.2	1.5	1.5
Division Contribution	$(2.1)	5.1	10.1	20.0	20.0
As % of Sales:					
Division Contribution	(7.8)	14.6	21.1	33.9	33.9
Gross Profit	36.6	49.0	48.8	57.2	57.2
SARE	45.8	36.4	30.3	25.9	25.9
$ Sales/$ Investment	.31	.39	.46	.50	.50
Selling Price/lb	$ .94	.84	.77	.80	.80
Cost of Sales/lb	$ .59	.43	.39	.34	.34
Capacity - MM lbs	59.4	60.9	67.8	74.0	74.0
Excess	31.2	19.3	5.5	-	-
Internal Use	-	-	-	-	-
Sales	28.2	41.6	62.3	74.0	74.0

The above figures reflect total Acrilan sales by Chemstrand including fiberstock and by-products. The increase in ROI and $ Sales/$ Investment reflect the increased volume. Price erosion has been effectively combatted with greater cash reduction, yielding higher ratios on gross profit as a percent of sales each year. Presently the major problem is producing enough fiber to meet the demand. The approved expansion program will help meet this problem as well as reduce cost to nullify price erosion.

ACRILAN - CARPET
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$23.6	33.1	57.2	60.4	60.4
Internal Use	$ -	-	-	-	-
Total	$23.6	33.1	57.2	60.4	60.4
For Sales:					
% ROI (after tax)	(2.1)	1.0	4.1	7.6	7.6
Sales	$ 6.3	11.6	25.4	30.7	30.7
Gross Profit	$ 1.8	5.2	12.3	17.0	17.0
SARE	$ 3.0	4.8	8.2	8.7	8.7
Other Income	$ .1	.3	.7	.9	.9
Division Contribution	$(1.1)	.7	4.8	9.2	9.2
As % of Sales:					
Division Contribution	(16.9)	5.8	19.0	29.9	29.9
Gross Profit	29.4	45.0	48.5	55.4	55.4
SARE	42.8	41.5	32.1	28.3	28.3
$ Sales/$ Investment	.26	.35	.44	.51	.51
Selling Price/lb	$ .85	.73	.73	.73	.73
Cost of Sales/lb	$ .60	.40	.37	.32	.32
Capacity - MM lbs	22.8	22.9	34.1	42.2	42.2
Excess	15.5	7.0	(.9)	-	-
Internal Use	-	-	-	-	-
Sales	7.3	15.9	35.0	42.2	42.2

1962 - ROI at 1.0%. Investment increased 40% but contribution was a gain compared to previous loss. Investment gain reflecting previously increased facilities for carpet. Revenues up with large volume gain. Prices somewhat lower with list price reductions. Costs favorably affected by large production volume gain.

1963 - ROI increased significantly to 4.1%. Investment continued up with larger use of facilities on carpet manufacture. Revenue more than doubled with volume gain at no price decrease.

1964 Budget & Capacity - ROI again increasing to 7.6%. Volume of sales and production expected to continue sizeable increases. Gain in contribution afforded by increased revenues and lowered cost of sales per pound.

ACRILAN - CONTINUOUS FILAMENT

($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ -	-	3.4	4.7	4.7
Internal Use	$ -	-	-	-	-
Total	$ -	-	3.4	4.7	4.8
For Sales:					
% ROI (after tax)	-	-	(11.9)	2.0	2.0
Sales	$ -	-	.1	1.9	1.9
Gross Profit	$ -	-	(.8)	.4	.4
SARE	$ -	-	-	.2	.2
Other Income	$ -	-	-	-	-
Division Contribution	$ -	-	(.8)	.2	.2
As % of Sales:					
Division Contribution	-	-	-	10.3	10.3
Gross Profit	-	-	-	20.4	20.4
SARE	-	-	11.8	11.1	11.1
$ Sales/$ Investment	-	-	.02	.39	.39
Selling Price/lb	$ -	-	2.13	1.85	1.85
Cost of Sales/lb	$ -	-	-	1.47	1.47
Capacity - MM lbs	-	-	5.0	1.0	1.0
Excess	-	-	4.9	-	-
Internal Use	-	-	-	-	-
Sales	-	-	.1	1.0	1.0

1964 Budget & Capacity - 1963 loss operation expected to yield small contribution in 1964. Sweater program should provide a 2.1% ROI for this product.

ACRILAN - SOLUTION DYED
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ 2.7	8.1	4.5	6.2	6.2
Internal Use	$ -	-	-	-	-
Total	$ 2.7	8.1	4.5	6.2	6.2
For Sales:					
% ROI (after tax)	.6	3.8	4.5	5.8	5.8
Sales	$ .8	2.7	2.0	2.4	2.4
Gross Profit	$ .3	1.3	.9	1.2	1.2
SARE	$ .3	.7	.5	.5	.5
Other Income	$ -	.1	-	-	-
Division Contribution	$ -	.7	.4	.7	.7
As % of Sales:					
Division Contribution	4.2	23.9	20.7	29.5	29.5
Gross Profit	37.3	48.9	42.8	49.1	49.1
SARE	34.2	26.5	24.1	21.6	21.6
$ Sales/$ Investment	.30	.34	.45	.39	.39
Selling Price/lb	$1.19	1.15	.97	.95	.95
Cost of Sales/lb	$ .75	.59	.55	.48	.48
Capacity - MM lbs	1.6	3.1	3.3	2.6	2.6
Excess	.9	.7	1.2	-	-
Internal Use	-	-	-	-	-
Sales	.7	2.4	2.1	2.6	2.6

1962 - ROI at 3.8% compared to previous year .6%. Large gain in volume resulted in increased division contribution with price levels holding and cost of sales (per lb.) down 21%.

1963 - ROI little changed at 4.5%. Investment and overhead down, the result of their absorption by Acrilan carpet, profit contribution down 35%, resulting from an 18¢/lb. decrease in selling price. Only partially offset by a 4¢ decrease in costs.

1964 - ROI increases 1.3% to 5.8%. Division contribution up 70% as the result of increased sales volume and lower costs. Only slightly offset by decreased prices.

ACRILAN - TEXTILE
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$59.2	48.5	39.9	47.5	47.5
Internal Use	$ -	-	-	-	-
Total	$59.2	48.5	39.9	47.5	47.5
For Sales:					
% ROI (after tax)	(.3)	3.9	6.8	9.6	9.6
Sales	$19.1	20.4	19.5	23.2	23.2
Gross Profit	$ 7.4	10.5	10.6	14.4	14.4
SARE	$ 8.0	7.0	5.4	5.9	5.9
Other Income	$ .3	.4	.4	.6	.6
Division Contribution	$ (.3)	3.9	5.6	9.1	9.1
As % of Sales:					
Division Contribution	(1.7)	19.3	28.9	39.1	39.1
Gross Profit	38.8	51.8	54.1	61.9	61.9
SARE	41.8	34.4	27.6	25.2	25.2
$ Sales/$ Investment	.32	.42	.49	.49	.49
Selling Price/lb	$1.02	.87	.88	.82	.82
Cost of Sales/lb	$ .62	.42	.40	.31	.31
Capacity - MM lbs	35.0	35.0	25.5	28.3	28.3
Excess	16.2	11.5	3.3	-	-
Internal Use	-	-	-	-	-
Sales	18.8	23.5	22.2	28.3	28.3

1962 - ROI at 3.9% (no return previous year). Investment decrease due to greater use of facilities in carpet production. Revenues up with volume more than offsetting list price decrease. Cost reduced significantly with increased production volume, lower raw material.

1963 - ROI up to 6.8%. Investment reduced but generating 43% more contribution. Investment continuing to reduce with facilities used by carpet production. SARE expenses down due to greater allocation of overhead to other Acrilan products.

1964 Budget & Capacity - ROI increasing to 9.6% (up 2.8%). Investment up 19%, contribution 61%. Investment up with increasing level of textile facility usage. Revenue up with volume gains more than offsetting expected price erosion. Cost decreases expected with decreased fixed cost levels associated with volume and improved efficiencies.

NYLON - TOTAL
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$254.2	311.4	384.7	433.8	461.2
Internal Use	$ -	-	-	-	--
Total	$254.2	311.4	384.7	438.8	461.2
For Sales:					
% ROI (after tax)	13.7	12.8	11.1	11.9	16.7
Sales	$199.2	229.1	236.7	250.0	313.2
Gross Profit	$ 96.3	108.9	116.0	130.9	181.6
SARE	$ 23.5	26.9	27.7	28.2	28.2
Other Income	$ -	.8	.7	.9	.9
Division Contribution	$ 72.8	82.8	89.0	103.6	154.3
As % of Sales:					
Division Contribution	36.5	36.1	37.6	41.4	49.2
Gross Profit	48.3	47.5	49.0	52.4	57.9
SARE	11.8	11.8	11.7	11.3	9.0
$ Sales/$ Investment	.78	.74	.62	.58	.68
Selling Price/lb	$ 1.25	1.28	1.20	1.16	1.16
Cost of Sales/lb	$ .65	.67	.61	.55	.49
Capacity - MM lbs	180.2	197.0	251.0	270.0	270.0
Excess	21.3	17.3	53.9	55.3	-
Internal Use	-	-	-	-	-
Sales	158.9	179.7	197.1	214.7	270.0

The above figures reflect total nylon sales by Chemstrand including fiberstock and by-products. The decreases in ROI and $ Sales/$ Investment ratios reflect the large allocation of investment from other divisions to Chemstrand. The reduction in cost during 1963 reflects the expansion of capacity at the plants. The 1964 reduction is primarily attributable to the completion of the royalty agreement with Du Pont. The present plans are to expand nylon operations with increased emphasis in the overseas area. The presently approved plant expansions will further reduce our costs and should enable us to supply more than our domestic customers. SARE expenses will be reduced as a percent of sales, not being directly related to the sales revenue.

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NYLON - INDUSTRIAL
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$21.0	26.1	40.4	35.4	36.8
Internal Use	$ -	-	-	-	-
Total	$21.0	26.1	40.4	35.4	36.8
For Sales:					
% ROI (after tax)	12.6	9.6	5.5	6.4	10.1
Sales	$15.5	17.1	20.3	17.2	17.5
Gross Profit	$ 6.9	7.3	7.3	6.8	9.7
SARE	$ 1.4	2.2	2.8	2.2	2.2
Other Income	$ -	.1	.1	-	-
Division Contribution	$ 5.5	5.2	4.6	4.6	7.5
As % of Sales:					
Division Contribution	35.7	30.6	22.7	26.4	42.7
Gross Profit	44.5	43.0	35.9	39.3	55.4
SARE	8.8	12.9	13.6	12.9	12.8
$ Sales/$ Investment	.74	.65	.50	.49	.47
Selling Price/lb	$1.19	1.17	1.01	.97	.97
Cost of Sales/lb	$ .66	.67	.65	.59	.43
Capacity - MM lbs	14.0	16.0	21.0	18.0	18.0
Excess	1.0	1.4	1.0	.2	-
Internal Use	-	-	-	-	-
Sales	13.0	14.6	20.0	17.8	18.0

1962 - ROI down 3.0% with investment increasing 25% and no gain in division contribution. Investment increased with more facilities, buy-in allocation, and outside investments.

1963 - ROI almost halved (down to 5.5%). Investment up 55% with contribution down slightly. Investment - greatly increased with expanded facilities and buy-in allocation. Revenues - up with higher volume offset partially with much lower sales prices.

1964 Budget - ROI up slightly to 6.4%. Investment off 12% with contribution remaining about same. Investment down due to facilities switch. Revenues off slightly with reduced volume and prices. Cost of sales reduced with improving manufacturing efficiencies.

1964 Capacity - ROI up considerably. Investment about same as previous year with large contribution gain. Cost of sales reduced to large degree by manufacture at standard yields and efficiency.

NYLON - TEXTILE
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$137.4	164.0	213.1	250.7	263.4
Internal Use	$ -	-	-	-	-
Total	$137.4	164.0	213.1	250.7	263.4
For Sales:					
% ROI (after tax)	17.2	16.4	12.9	13.7	17.9
Sales	$111.2	126.1	130.0	134.8	162.4
Gross Profit	$ 56.8	66.4	67.4	78.7	104.1
SARE	$ 7.7	11.1	10.5	10.7	10.7
Other Income	$ -	.6	.5	.9	.9
Division Contribution	$ 49.1	55.9	57.4	68.9	94.3
As % of Sales:					
Division Contribution	44.2	44.4	44.2	51.1	58.1
Gross Profit	51.1	52.7	51.8	58.3	64.1
SARE	6.9	8.8	8.1	7.9	6.6
$ Sales/$ Investment	.81	.77	.61	.54	.62
Selling Price/lb	$ 1.83	1.81	1.74	1.64	1.64
Cost of Sales/lb	$ .90	.86	.84	.68	.59
Capacity - MM lbs	65.0	70.0	88.0	99.0	99.0
Excess	4.3	.3	13.3	17.0	-
Internal Use	-	-	-	-	-
Sales	60.7	69.7	74.7	82.0	99.0

1962 - ROI down slightly (.8%). Investment increase of 20% with contribution up only 14%. Investment - increased plant and outside investments. Revenues - volume up but price down 2¢. Cost of sales down 4¢, but SARE up significantly with increased selling, advertising, and development expenses.

1963 - ROI down by 3.5%. Investment up 30% but contribution up only 3%. Investment - large increases in plant facilities and buy-in allocation. Revenues - about same as 1962 with price decrease of 4%. Cost of sales had only minor decrease (2¢).

1964 Budget - ROI up 0.8% to 13.7%. Investment increased 18% with contribution slightly exceeding at 20%. Investment - increased plant facilities and large outside investment. Revenues - volume increase significant but almost offset by anticipated price decrease (10¢/lb). Cost of sales to drop substantitally with increased efficiencies, higher production volume.

1964 Capacity - ROI would increase to above 1961 level (17.9%). Investment up 5% but contribution up by 37%. Capacity operation would increase potential sales volume, decrease costs with production volume gains and standard operating efficiencies.

NYLON - TEXTURED
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$22.6	32.5	26.3	35.1	36.4
Internal Use	$ -	-	-	-	-
Total	$22.6	32.5	26.3	35.1	36.4
For Sales:					
% ROI (after tax)	16.8	13.7	8.8	9.3	12.6
Sales	$18.4	23.0	15.1	16.5	20.0
Gross Profit	$ 9.3	11.5	6.3	8.3	10.9
SARE	$ 1.4	2.2	1.5	1.8	1.7
Other Income	$ -	-	-	-	-
Division Contribution	$ 7.9	9.3	4.8	6.5	9.2
As % of Sales:					
Division Contribution	43.1	40.4	31.8	39.5	46.0
Gross Profit	50.5	50.0	41.6	50.1	54.7
SARE	7.5	9.7	9.9	10.6	8.8
$ Sales/$ Investment	.81	.71	.58	.47	.55
Selling Price/lb	$1.44	1.44	1.36	1.18	1.18
Cost of Sales/lb	$ .71	.72	.79	.59	.53
Capacity - MM lbs	17.2	23.0	17.0	17.0	17.0
Excess	4.4	7.0	5.9	3.0	-
Internal Use	-	-	-	-	-
Sales	12.8	16.0	11.1	14.0	17.0

1962 - ROI down significantly (3.1%). Investment up 44% with contribution increase up only 18%. Investment - plant and outside investment increases Revenues - highest of any period with volume up and prices stable. Cost of sales increase slightly with SARE expenses up sharply due to increases in advertising, selling and development expenses.

1963 - ROI down drastically to 8.8%. Investment off 19% but contribution only one-half of previous year. Investment - off with facilities switch. Revenues - off sharply with volume decrease and reduced selling prices. Cost of sales per pound up 10% with lower volume.

1964 Budget - ROI about same as 1963. Investment up primarily through increased plant and outside investment. Revenues about same as previous year with volume increase offset by price drop. Cost of sales down drastically with production volume up and efficiencies improving.

1964 Capacity - ROI up by 3.3%. Investment 4% above budget level with contribution up 41%. Revenues up $3.5MM, result of increased sales volume but costs down with production volume increases and efficiency gains.

NYLON - TIRE
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$73.3	88.8	104.9	112.6	124.6
Internal Use	$ -	-	-	-	-
Total	$73.3	88.8	104.9	112.6	124.6
For Sales:					
% ROI (after tax)	8.8	6.7	6.0	7.7	16.5
Sales	$43.3	45.8	47.5	51.6	81.7
Gross Profit	$18.3	19.3	19.9	24.8	48.7
SARE	$ 4.8	6.9	6.9	7.5	7.5
Other Income	$ -	.1	-	-	-
Division Contribution	$13.5	12.5	13.0	17.3	41.2
As % of Sales:					
Division Contribution	31.2	27.2	27.4	33.5	50.5
Gross Profit	42.3	42.1	41.9	48.0	59.6
SARE	11.2	15.0	14.5	14.6	9.2
$ Sales/$ Investment	.59	.52	.45	.46	.68
Selling Price/lb	$ .91	.91	.91	.86	.86
Cost of Sales/lb	$ .52	.53	.53	.45	.35
Capacity - MM lbs	59.0	59.0	86.0	95.0	95.0
Excess	11.4	8.8	33.7	35.0	-
Internal Use	-	-	-	-	-
Sales	47.6	50.2	52.3	60.0	95.0

1962 - ROI down 2.1% with increased investment and a loss in contribution position. Investment up 21% for facility, buy-in, and outside investment. Cost and prices about same as previous year.

1963 - ROI down slightly to 6.0%. Investment increased 18%. Contribution about same as previous year with little change in cost of sales and prices.

1964 Budget - ROI increases to 7.7%. Investment not significantly increased - contribution up 33%. Revenues up greatly with large volume gain offset some by price decrease. Cost of sales down 8¢ with better facility utilization.

1964 Capacity - ROI increases to 16.5% as the result of a 58% increase in sales volume and a 10¢/lb. cost reduction resulting from more efficient utilization of facilities.

0633432

HYDROCARBONS DIVISION

Division profitability has been ($MM's)

	Actual			1964
	1961	1962	1963	Budget
% Return on Investment AT	3.4	1.9	2.7	3.6
Gross Investment	250.1	244.0	251.5	256.0
Sales	130.4	127.8	148.0	155.7
Division Contribution BT	14.4	6.8	12.3	16.1
Div. Cont. as % of Sales	11.0	5.3	8.3	10.3
$ Sales/$ Investment	.52	.52	.59	.61

In 1963 investment in the divisions' products earned the following rates of return:

	% of Total Investment
Loss	26.8
0 to 3%	12.3
3 to 5.8%	44.9
Over 5.8%	16.0

Major products reported are:

These comprise 100% of the divisions' investment in 1963.

ACRYLONITRILE
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$37.4	24.9	26.8	26.3	26.3
Internal Use	$ 3.0	18.6	19.5	25.0	25.0
Total	$40.4	43.5	46.3	51.3	51.3
For Sales:					
% ROI (after tax)	(1.6)	1.5	2.9	1.4	1.4
Sales	$ 8.6	9.1	11.4	10.3	10.3
Gross Profit	$ (.2)	1.3	1.9	1.2	1.2
SARE	$ 1.2	.6	.6	.6	.6
Other Income	$ .2	.1	.3	.1	.1
Division Contribution	$(1.2)	.8	1.6	.7	.7
As % of Sales:					
Division Contribution	(14.2)	8.8	14.3	7.2	7.2
Gross Profit	(3.1)	14.6	16.7	11.8	11.8
SARE	13.4	6.8	5.3	5.7	5.7
$ Sales/$ Investment	.20	.40	.40	.40	.40
Selling Price/lb	$.173	.147	.145	.143	.143
Cost of Sales/lb	$.181	.125	.121	.126	.126
Capacity - MM lbs	90.0	97.5	105.0	110.1	110.1
Excess	45.1	(5.6)	(35.3)	(33.7)	(33.7)
Internal Use	1.1(1)	48.0	65.5	76.0	76.0
Sales	43.8	55.1	74.8	67.8	67.8

(1) Chemstrand requirements of 23.9 MM lbs included in sales.

Demand mushroomed throughout 1963, forcing sustained high rates of operation. Increased world-wide acceptance of Acrilan, plus the decision to use acrylonitrile via new chemistry as a nylon intermediate and growth in plastics use, forced a December decision to build a new plant. This reflects as an investment increase in the 1964 budget.

For 1964 Monsanto continues to buy, sell, and use acrylonitrile to maintain our position of dominance in this chemical. As demand surged beyond supply, it is necessary to allocate acrylonitrile to both captive and outside users. Selling prices will exceed budget, due to the price rise occurring after budgets were cast. Unit costs are up, due to higher purchase price of resale acrylonitrile and increased use of purchased acetylene at Texas City.

The new plant is scheduled to be on stream in the first quarter of 1965.

BUTADIENE
($ in Millions)

		Actual			1964	
		1961	1962	1963	Budget	Cap'ty
Gross Invest. -	Sales	$ -	12.7	9.8	10.8	10.9
	Internal Use	$ -	-	-	.4	.4
	Total	$ -	12.7	9.8	11.2	11.3
For Sales:						
% ROI (after tax)		-	(2.6)	(2.8)	(.5)	1.8
Sales		$ -	1.6	6.3	6.9	7.1
Gross Profit		$ -	(.7)	(.3)	.4	.9
SARE		$ -	-	.3	.5	.5
Other Income		$ -	-	-	-	-
Division Contribution		$ -	(.7)	(.6)	(.1)	.4
As % of Sales:						
Division Contribution		-	(42.7)	(9.1)	(1.6)	5.9
Gross Profit		-	(42.3)	(4.7)	5.3	5.5
SARE		-	.6	4.4	6.9	6.7
$ Sales/$ Investment		-	.10	.60	.60	.70
Selling Price/lb		$ -	.100	.094	.091	.091
Cost of Sales/lb		$ -	.142	.098	.087	.080
Capacity - MM lbs		-	13.3	80.6	80.6	80.6
Excess		-	(2.6)	10.3	2.7	-
Internal Use		-	-	3.5	3.0	3.0
Sales		-	15.9	66.8	74.9	77.6

1963 was the first full year of production in Chocolate Bayou. Volume improvements in 1964, and general improvements in Chocolate Bayou operations contribute to cost reductions in 1964, and a marked profit improvement despite lower selling prices. A significant portion of the volume will be achieved by conversion of other C4's.

For the future, continued price pressure is predicted, although the bottom is expected to be near.

0633435

ETHYLENE AND CO-PRODUCTS
($ in Millions)

		Actual			1964	
		1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales		$ 57.8	33.8	33.3	32.6	33.6
	Internal Use	$ -	55.8	62.7	63.1	63.1
	Total	$ 57.8	89.6	96.0	95.7	96.7
For Sales:						
% ROI (after tax)		(.1)	(10.8)	(5.8)	(1.2)	4.7
Sales		$ 13.9	3.9	13.3	18.3	26.4
Gross Profit		$ 1.9	(5.3)	(2.8)	.7	4.7
SARE		$ 2.0	2.3	1.4	1.7	1.8
Other Income		$ -	-	.2	.2	.2
Division Constribution		$ (.1)	(7.6)	(4.0)	(.8)	3.1
As % of Sales:						
Division Contribution		(.5)	-	(30.4)	(4.4)	11.9
Gross Profit		13.9	-	(21.3)	3.7	17.9
SARE		14.5	60.5	10.4	9.0	6.6
$ Sales/$ Investment		.20	.10	.40	.60	.80
Selling Price/lb Ethylene		$ .051	-	.048	.045	.045
Cost of Sales/lb Ethylene		$ .044	-	.048	.041	.039
Capacity - MM lbs	Ethylene	165.0	248.3	601.4	601.4	601.4
Excess	Ethylene	(107.8)	(87.6)	144.9	67.5	-
Internal Use	Ethylene	-	335.9	399.9	451.3	451.3
Sales	Ethylene	272.8(1)	-	56.6	82.6	150.1

(1) All Interdivision Sales.

A multiplicity of plant performance problems led to continuing losses in 1963. Quality problems plus unexpectedly high volumes of some of the less valuable products also depressed sales. Significant volumes were sold at disposal prices.

Technical effort was high throughout the year and certain of the problems are responding favorably. Hence improvement in operations and higher volumes are forecasted to produce a marked improvement in the profit picture, but coupled with continued price erosion, a net loss is again forecast. While a massive effort continues to improve the situation, no dramatic changes are expected, as the ills are due to such a variety and number of problems.

PRODUCTION AND EXPLORATION
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$72.4	72.3	74.3	81.9	
Internal Use	$ -	-	-	-	
Total	$72.4	72.3	74.3	81.9	
For Sales:					
% ROI (after tax)	7.2	4.2	3.6	3.7	
Sales	$27.5	24.0	23.7	24.0	
Gross Profit	$ 5.4	1.6	3.0	2.7	
SARE	$ .7	.4	.5	.5	
Other Income	$ -	-	-	-	
Depletion etc. Tax Credit	$ 3.0	2.4	1.4	2.0	
Division Contribution	$ 7.7	3.6	3.9	4.2	
As % of Sales:					
Division Contribution	28.0	15.1	16.6	17.3	
Gross Profit	19.7	6.5	12.6	11.4	
SARE	2.4	1.7	2.2	2.3	
$ Sales/$ Investment	.40	.30	.30	.30	
Sales - Crude Oil - MM Bbls	8.0	7.0	6.5	6.3	
Natural Gas - MM MCF	22.6	23.1	27.2	32.0	
LPG - MM Bbls	.9	.8	.7	.7	

Profits were adversely affected because (1) revenue was down due to several important pressure maintenance projects performing at lower than anticipated levels; (2) relatively high rates of natural decline in productivity from Mon Ven's property; (3) less than satisfactory exploration program which failed to provide adequate opportunities for high revenue producing development drilling; (4) loss in income tax credits; and (5) reduction in price of crude oil.

Costs were reduced as a result of significant economies overhead and operating expenses. During the next three years it is not anticipated that changes made in our programs will provide noticeable improvement in either profits or % ROI above the 1963 level. Improvements will issue from increased revenues from both the pressure maintenance program on Mon Ven's property and gas sales from reserves now awaiting market. Among the principal problems are competition for both exploration prospects and producing property acquisitions and the cost price squeeze.

Plans for improvement are (1) the application of improved exploration techniques; (2) increased emphasis on new oil recovery methods; and (3) producing property acquisitions.

0633437

REFINERY
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$36.2	35.4	38.6	37.3	37.3
Internal Use	$ -	1.2	1.2	1.2	1.2
Total	$36.2	36.6	39.8	38.5	38.5
For Sales:					
% ROI (after tax)	.7	3.0	3.8	4.8	4.8
Sales	$58.2	54.4	58.5	59.4	59.4
Gross Profit	$ 1.8	3.3	4.1	4.8	4.8
SARE	$ 1.3	1.1	1.1	1.2	1.2
Other Income	$ -	-	-	-	-
Division Contribution	$ .5	2.2	3.0	3.6	3.6
As % of Sales:					
Division Contribution	.9	4.1	5.2	6.1	6.1
Gross Profit	3.0	6.1	6.9	8.0	8.0
SARE	2.2	2.0	1.8	2.0	2.0
$ Sales/$ Investment	1.50	1.50	1.60	1.60	1.60
Selling Price/bbl	$4.08	4.05	4.08	4.10	4.10
Cost of Sales/bbl	$3.97	3.80	3.78	3.74	3.74
Sales - Refined Oils - MM bbls	12.9	12.2	12.5	12.5	12.5

Improvement in profitability is due primarily to a decrease of 12¢ per bbl. in price of crude in 1962 and a gradual increase in share of import quota being credited to refinery operations. Selling prices have declined but on average an overall gain of about 2¢ per bbl. in sales revenue has been effected by improved product mix. With U.S. refining capacity estimated to exceed demand by 15-20% for the next five years, there is little likelihood of material price improvement for gasoline, middle distillates and residual fuel which comprise 80% of refinery production. Biggest opportunity for improving profitability lies in projected growth of paving and specialty grades of asphalt and better market selectivity for gasoline and diesel fuel. Chances for improved asphalt profitability are excellent due to proximity of low cost but high quality asphalt crude and manufacturing know-how. Better market selectivity for gasoline and diesel fuel can only be achieved through expansion of station marketing facilities. This is being done but involves our gaining greater share of highly competitive market in areas favorable to refinery from transportation cost standpoint and will of necessity require several years. Basic weaknesses are limited to refining capacity and rapid obsolescence of processes.

STATION MARKETING
($ in Millions)

	Actual			1964
	1961	1962	1963	Budget Cap'ty
Gross Invest. - Sales	$16.3	16.3	17.8	18.0
Internal Use	$ -	-	-	-
Total	$16.3	16.3	17.8	18.0
For Sales:				
% ROI (after tax)	(1.5)	(2.9)	(.3)	.6
Sales	$22.8	23.3	25.0	27.5
Gross Profit	$ 3.4	3.3	4.7	5.2
SARE	$ 3.9	4.4	4.7	5.0
Other Income	$ -	.1	-	-
Division Contribution	$ (.5)	(1.0)	-	.2
As % of Sales:				
Division Contribution	(2.2)	(4.2)	(.1)	1.1
Gross Profit	14.8	14.3	18.8	18.9
SARE	17.3	18.7	19.0	18.3
$ Sales/$ Investment	1.40	1.40	1.40	1.50
Selling Price/Gal	$.141	.139	.144	.147
Cost of Sales/Gal	$.120	.120	.117	.119
Sales - MM Gals	153.7	158.9	166.0	179.2

Slight improvement in profitability has resulted from increased sales volume - 17% since 1961 - and an improvement of 1/2¢ gallon in weighted average unit selling price. Both were practically offset by increased selling costs resulting from higher commission rates to meet competition and increased unit cost of sales through service stations. Inflated prices for land and higher building costs have sharply increased unit selling cost at service stations during first year of operation, when volume seldom reaches more than 75% of potential. Since we have been adding to our Class A Stations at rate of 10% annually during past two years, this has contributed materially to unit selling expense. Through increasing volume at stations constructed in past two years and disposition of old and marginal stations, we can expect a slight decline in selling costs for the future. Gross profits are estimated to remain relatively stable for the next five years. With volume growing at about 8% annually, net income should double, but will still be well below our goal of 4% on gross investment.

STYRENE MONOMER
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$23.3	39.4	39.9	36.5	36.5
Internal Use	$17.2	22.7	25.4	25.0	25.0
Total	$40.5	62.1	65.3	61.5	61.5
For Sales:					
% ROI (after tax)	16.1	11.3	10.6	10.8	10.8
Sales	$28.5	29.2	27.3	26.7	26.7
Gross Profit	$ 8.9	10.5	9.6	8.7	8.7
SARE	$ 1.2	1.4	1.0	1.1	1.1
Other Income	$ .1	.2	.2	.3	.3
Division Contribution	$ 7.8	9.3	8.8	7.9	7.9
As % of Sales:					
Division Contribution	27.4	31.8	32.2	29.6	29.6
Gross Profit	31.4	35.9	35.0	32.7	32.7
SARE	4.3	4.9	3.7	4.2	4.2
$ Sales/$ Investment	1.20	.70	.70	.70	.70
Selling Price/lb	$.107	.101	.095	.086	.086
Cost of Sales/lb	$.073	.064	.062	.056	.056
Capacity - MM lbs	472.5	516.0	552.0	552.0	552.0
Excess	27.1	11.1	8.0	(12.4)	(12.4)
Internal Use	186.9	205.4	248.3	260.0	260.0
Sales	258.5	299.5	295.7	304.4	304.4

Generally good performance was realized throughout 1963. The plant was pushed to capacity and some sacrifice in yields was required to attain needed volumes. An expansion project was completed during the year to recoup the yield losses. It presently appears for 1964, however, that the plant will again be pushed to its limits to produce needed volumes

These volume increases have helped to offset the severe price pressures being felt in this product group. With the entrance of a major oil producer into styrene (Amoco) and the expansion by Carbide, continued price pressure is expected. Profits are again forecasted to suffer, despite significant cost improvement, principally in lower raw material prices. Over-all, the product line continues to be the pace-setter in the Hydrocarbons Division.

VINYL ACETATE MONOMER
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ 1.1	3.3	6.4	8.6	8.6
Internal Use	$ -	.7	2.7	2.3	2.3
Total	$ 1.1	4.0	9.1	10.9	10.9
For Sales:					
% ROI (after tax)	(3.0)	(1.8)	(4.1)	1.0	1.0
Sales	$ .3	.9	2.4	4.2	4.2
Gross Profit	$ (.1)	(.1)	(.4)	.3	.3
SARE	$ -	-	.2	.2	.2
Other Income	$ -	-	-	.1	.1
Division Contribution	$ (.1)	(.1)	(.6)	.2	.2
As % of Sales:					
Division Contribution	(22.7)	(14.0)	(23.2)	4.1	4.1
Gross Profit	(15.9)	(10.8)	(18.4)	7.8	7.8
SARE	6.8	3.5	6.0	4.9	4.9
$ Sales/$ Investment	.30	.30	.40	.50	.50
Selling Price/lb	$.155	.145	.124	.120	.120
Cost of Sales/lb	$.179	.160	.147	.111	.111
Capacity - MM lbs	-	-	45.0	45.0	45.0
Excess	-	-	16.8	-	-
Internal Use	-	4.9	9.0	10.0	10.0
Sales	2.0	6.1	19.2	35.0	35.0

The new vinyl acetate plant performed quite well in the first year of operation (on stream on February 11, 1963 -- previous years' data represent conversions). Capacity operation is forecast in 1964, resulting in a marked improvement in cost of sales. Price deterioration has been so severe that negligible profits are expected from this product line. The sales shown are almost all to Shawinigan; hence about 90% of total production is captive.

About 40% excess capacity plagues this industry and further price pressures are expected. Higher volumes from existing facilities are one way to combat these pressures. Fortunately, there are indications that 15-20% additional production capacity may be achieved, although in 1964 acetylene shortages will prevent demonstrating these higher rates.

VINYL CHLORIDE MONOMER
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ 5.1	5.4	4.2	3.3	3.3
Internal Use	$ 15.4	16.4	16.1	16.5	16.5
Total	$ 20.5	21.8	20.3	19.8	19.8
For Sales:					
% ROI (after tax)	(1.3)	1.9	.9	1.6	1.6
Sales	$ 1.7	2.5	1.9	1.6	1.6
Gross Profit	$ -	.3	.1	.2	.2
SARE	$ .2	.1	.1	.1	.1
Other Income	$ -	-	.1	-	-
Division Contribution	$ (.2)	.2	.1	.1	.1
As % of Sales:					
Division Contribution	(8.2)	8.3	4.1	6.5	6.5
Gross Profit	(.5)	11.5	6.3	9.2	9.2
SARE	9.4	5.2	4.6	5.1	5.1
$ Sales/$ Investment	.30	.50	.50	.50	.50
Selling Price/lb	$ .075	.077	.077	.071	.071
Cost of Sales/lb	$ .076	.068	.071	.064	.064
Capacity - MM lbs	126.0	138.0	138.0	138.0	138.0
Excess	30.6	1.7	(3.9)	(9.5)	(9.5)
Internal Use	72.6	104.3	117.1	126.0	126.0
Sales	22.8	32.0	24.8	21.5	21.5

Sales were only a modest factor in vinyl chloride in 1963 as over 80% of production was used captively. Emphasis on acrylonitrile production limited supplies of acetylene for vinyl chloride. It was therefore necessary to operate the facilities in a less economical fashion (oxidative chlorination) causing a small rise in unit costs and the resulting drop in ROI.

Sales continue to be a minor factor in 1964 with around 85% used captively. The slight improvement in acetylene supply via purchase and expansion is forecasted to permit an improvement in the cost of sales, and an offset to lower selling prices. Although polymer supplies are tight, excess industry capacity continues in monomers.

ALL OTHER MONOMERS
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ .6	.6	.4	.5	.5
Internal Use	$ 4.8	5.0	5.4	5.4	5.4
Total	$ 5.4	5.6	5.8	5.9	5.9
For Sales:					
% ROI (after tax)	30.1	7.6	8.9	11.3	11.3
Sales	$ .9	.3	.3	.3	.3
Gross Profit	$ .4	.1	.1	.1	.1
SARE	$ -	-	-	-	-
Other Income	$ -	-	-	-	-
Division Contribution	$ .4	.1	.1	.1	.1
As % of Sales:					
Division Contribution	41.6	25.1	26.2	34.6	34.6
Gross Profit	43.7	34.5	31.5	37.2	37.2
SARE	3.6	9.4	6.0	3.8	3.8
$ Sales/$ Investment	1.50	.60	.70	.70	.70
Selling Price/lb	$.030	.036	.038	.032	.032
Cost of Sales/lb	$.017	.024	.026	.020	.020
Capacity - MM lbs	86.4	86.4	86.4	86.4	86.4
Excess	(12.8)	(11.5)	(32.5)	(39.6)	(39.6)
Internal Use	70.1	88.5	111.1	115.4	115.4
Sales	29.1	9.4	7.8	10.6	10.6

These consist principally of methanol, which is used over 90% captively in other divisions. Sales are therefore minor factors. Wide-open operations are expected to continue throughout 1964. Because of surging Plastics Division demands for methanol (used in manufacture of formaldehyde), the timing on purchase of the other half of the methanol plant is being restudied.

0633443

INORGANIC DIVISION

Division profitability has been ($MM's)

	Actual			1964
	1961	1962	1963	Budget
% Return on Investment AT	6.4	6.1	6.8	7.3
Gross Investment	150.2	167.3	187.0	196.8
Sales	125.4	132.4	146.2	154.8
Division Contribution BT	17.4	19.3	24.6	27.5
Div. Cont. as % of Sales	13.9	14.6	16.8	17.8
$ Sales/$ Investment	.83	.79	.78	.79

In 1963 investment in the divisions' products earned the following rates of return:

	% of Total Investment
Loss	3.5
0 to 3%	-
3 to 5.8%	18.2
Over 5.8%	78.3

Major products reported are:

These comprise 78% of the divisions' investment in 1963.

ACL's
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ 3.9	6.5	13.3	12.4	12.9
Internal Use	$ -	-	-	-	-
Total	$ 3.9	6.5	13.3	12.4	12.9
For Sales:					
% ROI (after tax)	(3.6)	6.1	3.4	11.6	22.3
Sales	$ 3.3	4.5	7.0	9.2	13.6
Gross Profit	$ (.1)	1.2	1.6	3.7	7.1
SARE	$ .2	.4	.7	.7	1.1
Other Income	$ -	-	-	-	-
Division Contribution	$ (.3)	.8	.9	3.0	6.0
As % of Sales:					
Division Contribution	(8.7)	18.3	13.5	32.7	44.2
Gross Profit	(1.4)	25.9	22.9	40.5	52.1
SARE	7.3	7.7	9.6	7.9	7.9
$ Sales/$ Investment	.86	.69	.53	.74	1.05
Selling Price/lb	$.654	.609	.538	.518	.515
Cost of Sales/lb	$.663	.451	.415	.308	.246
Capacity - MM lbs	7.5	7.7	23.5	26.6	26.6
Excess	2.3	.2	10.3	8.7	-
Internal Use	.1	.1	.1	.1	.1
Sales	5.1	7.4	13.1	17.8	26.5

ACL's have been made at Everett since 1958; however, they were not profitable until 1962. During this period the plant was expanded and the product line increased from two to four products. Everett operated at capacity in 1962. Sales increased because of Colgate's increased use of ACL 59 in market development of "Action". During 1962 the larger commercial facilities at Krummrich were under construction and the new cyanuric acid plant at El Dorado was built. These were started up the first quarter of 1963.

Our current basic strength lies in low unit costs which have been achieved because of the greater divisor, the new CYA process and the basic raw material position which goes back to KCl and natural gas.

One problem appears to be a softening of the market which may make it difficult to sustain the forecast sales volume in 1964.

ALKYLATES
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ 11.7	12.5	14.0	20.5	20.2
Internal Use	$ .3	-	.4	.8	.8
Total	$ 12.0	12.5	14.4	21.3	21.0
For Sales:					
% ROI (after tax)	11.2	13.7	9.5	2.9	1.1
Sales	$ 12.5	12.4	11.1	12.3	9.7
Gross Profit	$ 3.3	4.2	3.5	1.9	.9
SARE	$ .9	1.0	1.0	1.0	.8
Other Income	$ -	-	-	-	-
By Product Gross Profit	$ .3	.4	.3	.3	.4
Division Contribution	$ 2.7	3.6	2.8	1.2	.5
As % of Sales:					
Division Contribution	21.8	28.7	24.9	10.0	5.0
Gross Profit	26.2	33.5	31.7	15.0	9.2
SARE	7.3	7.7	9.6	7.9	7.9
$ Sales/$ Investment	1.07	1.00	.80	.60	.48
Selling Price/lb	$ .108	.104	.097	.095	.095
Cost of Sales/lb	$ .080	.069	.066	.081	.087
Capacity - MM lbs	140.0	140.0	150.0	117.1	117.1
Excess	10.9	5.7	22.0	(27.7)	-
Internal Use	13.2	14.4	13.2	15.8	15.8
Sales	115.9	119.9	114.8	129.0	101.3

The "Alkylate" product group includes Alkylbenzene and by-products (HAN and LAN).

The major problem of this product line is conversion to biodegradability This transition is taking place in 1964 when biodegradable alkylates will be made from purchased olefins. By January 1965 these raw materials will be made at Chocolate Bayou from purchased paraffins. New capital of $9,600,000 is being installed to do this. Refining of the crude alkylbenzene will take place at Krummrich, but about $2,200,000 of the Krummrich assets will be obsolete. After tax earnings on the new process and total investment will range between 9 - 10% starting in 1965.

ALL - CONDENSED AND FLUFFY
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ 8.2	6.4	7.9	6.9	7.5
Internal Use	$ -	-	-	-	-
Total	$ 8.2	6.4	7.9	6.9	7.5
For Sales:					
% ROI (after tax)	5.5	3.4	4.1	3.2	6.6
Sales	$ 7.4	6.6	8.3	7.1	11.4
Gross Profit	$ 1.3	.9	1.3	1.0	1.8
SARE	$ .5	.5	.8	.6	.9
Other Income	$ -	-	-	-	-
Depletion Tax Credit	$ .1	-	.1	-	.1
Division Contribution	$ .9	.4	.6	.4	1.0
As % of Sales:					
Division Contribution	11.6	6.2	7.1	6.0	8.4
Gross Profit	18.0	13.2	15.8	13.4	15.8
SARE	7.3	7.7	9.6	7.9	7.9
$ Sales/$ Investment	.91	1.02	1.05	1.02	1.53
Selling Price/lb	$ .081	.073	.070	.069	.069
Cost of Sales/lb	$ .066	.063	.059	.060	.058
Capacity - MM lbs	157.9	163.4	161.2	164.3	164.3
Excess	66.1	73.6	41.9	62.3	-
Internal Use	-	-	-	-	-
Sales	91.8	89.8	119.3	102.0	164.3

The product "all" derives its profits from the Monsanto made raw materials Sterox DJ and STP. The conversion and packaging are done at cost, so that any reduction in this area is passed on to Lever.

The 1964 budgeted sales, projected on 1963 first six months actual, are now expected to be 110 million pounds. Future profitability is dependent upon the profitability of the raw materials. For a discussion of them refer to "Sterox - Phenol Based" and "STP".

CAUSTIC POTASH
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ 1.4	3.5	1.8	1.8	2.0
Internal Use	$ -	-	-	-	-
Total	$ 1.4	3.5	1.8	1.8	2.0
For Sales:					
% ROI (after tax)	7.1	3.3	7.2	11.5	18.9
Sales	$ 1.1	1.2	1.9	1.9	3.8
Gross Profit	$ .3	.3	.4	.5	1.0
SARE	$ .1	.1	.1	.1	.2
Other Income	$ -	-	-	-	-
Division Contribution	$ .2	.2	.3	.4	.8
As % of Sales:					
Division Contribution	20.0	19.6	14.5	22.6	20.8
Gross Profit	28.4	28.2	20.5	28.1	26.4
SARE	8.4	8.9	6.3	5.7	5.7
$ Sales/$ Investment	.74	.35	1.03	1.06	1.89
Selling Price/lb	$.069	.067	.066	.066	.066
Cost of Sales/lb	$.049	.048	.052	.048	.049
Capacity - MM lbs	46.8	46.2	81.0	85.5	85.5
Excess	13.4	14.0	19.7	28.6	-
Internal Use	18.0	16.1	33.0	28.8	28.8
Sales	15.4	18.1	28.3	28.1	56.7

KOH is used captively for ACL and WGK, TKPP at Augusta and Carondelet and is sold from both producing plants at WGK and Anniston.

The investment in 1962 is high due to the construction in progress allocation from Organic for the facilities at WGK, which did not start producing KOH until March 1963. Costs were high in 1963 due to this start-up but division contribution and gross profit as a percent of sales are expected to return to former levels in 1964.

KOH profitability is excellent relative to its substitution product NaOH. The major KOH problem is involved with NaOH and chlorine. It is the problem of optimizing use, capacity and distribution from two producing points and many consuming points.

CHLOROSULFONIC ACID
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ .6	.7	.7	.6	.7
Internal Use	$ .3	.4	.3	.4	.4
Total	$ .9	1.1	1.0	1.0	1.1
For Sales:					
% ROI (after tax)	27.4	21.8	31.9	28.5	35.5
Sales	$ .7	.7	.9	.9	1.2
Gross Profit	$ .4	.4	.5	.4	.6
SARE	$ .1	.1	.1	-	.1
Other Income	$ -	-	-	-	-
Division Contribution	$ .3	.3	.4	.4	.5
As % of Sales:					
Division Contribution	46.4	46.0	50.2	43.2	39.8
Gross Profit	54.8	54.7	56.4	48.8	45.5
SARE	8.4	8.9	6.3	5.7	5.7
$ Sales/$ Investment	1.23	.99	1.32	1.37	1.86
Selling Price/lb	$.038	.037	.037	.038	.038
Cost of Sales/lb	$.017	.017	.016	.019	.021
Capacity - MM lbs	43.2	43.2	43.2	58.2	58.2
Excess	3.6	(.5)	(3.5)	10.3	-
Internal Use	22.0	24.3	23.6	25.2	25.2
Sales	17.6	19.4	23.1	22.7	33.0

The quality of Monsanto's chlorosulfonic acid has been a major problem for the past several years. Du Pont has been a leader in supplying low iron and low color acid. Monsanto has been able to follow Du Pont's lead by reducing the iron equipment in the system and by selectively using the HCl gas. The impurities in some of this gas restricts its use to the manufacture of chlorosulfonic acid for captive use, which can tolerate these impurities.

Increased demand, both captive and sales, is requiring expansion within the next twelve months. Start-up of a contemplated project at Everett increased 1964 budgeted costs, but it is now felt that sufficient good quality HCl gas is available at Krummrich to meet sales demands. The total raw material supply should be sufficient for a chlorosulfonic acid capacity of 72MM Lbs./Yr.

Profitability should continue high.

COPPER PROJECT
($ in Millions)

		Actual			1964	
		1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$			.5	2.6	2.7
Internal Use	$			-	-	-
Total	$			.5	2.6	2.7
For Sales:						
% ROI (after tax)				(82.2)	(19.2)	(21.9)
Sales	$			-	-	-
Gross Profit	$			-	-	-
SARE	$			.8	1.0	1.2
Other Income	$			-	-	-
Division Contribution	$			(.8)	(1.0)	(1.2)
As % of Sales:						
Division Contribution				-	-	-
Gross Profit				-	-	-
SARE				-	-	-
$ Sales/$ Investment				-	-	-
Selling Price/lb	$			-	-	-
Cost of Sales/lb	$			-	-	-
Capacity - MM lbs				-	-	-
Excess				-	-	-
Internal Use				-	-	-
Sales				-	-	-

Monsanto began operation of the Kansas City plant of Universal Minerals and Metals in 1963 as a pilot plant to acquire market process and design data for a full scale commercial copper powder plant. This operation is continuing in 1964. By 1965 construction of a full scale commercial unit is expected to be started with operations to begin in 1966. Projected investment is in the order of $15MM, with pretax Division Contribution of 20% to be achieved in 1969 - 1970.

DCP ANHYDROUS AND DIHYDRATE
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ 2.5	2.5	2.8	3.0	3.0
Internal Use	$ -	-	-	-	-
Total	$ 2.5	2.5	2.8	3.0	3.0
For Sales:					
% ROI (after tax)	13.6	11.3	11.8	12.7	12.1
Sales	$ 2.3	2.4	2.5	2.7	2.5
Gross Profit	$ .7	.7	.7	.9	.8
SARE	$ .1	.1	.1	.1	.1
Other Income	$ -	-	-	-	-
Depletion Tax Credit	$ .1	-	-	-	-
Division Contribution	$ .7	.6	.6	.8	.7
As % of Sales:					
Division Contribution	28.6	23.4	25.3	28.4	29.6
Gross Profit	31.9	28.0	29.0	32.9	34.0
SARE	5.3	6.0	5.2	5.3	5.3
$ Sales/$ Investment	.92	.94	.92	.90	.82
Selling Price/lb	$.077	.075	.074	.076	.076
Cost of Sales/lb	$.052	.054	.053	.051	.050
Capacity - MM lbs	56.2	59.8	56.5	56.8	56.8
Excess	4.9	8.9	.1	(3.2)	-
Internal Use	21.1	19.1	22.2	24.0	24.0
Sales	30.2	31.8	34.2	36.0	32.8

Reduction in phosphorus costs was primarily responsible for the improvement to 11.8% ROI in 1963. The high level of profitability of this product is due in large part to relatively old process equipment thereby providing a low unit investment. In 1964 a major expansion will be necessary and unit investment will be increased and with no yield improvement, the level of profitability for this product will go down. Total profit dollars will, of course, increase.

However, stable pricing and technological advantages that we hold and gradually falling phosphorus costs should maintain the profitability above product group average of 10.1% in 1963.

ELECTRONIC CHEMICALS
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ 4.7	5.2	6.0	7.4	7.5
Internal Use	$ -	-	-	-	-
Total	$ 4.7	5.2	6.0	7.4	7.5
For Sales:					
% ROI (after tax)	(15.0)	(16.5)	(12.2)	(8.2)	(7.0)
Sales	$ 1.6	2.4	2.4	3.9	4.5
Gross Profit	$ (.6)	(.9)	(.7)	-	.3
SARE	$ .8	.9	.8	1.2	1.4
Other Income	$ -	-	-	-	-
Division Contribution	$(1.4)	(1.8)	(1.5)	(1.2)	(1.1)
As % of Sales:					
Division Contribution	(92.6)	(75.8)	(63.7)	(32.9)	(24.5)
Gross Profit	(40.1)	(36.6)	(29.4)	(.8)	7.6
SARE	52.6	39.2	34.4	32.1	32.1
$ Sales/$ Investment	.34	.45	.40	.52	.60
Selling Price/gm	$1.19	1.31	.777	.440	.467
Cost of Sales/gm	$1.66	1.79	1.01	.443	.431
Capacity - MM gm	2.6	3.1	5.3	8.1	8.1
Excess	1.2	1.2	2.1	(.9)	(1.7)
Internal Use	.1	.1	.1	.2	.2
Sales	1.3	1.8	3.1	8.8	9.6

Intense competition, high technology and rapid change charaterize this business.

Float zone realized a gross profit from September 1962 through July 1963. A 40% price cut by Dow Corning eliminated further gross profit until January 1964. We expect price stabilization and cost related prices to provide a net profit by the fourth quarter of 1964.

Fierce competition, chaotic pricing and our high cost process have prevented profits from pulled crystals in the past. Future profits are expected from antimony doped material used captively and sold for epitaxial silicon because several companies went out of business and we developed a lower cost process.

A profitable operation will be achieved in 1965 with improvement to an after tax return on about $10MM investment in 1968 of 11%.

PHOSPHORIC ACID - FOOD
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ 4.5	4.5	5.0	5.5	6.0
Internal Use	$ -	-	-	-	-
Total	$ 4.5	4.5	5.0	5.5	6.0
For Sales:					
% ROI (after tax)	12.1	13.4	13.9	15.6	27.1
Sales	$ 3.6	4.0	4.2	4.8	8.6
Gross Profit	$ 1.1	1.3	1.5	1.9	3.6
SARE	$ .2	.2	.2	.3	.5
Other Income	$ -	-	-	-	-
Depletion Tax Credit	$ .1	.1	.1	.1	.1
Division Contribution	$ 1.0	1.2	1.4	1.7	3.2
As % of Sales:					
Division Contribution	27.5	29.2	32.2	35.4	37.3
Gross Profit	29.1	32.8	35.0	39.1	41.0
SARE	5.3	6.0	5.3	5.3	5.3
$ Sales/$ Investment	.80	.88	.83	.88	1.45
Selling Price/lb	$ .097	.097	.095	.095	.095
Cost of Sales/lb	$ .069	.065	.062	.058	.056
Capacity - MM lbs	547.8	565.1	631.7	652.4	652.4
Excess	35.7	30.9	37.1	40.1	-
Internal Use	475.3	493.0	550.7	561.9	561.9
Sales	36.8	41.2	43.9	50.4	90.5

The increase in phosphoric acid profitability to 13.9% ROI in 1963 was due primarily to lower phosphorus cost. Further improvements from future phosphorus cost reductions will probably be at least partially offset by expense in increased customer service such as marketing assistance for spent acid and competition in some areas from new producers. The price of this product is expected to remain stable, even modest increases over the next few years are anticipated. Sales volume growth is expected to continue at 5% per year.

The profitability of this product should remain above 10%.

PHOSPHORIC ACID - OTHER
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ 13.6	12.7	12.9	12.5	13.4
Internal Use	$ -	-	-	-	-
Total	$ 13.6	12.7	12.9	12.5	13.4
For Sales:					
% ROI (after tax)	3.4	1.6	4.0	5.3	10.0
Sales	$ 8.5	8.0	8.8	8.6	16.0
Gross Profit	$ .5	.3	.9	1.5	2.9
SARE	$ .4	.5	.5	.5	.8
Other Income	$ -	-	-	-	-
Depletion Tax Credit	$ .4	.3	.3	.2	.3
Division Contribution	$ .5	.1	.7	1.2	2.4
As % of Sales:					
Division Contribution	5.9	1.6	8.3	13.7	15.1
Gross Profit	6.2	4.0	9.9	16.8	18.2
SARE	5.3	6.0	5.3	5.3	5.3
$ Sales/$ Investment	.63	.63	.68	.69	1.19
Selling Price/lb	$ .070	.065	.066	.066	.066
Cost of Sales/lb	$ .066	.063	.059	.055	.054
Capacity - MM lbs	207.8	194.2	234.2	235.0	235.0
Excess	85.9	72.3	101.1	104.7	(7.2)
Internal Use	-	-	-	-	-
Sales	121.9	121.9	133.1	130.3	242.2

Part of the improved profitability has resulted from lower phosphorus cost, but more significant was the improved net back price and lower cost through more attention to marketing plans. Tank car packing and shipping costs were reduced significantly by increasing the number of trips per car per year and refusing to accept business below a set profitability level.

In the future, this marketing program will be made still more effective and phosphorus cost at lower levels will continue to improve the profitability of this acid.

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POTASSIUM PHOSPHATES
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ 2.2	2.7	3.9	4.1	4.1
Internal Use	$ -	-	-	-	-
Total	$ 2.2	2.7	3.9	4.1	4.1
For Sales:					
% ROI (after tax)	12.3	8.0	13.6	15.7	18.5
Sales	$ 2.4	2.1	3.6	4.0	4.2
Gross Profit	$ .6	.5	1.2	1.5	1.8
SARE	$ .1	.1	.2	.2	.2
Other Income	$ -	-	-	-	-
Depletion Tax Credit	$ -	-	.1	-	-
Division Contribution	$ .5	.4	1.1	1.3	1.6
As % of Sales:					
Division Contribution	21.9	20.6	29.8	33.2	37.1
Gross Profit	25.1	25.8	34.2	38.0	41.9
SARE	5.3	6.0	5.3	5.3	5.3
$ Sales/$ Investment	1.11	.78	.92	.97	1.02
Selling Price/lb	$.126	.122	.120	.129	.129
Cost of Sales/lb	$.094	.090	.079	.080	.075
Capacity - MM lbs	25.0	26.8	34.2	33.0	33.0
Excess	5.6	9.1	4.1	2.0	-
Internal Use	.3	.2	.3	.3	.3
Sales	19.1	17.5	29.8	30.7	32.7

Profitability in 1963 was up sharply over 1962 because of a much higher level of market participation, a sharp growth in the market and lower phosphorus costs. Downward price adjustments are forecast for potassium phosphates to make liquid detergents more competitive with dry products. This downward trend could reduce profitability by approximately two percentage points. This in large part will be offset by lower phosphorus costs, but additional potassium phosphate facilities are planned for 1965 and 1966. The addition of capital for these new facilities will obviously cause a dip in profitability level until a reasonable capacity level is reached.

MCP - ALL GRADES
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ 2.0	2.3	2.0	2.2	2.2
Internal Use	$ -	-	-	-	-
Total	$ 2.0	2.3	2.0	2.2	2.2
For Sales:					
% ROI (after tax)	7.1	5.5	8.5	8.4	9.3
Sales	$ 1.6	1.8	1.7	1.8	1.9
Gross Profit	$ .3	.3	.4	.4	.5
SARE	$ .1	.1	.1	.1	.1
Other Income	$ -	-	-	-	-
Depletion Tax Credit	$ .1	-	-	-	-
Division Contribution	$ .3	.2	.3	.3	.4
As % of Sales:					
Division Contribution	15.3	12.6	19.0	19.9	21.6
Gross Profit	17.8	16.6	22.4	24.0	25.6
SARE	5.3	6.0	5.3	5.3	5.3
$ Sales/$ Investment	.80	.78	.84	.82	.85
Selling Price/lb	$.065	.071	.071	.070	.070
Cost of Sales/lb	$.054	.059	.055	.053	.052
Capacity - MM lbs	27.0	27.0	27.0	27.0	27.0
Excess	2.6	1.5	2.6	.9	-
Internal Use	.1	.2	.3	.3	.3
Sales	24.3	25.3	24.1	25.8	26.7

Improved profitability in 1963 was the result of both lower phosphorus costs and a better market position. Prices will be stable with modest increases predicted over the next few years. This increase in revenue and lower phosphorus costs will be offset by costs involved in a major expansion foreseen within the next two years. Until the expanded facilities reach a capacity level equivalent to that now enjoyed the profitability can be expected to fall slightly.

SANTOCELS
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ 1.8	2.0	2.6	2.7	2.7
Internal Use	$ -	-	-	-	-
Total	$ 1.8	2.0	2.6	2.7	2.7
For Sales:					
% ROI (after tax)	6.7	7.9	8.7	8.1	11.2
Sales	$ 1.5	1.7	2.0	2.5	2.3
Gross Profit	$ .4	.5	.6	.6	.8
SARE	$ .1	.2	.1	.1	.2
Other Income	$ -	-	-	-	-
Division Contribution	$ .3	.3	.5	.5	.6
As % of Sales:					
Division Contribution	17.1	20.0	23.7	18.2	27.0
Gross Profit	25.5	28.7	29.7	24.8	33.5
SARE	8.4	8.9	6.3	6.7	6.8
$ Sales/$ Investment	.82	.82	.76	.92	.86
Selling Price/lb	$.654	.644	.644	.658	.657
Cost of Sales/lb	$.487	.459	.453	.494	.437
Capacity - MM lbs	3.5	3.5	3.4	3.5	3.5
Excess	1.2	.8	.3	(.3)	-
Internal Use		.1	-	-	-
Sales	2.3	2.6	3.1	3.8	3.5

The Silica chemicals Santocels and Syton are manufactured at Everett by a process which is common for all products in the first two steps. Because of this, their profitability should be looked at together to avoid inconsistencies due to the allocation of costs and investment.

Domestic Santocel sales reached a peak in 1957 and declined to 1961. The original cryogenic insulator Santocel A has all but disappeared due to low cost competition. The other grades have been under quality competitive pressures. For this reason two new grades, 62 and Z, were introduced in 1963 and accounted for much of the volume increase that has current sales at capacity.

A project for $280,000 new capital in 1964 for silica chemical expansion has just been approved. This project is the first and largest in a five year expansion program.

SMP
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ 3.8	3.7	3.9	4.0	4.0
Internal Use	$ -	-	-	-	-
Total	$ 3.8	3.7	3.9	4.0	4.0
For Sales:					
% ROI (after tax)	8.3	8.7	10.8	11.5	10.9
Sales	$ 3.3	3.2	3.3	3.4	3.5
Gross Profit	$ .7	.7	.9	1.1	1.1
SARE	$ .2	.2	.2	.2	.2
Other Income	$ -	-	-	-	-
Depletion Tax Credit	$ .1	.1	.1	-	-
Division Contribution	$ .6	.6	.8	.9	.9
As % of Sales:					
Division Contribution	17.4	19.1	23.8	26.9	25.9
Gross Profit	19.8	23.1	27.0	31.0	29.9
SARE	5.3	6.0	5.3	5.3	5.3
$ Sales/$ Investment	.85	.85	.86	.85	.85
Selling Price/lb	$.083	.081	.081	.081	.081
Cost of Sales/lb	$.067	.062	.059	.056	.057
Capacity - MM lbs	44.6	44.5	45.2	44.5	44.5
Excess	4.4	3.9	2.8	1.8	-
Internal Use	1.0	1.3	1.3	1.2	1.2
Sales	39.2	39.3	41.1	41.5	43.3

As in the other phosphate products, 1963 profitability was up because of lower phosphorus costs. Only minor capital expenditures are anticipated in this department for the next four to five years; therefore, anticipated reduction of phosphorus costs should continue to improve the profitability of SMP.

STEROX - PHENOL BASE
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ 4.2	3.5	3.7	3.5	3.9
Internal Use	$ -	-	-	-	-
Total	$ 4.2	3.5	3.7	3.5	3.9
For Sales:					
% ROI (after tax)	1.4	3.1	7.8	4.4	10.0
Sales	$ 3.3	4.0	3.8	4.1	7.2
Gross Profit	$ .4	.5	1.0	.6	1.4
SARE	$ .3	.3	.4	.3	.6
Other Income	$ -	-	-	-	-
Division Contribution	$ .1	.2	.6	.3	.8
As % of Sales:					
Division Contribution	3.7	5.8	15.8	7.7	11.2
Gross Profit	11.0	13.5	25.3	15.5	19.0
SARE	7.3	7.7	9.6	7.9	7.8
$ Sales/$ Investment	.79	1.12	1.03	1.18	1.86
Selling Price/lb	$.165	.143	.145	.138	.138
Cost of Sales/lb	$.147	.124	.108	.116	.112
Capacity - MM lbs	48.7	54.1	57.4	60.1	60.1
Excess	20.8	19.1	21.5	21.9	-
Internal Use	7.8	7.3	9.7	8.3	8.3
Sales	20.1	27.7	26.2	29.9	51.8

Phenol based sterox prices were cut by Monsanto in 1961 at the same time large volume contracts were obtained. The market price has remained constant since that time. Change in net prices is due to product mix and to the amount of freight which is absorbed from the two producing points. The estimated 1964 net price reduction and cost increase have not materialized and are not now expected. The first two months of 1964 are actually better than 1963 in all respects.

The major problem for the future is to supply biodegradable steroxes. A satisfactory product has been supplied Lever for use in "all". Full production will depend upon the timing desired by the customers and the availability of raw materials.

Future return on investment should be in the 7 - 9% range.

STP - ALL GRADES
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ 36.0	43.2	46.6	45.6	46.7
Internal Use	$ -	-	-	-	-
Total	$ 36.0	43.2	46.6	45.6	46.7
For Sales:					
% ROI (after tax)	6.1	4.7	6.5	6.9	9.9
Sales	$ 28.1	31.2	35.4	36.4	45.1
Gross Profit	$ 4.4	4.9	6.7	7.6	10.8
SARE	$ 1.5	1.9	1.9	1.9	2.4
Other Income	$ -	-	-	-	-
Depletion Tax Credit	$ .8	.6	.7	.4	.6
Division Contribution	$ 3.7	3.6	5.5	6.1	9.0
As % of Sales:					
Division Contribution	13.2	11.6	15.6	16.8	20.0
Gross Profit	15.5	15.5	18.8	20.8	24.0
SARE	5.3	6.0	5.3	5.3	5.3
$ Sales/$ Investment	.78	.72	.76	.80	.97
Selling Price/lb	$ .070	.068	.068	.068	.068
Cost of Sales/lb	$ .059	.058	.055	.054	.052
Capacity - MM lbs	498.0	592.1	698.0	704.0	704.0
Excess	55.6	97.6	128.3	127.3	-
Internal Use	38.9	36.9	48.2	41.2	41.2
Sales	403.5	457.6	521.5	535.5	662.8

The factor responsible for the improvement in STP profits in 1963 has been the reduction in elemental phosphorus manufacturing costs. At year-end 1963, a competitor cut the price of STP by 25¢ cwt. If this price cut had been effective on January 1, 1963, return on investment would have been 5.3% rather than 6.8%. However, in general, the sales price of STP for the future is considered stable, with some possibility of upward price adjustments to offset raw material price increases. It is anticipated that the profitability of STP will climb to above 7% within the next three years due to increased volume of sales and anticipated further reductions in phosphorus manufacturing costs.

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SULFURIC ACID
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ 6.2	5.3	7.0	6.7	7.1
Internal Use	$ 3.1	3.3	3.1	2.9	2.9
Total	$ 9.3	8.6	10.1	9.6	10.0
For Sales:					
% ROI (after tax)	6.7	7.9	8.4	10.0	10.8
Sales	$ 4.7	4.5	4.6	5.0	5.3
Gross Profit	$ 1.3	1.3	1.5	1.7	1.9
SARE	$ .4	.4	.3	.3	.3
Other Income	$ -	-	-	-	-
Division Contribution	$ .9	.9	1.2	1.4	1.6
As % of Sales:					
Division Contribution	18.5	19.4	26.6	27.8	30.0
Gross Profit	26.9	28.1	32.5	33.3	35.5
SARE	8.4	8.9	6.3	5.7	5.7
$ Sales/$ Investment	.76	.85	.66	.75	.75
Selling Price/lb	$ .010	.009	.009	.009	.009
Cost of Sales/lb	$ .007	.007	.006	.006	.006
Capacity - MM lbs	937.2	937.2	943.2	943.5	943.5
Excess	26.7	38.7	42.7	(21.7)	(57.0)
Internal Use	416.6	412.0	396.7	418.2	418.2
Sales	493.9	486.5	503.8	547.0	582.3

Sulfuric acid is produced at Everett, Krummrich and Avon (a joint venture with Tidewater). Over half of the sulfuric manufactured is used captively by Monsanto and Tidewater. Because of the contractual relations with Tidewater their use is not included in "Internal Use".

Sulfuric's profitability cycles with the business cycle but, in addition, Monsanto's business has been affected by some major changes. For example, in 1961 Alcoa decided to shut down its St. Louis area operation, thus making 35,000 tons of acid available. Barge shipments and selling in the Chicago market helped eliminate this surplus. In 1963 the shutdown of Phenol at Avon made available 26,000 tons. These have only partially been sold.

The market price of virgin sulfuric acid has been constant since 1954. The net prices and unit costs are affected by the volume of spent acid included in the sales. In 1963 the amount of spent from Avon was more than double the 1962 quantity. This was made available because of the reduced manufacturing volume. Sulfuric is expected to continue at an 8 - 10% after tax return on investment.

SYTON - MERTONE
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ 1.1	1.5	1.7	1.7	1.7
Internal Use	$ -	-	-	-	-
Total	$ 1.1	1.5	1.7	1.7	1.7
For Sales:					
% ROI (after tax)	11.7	6.6	11.1	12.7	17.0
Sales	$ 1.2	1.1	1.2	1.3	1.6
Gross Profit	$ .4	.3	.5	.5	.7
SARE	$ .1	.1	.1	-	.1
Other Income	$ -	-	-	-	-
Division Contribution	$ .3	.2	.4	.5	.6
As % of Sales:					
Division Contribution	23.3	19.0	33.4	34.8	39.6
Gross Profit	31.1	27.6	39.3	40.3	45.1
SARE	8.4	8.8	6.3	5.7	5.7
$ Sales/$ Investment	1.05	.73	.69	.76	.89
Selling Price/lb	$.162	.162	.163	.178	.178
Cost of Sales/lb	$.111	.117	.099	.106	.097
Capacity - MM lbs	7.9	9.7	9.6	8.8	8.8
Excess	.5	2.9	2.2	1.5	
Internal Use	-	-	-	-	-
Sales	7.4	6.8	7.4	7.3	8.8

The Silica chemicals Syton,-Mertone and Santocel are manufactured at Everett by a process which is common for all products in the first two processing steps. Because of this, their profitability should be looked at together to avoid inconsistencies due to the allocation of costs and investment.

Syton has been highly profitable. Its growth with few exceptions has been steadily increasing. The original product was a 15% silica which has been completely replaced by a 30% product. In 1963 40% Syton was introduced and in 1964 it is contemplated that 50% Syton facilities will be installed. The higher concentrations result in freight, packing and shipping savings.

TSP CRYSTAL
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ 2.7	2.7	2.7	3.0	3.0
Internal Use	$ -	-	-	-	-
Total	$ 2.7	2.7	2.7	3.0	3.0
For Sales:					
% ROI (after tax)	11.8	11.0	13.0	14.7	16.8
Sales	$ 2.9	2.9	2.6	3.2	3.5
Gross Profit	$ .7	.7	.8	1.1	1.2
SARE	$ .2	.2	.1	.2	.2
Other Income	$ -	-	-	-	-
Depletion Tax Credit	$ .1	.1	-	-	-
Division Contribution	$ .6	.6	.7	.9	1.0
As % of Sales:					
Division Contribution	20.9	20.5	27.2	27.9	29.7
Gross Profit	24.3	25.3	31.3	32.5	34.3
SARE	5.3	6.0	5.2	5.3	5.3
$ Sales/$ Investment	1.07	1.05	.95	1.07	1.15
Selling Price/lb	$.041	.040	.040	.041	.041
Cost of Sales/lb	$.031	.030	.027	.028	.027
Capacity - MM lbs	72.0	75.0	84.0	84.0	84.0
Excess	1.2	2.8	18.3	6.8	-
Internal Use	-	-	-	-	-
Sales	70.8	72.2	65.7	77.2	84.0

As in the other phosphate products, 1963 profitability was up because of lower phosphorus costs. The lower sales volume of TSP crystal in 1963 was entirely due to the Climalene account problem. This will extend into 1964 with the result that budget will not be met. Future growth for this product is predicted at a modest 2%.

Only minor capital expenditures are anticipated in this department for the next four to five years; therefore, anticipated reduction of phosphorus costs should continue to improve the profitability of TSP crystal.

TSPP
($ in Millions)

		Actual			1964	
		1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$	4.9	4.8	5.1	5.0	5.2
Internal Use	$	-	-	-	-	-
Total	$	4.9	4.8	5.1	5.0	5.2
For Sales:						
% ROI (after tax)		6.3	6.9	9.3	8.4	11.3
Sales	$	4.6	4.6	4.8	4.7	6.0
Gross Profit	$	.6	.8	1.0	1.0	1.4
SARE	$	.2	.3	.2	.3	.3
Other Income	$	-	-	-	-	-
Depletion Tax Credit	$	.1	.1	.1	.1	.1
Division Contribution	$	.5	.6	.9	.8	1.2
As % of Sales:						
Division Contribution		10.9	12.9	18.2	17.5	19.0
Gross Profit		13.4	16.8	21.3	21.5	23.0
SARE		5.3	6.0	5.3	5.3	5.3
$ Sales/$ Investment		.94	.95	.95	.92	1.15
Selling Price/lb	$	.065	.062	.062	.062	.062
Cost of Sales/lb	$	.057	.052	.048	.049	.048
Capacity - MM lbs		122.4	109.7	100.0	100.0	100.0
Excess		48.4	33.1	18.0	21.9	-
Internal Use		4.1	2.9	3.2	3.1	3.1
Sales		69.9	73.7	78.8	75.0	96.9

Sales are forecast to remain relatively constant for the next few years with a slight growth possible. Therefore, with a firm price position, the profitability will be primarily a function of raw material cost.

Lower phosphorus costs should continue to raise the profitability of TSPP.

VANADIUM CATALYST
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ .9	1.1	1.5	1.4	1.5
Internal Use	$ -	-	-	-	-
Total	$ .9	1.1	1.5	1.4	1.5
For Sales:					
% ROI (after tax)	30.8	41.9	16.4	15.3	26.7
Sales	$ 1.0	1.4	1.2	1.3	1.8
Gross Profit	$ .5	.9	.6	.7	1.1
SARE	$ .1	.2	.1	.1	.2
Other Income	$ .2	.3	-	(.1)	(.1)
Division Contribution	$ .6	1.0	.5	.5	.8
As % of Sales:					
Division Contribution	61.1	69.3	44.7	34.7	44.3
Gross Profit	52.0	62.1	49.0	55.0	61.3
SARE	11.8	10.4	6.3	9.4	9.5
$ Sales/$ Investment	1.05	1.26	.76	.92	1.26
Selling Price/ltr	$1.74	1.68	1.60	1.63	1.62
Cost of Sales/ltr	$.836	.637	.817	.732	.626
Capacity - MM ltr	1.1	1.1	1.1	1.1	1.1
Excess	.5	.3	.4	.3	-
Internal Use	-	-	-	-	-
Sales	.6	.8	.7	.8	1.1

The sales of Vanadium Catalyst depends upon the sale of new sulfuric acid plants and the amount of replacement catalyst. Both of these operations are dependent primarily upon the total new capital being spent on sulfuric acid plants. This, in turn, is dependent upon the business cycle and in recent years the fluctuations in this business lags the business cycle by about twelve months. In addition, we must successfully bid on the available business for which there has been increased competition in recent years. Low manufacturing volume accounted for high 1963 costs.

ORGANIC DIVISION

Division profitability has been ($MM's)

	Actual			1964
	1961	1962	1963	Budget
% Return on Investment AT	6.9	6.9	5.9	7.9
Gross Investment	208.0	239.6	254.5	259.2
Sales	165.7	181.9	188.4	202.6
Division Contribution BT	29.7	34.5	31.5	41.1
Div. Cont. as % of Sales	17.9	19.0	16.7	20.3
$ Sales/$ Investment	.80	.76	.74	.78

In 1963 investment in the divisions' products earned the following rates of return:

	% of Total Investment
Loss	12.8
0 to 3%	11.0
3 to 5.8%	42.8
Over 5.8%	33.4

Major products reported are:

	Page		Page
Adipic Acid	61	Pyranols	83
Aluminum Sulfate	62	Saccharin	84
Aroclors & Therminols	63	Santicizer 141	85
Aspirin	64	Santicizer 160	86
Biphenyl	65	Santicizer 409	87
Bisphenol A	66	Santocure & Cyclex	88
Caffeine	67	Santocure NS & Cyclex B	89
Di Octyl Phthalate	68	Santoflex AW & Ajone E	90
Ethavan	69	Santoflex DD & Ajone DD	91
Fumaric Acid	70	Santoflex 36	92
H Acid	71	Santolube 203 B&C (Incl.	
Maleic Anhydride	72	Santolene F & FC)	93
Mersize RM, TFL, &		Santolube 393	94
Rosin Size KIP	73	Santolube 801	95
Orthonitroaniline	74	Santophen 1	96
Para Nitroaniline	75	Santopoid 23 RI & 23 RIA	97
Para Phenetidine(Incl.Tech.)	76	Santowhite Crystals &	
Pentachlorophenol	77	Santonox (Incl. Santonox R)	98
Phenacetin	78	Skydrol	99
Phenol	79	Skydrol 500-A	100
Phenolsulfonic Acid 65%	80	Thiofide	101
Phthalic Anhydride	81	3,4,4-Trichlorocarbanilide	102
Pydraul A-200	82	Vanillin	103

These comprise 61% of the divisions' investment in 1963.

ADIPIC ACID
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ 8.8	10.3	7.2	7.2	7.2
Internal Use	$ 1.9	2.8	6.1	7.3	7.3
Total	$10.7	13.1	13.3	14.5	14.5
For Sales:					
% ROI (after tax)	11.4	12.0	17.2	17.3	18.1
Sales	$ 5.6	6.1	5.7	5.3	5.3
Gross Profit	$ 2.5	3.0	3.0	2.9	3.0
SARE	$ .4	.5	.5	.4	.4
Other Income	$ -	.1	.1	-	-
Division Contribution	$ 2.1	2.6	2.6	2.5	2.6
As % of Sales:					
Division Contribution	37.6	42.3	45.6	46.9	49.1
Gross Profit	44.2	49.8	53.2	54.5	56.7
SARE	7.6	8.2	8.7	8.0	8.0
$ Sales/$ Investment	.63	.59	.79	.74	.74
Selling Price/lb	$.289	.257	.259	.247	.247
Cost of Sales/lb	$.161	.129	.121	.112	.107
Capacity - MM lbs	30.8	34.8	36.9	46.3	46.3
Excess	7.3	3.8	(8.7)	-	-
Internal Use	4.2	7.2	23.7	24.9	24.9
Sales	19.3	23.8	21.9	21.4	21.4

This product continues to be highly profitable. The Manufacturing Department has done an excellent job of cost reduction, improving yields and quality and increasing capacity. A lower-cost phenol has also been of major help.

In 1964 the plant will operate at 46 million pounds. Currently it is oversold and we are committed to supply Chemstrand with 18 million pounds late in 1964. The integration of manufacturing schedules in 1962, 1963 and 1964 has been most helpful in permitting Chemstrand to meet their peak demands for nylon. Product quality of the Organic operations also had to be improved to meet fiber specifications.

The program requires continued integration with Chemstrand since their daily consumption rate is so high. The forward plan provides for expansion of capacity by Chemstrand and the Organic Division will be left with surplus capacity in 1965 and 1966 until sales for chemical applications increase. It is highly probable that sales will exceed budget in 1964 (excluding Chemstrand). Although pricing has been firm, except for food grade quality, erosion is anticipated with the new production scheduled by Celanese (1966); the 20 million pound plant of Rohm & Haas began operations in 1963 but start-up troubles kept them from supplying much beyond their own use until late in the year. Organic's process using phenol is closely competitive with even the large-volume operations of Chemstrand.

ALUMINUM SULFATE
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ 2.4	2.6	2.7	2.6	2.6
Internal Use	$ -	-	-	-	-
Total	$ 2.4	2.6	2.7	2.6	2.6
For Sales:					
% ROI (after tax)	(4.9)	(5.8)	(5.1)	(2.7)	1.0
Sales	$ .7	1.5	1.5	1.8	1.9
Gross Profit	$ (.2)	(.1)	(.1)	.1	.3
SARE	$ .1	.2	.2	.2	.2
Other Income	$ -	-	-	-	-
Division Contribution	$ (.3)	(.3)	(.3)	(.1)	.1
As % of Sales:					
Division Contribution	(34.8)	(19.8)	(18.5)	(8.1)	2.7
Gross Profit	(25.2)	(8.4)	(6.5)	5.2	15.3
SARE	9.6	11.4	12.0	13.4	12.7
$ Sales/$ Investment	.29	.60	.57	.68	.74
Selling Price/lb	$.017	.017	.018	.020	.020
Cost of Sales/lb	$.021	.019	.019	.019	.017
Capacity - MM lbs	61.2	122.4	108.0	98.4	98.4
Excess	20.6	34.0	20.1	8.4	-
Internal Use	-	-	-	-	-
Sales	40.6	88.4	87.9	90.0	98.4

Profit fell off badly during 1961 - 1963 as new producers attempted to establish themselves in the alum market. One of these recently discontinued alum operations. A price increase was put in effect in mid-1962 and a second increase in 1963 finally took the price above the 1960 level. This outlet for sulfuric acid is important for Monsanto since the Inorganic Division could not move the sulfuric acid released if alum were shut down. However, by 1967 it is anticipated working the net investment of this department down to a low enough level to go out of business. This will be done unless profit margins can be improved.

In late 1963 the iron-free alum equipment was shut down and dismantled. This will improve the over-all alum cost performance.

Pricing on alum continues to be critical and further increase in profits will be tried by again raising the price in 1965. Lower-cost bauxite is being tested but does not appear promising because lower yields offset the lower-cost bauxite.

AROCLORS AND THERMINOLS
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ 5.4	5.7	7.1	8.4	8.4
Internal Use	$ 1.2	1.6	1.6	1.9	1.9
Total	$ 6.6	7.3	8.7	10.3	10.3
For Sales:					
% ROI (after tax)	17.3	17.8	13.5	14.2	15.4
Sales	$ 5.3	5.3	5.7	6.1	6.2
Gross Profit	$ 2.5	2.5	2.7	3.1	3.2
SARE	$ .6	.5	.7	.6	.6
Other Income	$ -	.1	-	-	-
Division Contribution	$ 1.9	2.1	2.0	2.5	2.6
As % of Sales:					
Division Contribution	36.7	39.4	34.7	40.6	41.7
Gross Profit	47.0	47.7	46.7	51.0	52.0
SARE	11.0	9.4	12.5	10.4	10.3
$ Sales/$ Investment	.98	.94	.81	.73	.74
Selling Price/lb	$.155	.154	.153	.154	.154
Cost of Sales/lb	$.082	.080	.082	.075	.074
Capacity - MM lbs	55.8	56.4	56.4	53.4	53.4
Excess	11.8	9.6	7.7	.4	-
Internal Use	9.8	12.2	11.4	13.1	13.1
Sales	34.2	34.6	37.3	39.9	40.3

This is a consolidated group of Aroclor products crossing three product group lines and various price schedules. From an overall appraisal, it can be stated that the Aroclor family constitutes a very profitable and large family of products that are rather widely diversified in end-use applications.

The Aroclors are expected to continue to grow in volume and retain a favorable profitability status. Plans are currently in progress to install a major expansion in capacity to accommodate growing demand for these products.

ASPIRIN
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ 5.7	7.2	7.7	7.9	7.9
Internal Use	$ .2	.1	.1	-	-
Total	$ 5.9	7.3	7.8	7.9	7.9
For Sales:					
% ROI (after tax)	8.1	9.9	10.6	11.2	13.1
Sales	$ 4.4	5.0	5.8	5.7	5.7
Gross Profit	$ 1.2	1.8	2.1	2.2	2.5
SARE	$ .2	.3	.4	.4	.4
Other Income	$ -	-	-	-	-
Division Contribution	$ 1.0	1.5	1.7	1.8	2.1
As % of Sales:					
Division Contribution	22.2	30.0	29.4	31.0	36.1
Gross Profit	28.3	36.8	36.7	38.5	43.6
SARE	6.4	7.1	7.8	8.0	8.0
$ Sales/$ Investment	.76	.69	.75	.72	.72
Selling Price/lb	$.563	.570	.558	.536	.536
Cost of Sales/lb	$.404	.360	.354	.330	.302
Capacity - MM lbs	10.0	10.0	10.0	10.6	10.6
Excess	2.1	1.2	(.5)	-	-
Internal Use	.2	.1	.1	-	-
Sales	7.7	8.7	10.4	10.6	10.6

The growth of aspirin demand was somewhat unexpected. It resulted largely from withdrawal of phenacetin from some analgesic compounds and the substitution of aspirin. For the past two years operations have been at full capacity and continued operations are forecast at this level with some purchases in 1964. Incremental expansions in both salicylic acid and aspirin have been effected and currently major expansions in both products are being studied.

Monsanto has a very strong position in integrated raw materials and technology leading to the economic production of aspirin. This dominant position is expected to continue. Pricing of finished aspirin will be affected only slightly by a reduction in tariffs.

BIPHENYL
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ .3	.3	.3	.3	.4
Internal Use	$ 1.5	1.9	2.3	2.2	2.2
Total	$ 1.8	2.2	2.6	2.5	2.6
For Sales:					
% ROI (after tax)	29.4	28.1	29.7	24.6	64.6
Sales	$ .4	.4	.4	.3	1.0
Gross Profit	$ .2	.2	.2	.2	.6
SARE	$ -	-	-	-	.1
Other Income	$ -	-	-	-	-
Division Contribution	$ .2	.2	.2	.2	.5
As % of Sales:					
Division Contribution	41.6	44.1	51.3	50.6	55.0
Gross Profit	47.8	51.7	55.6	56.8	58.7
SARE	6.8	7.8	4.8	6.6	3.8
$ Sales/$ Investment	1.47	1.33	1.21	.97	2.35
Selling Price/lb	$.154	.163	.166	.167	.167
Cost of Sales/lb	$.080	.079	.074	.072	.069
Capacity - MM lbs	27.0	32.4	32.4	32.4	32.4
Excess	2.3	7.1	5.6	3.7	-
Internal Use	22.3	22.9	24.5	26.7	26.7
Sales	2.4	2.4	2.3	2.0	5.7

Biphenyl is manufactured primarily for upgrading to Aroclors. A stable Biphenyl market for about 2 million pounds has existed for many years and will probably continue at this level. Monsanto's position will be threatened in this 2 million pound market by by-product Biphenyl available from two sources - Schenectady Chemical phenol by-product and the hydrodealkylation residues containing above 50% Biphenyl. If one or more of these parties upgrades crude Biphenyl to satisfactory quality, about 800,000 pounds of Monsanto business will be lost. Price reduction by Monsanto will not materially affect the placement of this by-product material.

BISPHENOL A
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ 3.4	4.6	4.6	5.4	5.4
Internal Use	$ .1	.1	.1	.2	.2
Total	$ 3.5	4.7	4.7	5.6	5.6
For Sales:					
% ROI (after tax)	2.7	6.8	8.7	10.7	11.0
Sales	$ 2.1	2.6	3.3	3.4	3.4
Gross Profit	$ .3	.9	1.1	1.4	1.5
SARE	$ .1	.2	.3	.3	.3
Other Income	$ -	-	-	-	-
Division Contribution	$ .2	.7	.8	1.1	1.2
As % of Sales:					
Division Contribution	9.1	24.8	25.6	34.0	34.9
Gross Profit	16.4	32.7	33.6	41.7	42.5
SARE	7.7	8.4	8.7	8.0	8.0
$ Sales/$ Investment	.61	.57	.71	.63	.63
Selling Price/lb	$.247	.256	.224	.230	.230
Cost ofSales/lb	$.207	.172	.149	.134	.132
Capacity - MM lbs	*	13.5	13.6	15.4	15.4
Excess	-	3.1	(1.4)	.1	-
Internal Use	.3	.2	.4	.5	.5
Sales	8.4	10.2	14.6	14.8	14.9

* Product made in multiple purpose equipment which causes a fluctuating capacity to exist.

Costs of Bisphenol A improved as the plant attained full capacity operation in 1963. The unit is sold out for 1964 and production is being supplemented by conversion of Monsanto phenol for resale. Pricing of Bisphenol A has been relatively firm, in spite of major breaks in phenol pricing, but pressure is expected in 1964 and 1965. The major outlet continues to be for epoxy resins. This unit is not able to make the quality required for polycarbonate resins. A plan to install such a unit has been deferred indefinitely.

Costs will be helped by improvements in phenol and acetone with a higher percentage of phenol produced at the cumene phenol unit of Chocolate Bayou. An expansion of about 3 million pounds to a total of 18 million pounds of epoxy-grade BPA is now under consideration for somewhat limited capital.

Adequate capacity exists in the USA for total requirements of both epoxy and polycarbonate quality. The 1963 production of epoxy resins was a new record --- 30% over the 1962 level. The epoxy resins are produced under a limited number of licenses against major patents which expire beginning in 1966. Some degradation in pricing can occur at that time.

CAFFEINE
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ 4.3	4.4	4.1	3.6	3.7
Internal Use	$ -	-	-	-	-
Total	$ 4.3	4.4	4.1	3.6	3.7
For Sales:					
% ROI (after tax)	(1.8)	(1.0)	(1.6)	(2.9)	3.9
Sales	$ 1.2	1.2	1.4	1.1	2.8
Gross Profit	$ (.1)	-	-	(.1)	.4
SARE	$ .1	.1	.1	.1	.1
Other Income	$ -	-	-	-	-
Division Contribution	$ (.2)	(.1)	(.1)	(.2)	.3
As % of Sales:					
Division Contribution	(13.2)	(7.8)	(9.3)	(19.0)	10.2
Gross Profit	(6.7)	(.7)	(1.5)	(10.9)	14.7
SARE	6.4	7.1	7.8	8.0	4.6
$ Sales/$ Investment	.29	.27	.35	.31	.76
Selling Price/lb	$2.24	2.35	2.18	2.19	2.19
Cost of Sales/lb	$2.39	2.37	2.21	2.43	1.87
Capacity - MM lbs	1.2	1.2	1.3	1.3	1.3
Excess	.7	.7	.6	.8	-
Internal Use	-	-	-	-	-
Sales	.5	.5	.7	.5	1.3

Caffeine profitability by normal standards will never be satisfactory. It is expected that within a year or two Monsanto will withdraw from the caffeine market unless some unexpected opportunity occurs to improve the margin. Foreign producers are selling below cost to the US market and at least one of them is in danger of bankruptcy. Monsanto no longer has a fully integrated position in caffeine and purchases its raw material from Germany. There will be little loss in capital or profits when Monsanto withdraws from this product.

DI OCTYL PHTHALATE
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ 2.1	5.3	5.9	6.9	7.1
Internal Use	$ .8	.6	.8	.6	.6
Total	$ 2.9	5.9	6.7	7.5	7.7
For Sales:					
% ROI (after tax)	(5.5)	(5.7)	(6.8)	(1.0)	1.4
Sales	$ 1.9	4.1	4.0	4.6	7.0
Gross Profit	$ (.1)	(.4)	(.6)	.2	.6
SARE	$ .2	.2	.2	.3	.4
Other Income	$ -	-	-	-	-
Division Contribution	$ (.3)	(.6)	(.8)	(.1)	.2
As % of Sales:					
Division Contribution	(12.7)	(15.3)	(20.9)	(2.9)	2.8
Gross Profit	(4.5)	(9.6)	(15.0)	3.3	7.9
SARE	8.2	5.7	5.9	6.2	5.1
$ Sales/$ Investment	.91	.77	.67	.68	.99
Selling Price/lb	$.220	.168	.142	.152	.152
Cost of Sales/lb	$.230	.184	.163	.147	.140
Capacity - MM lbs	*	*	*	49.1	49.1
Excess	-	-	-	15.8	-
Internal Use	2.3	2.8	3.6	2.7	2.7
Sales	11.2	24.2	28.0	30.6	46.4

* Product made in multiple purpose equipment which causes a fluctuating capacity to exist.

Price competition in 1962 and 1963 was the most stringent during the history of plasticizers. Nevertheless it appeared to bottom-out at 14¢ per pound and a price rise to 16¢ per pound was made effective October 1, 1963. It is expected to hold at this level in 1964.

Costs have been improved by a conversion arrangement on oxo alcohols. The intermediate, phthalic anhydride, has benefited from lower naphthalene prices. Fundamentally we have the lowest-cost naphthalene in the USA and the Delaware River phthalic anhydride plant is the most efficient in the industry. At present phthalate plasticizers are oversold with one exception --- the unit at Long Beach.

DOP is producing income via trade-outs in other products which is not credited to DOP. These trades produce income for the division which is impossible to obtain in any other way and in 1964 will amount to $300,000.

A further price increase of at least one cent per pound is anticipated in 1965. With continued efforts to improve costs of raw materials we should show an improved income in DOP.

ETHAVAN
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ 2.0	2.3	2.5	2.6	2.6
Internal Use	$ -	-	-	-	-
Total	$ 2.0	2.3	2.5	2.6	2.6
For Sales:					
% ROI (after tax)	13.8	14.0	12.8	13.7	13.9
Sales	$ 1.6	1.9	1.9	2.1	2.1
Gross Profit	$ .7	.8	.8	.9	.9
SARE	$ .1	.1	.1	.2	.2
Other Income	$ -	-	-	-	-
Division Contribution	$ .6	.7	.7	.7	.7
As % of Sales:					
Division Contribution	35.9	35.9	34.9	33.3	33.6
Gross Profit	41.8	42.6	42.1	40.8	41.1
SARE	6.4	7.1	7.8	8.0	8.0
$ Sales/$ Investment	.80	.82	.77	.82	.82
Selling Price/lb	$6.23	6.24	6.10	6.24	6.24
Cost of Sales/lb	$3.62	3.58	3.53	3.70	3.67
Capacity - MM lbs	.3	.3	.3	.3	.3
Excess	-	-	-	-	-
Internal Use	-	-	-	-	-
Sales	.3	.3	.3	.3	.3

Monsanto supplies the entire US market of Ethavan; result, an excellent margin and ROI. Full integration of raw materials makes our position strong. Frequently other producers threaten to enter this market but so far none have found the means.

The threat to this business rests with a reduction in tariff, which is now at 7¢ plus 45% of the US selling price. Monsanto will still dominate this market but at a lower price and margin if tariffs are reduced.

FUMARIC ACID
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ 3.0	3.6	4.0	4.2	4.2
Internal Use	$ .3	.6	.5	.4	.4
Total	$ 3.3	4.2	4.5	4.6	4.6
For Sales:					
% ROI (after tax)	(1.6)	(1.5)	(2.0)	.7	1.3
Sales	$ 1.3	1.3	1.4	1.9	1.9
Gross Profit	$ -	-	(.1)	.2	.3
SARE	$ .1	.1	.1	.1	.2
Other Income	$ -	-	-	-	-
Division Contribution	$(.1)	(.1)	(.2)	.1	.1
As % of Sales:					
Division Contribution	(7.3)	(8.7)	(12.2)	3.2	5.8
Gross Profit	.5	(.5)	(3.6)	11.1	13.7
SARE	7.7	8.2	8.6	8.0	8.0
$ Sales/$ Investment	.45	.37	.34	.45	.45
Selling Price/lb	$.221	.197	.162	.175	.175
Cost of Sales/lb	$.220	.198	.167	.156	.151
Capacity - MM lbs	13.2	13.2	11.8	12.0	12.0
Excess	6.5	5.2	2.2	-	-
Internal Use	.7	1.3	1.1	1.3	1.3
Sales	6.0	6.7	8.5	10.7	10.7

The price degradation afflicting maleic anhydride also attacked fumaric acid. The price decline was beyond reason as maleic anhydride producers jumped into fumaric acid as a way of moving product. In addition, a new production unit was established by a competitive food acid manufacturer (Pfizer) to supplement the traditional citric acid. Costs have been high due to volume variance carried over from maleic anhydride.

The price increase of January 1, 1964 has not been fully successful and additional efforts will be made in the future to increase prices to a reasonable level -- target, 24¢ per pound by 1968. Research and Development have been promoting new markets for fumaric acid as food-grade and cold-water soluble products. The potential volume of these uses, plus normal growth for resin applications, will oversell this unit in 1965 and new capital will be required. Justification is difficult in the face of 1963 losses, but long term, the product should be acceptable. Cold-water-soluble fumaric acid alone could add 10 million pounds to sales.

H ACID
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ 1.9	1.9	2.1	2.3	2.4
Internal Use	$ -	-	-	-	-
Total	$ 1.9	1.9	2.1	2.3	2.4
For Sales:					
% ROI (after tax)	9.0	10.0	7.6	6.0	12.2
Sales	$ 1.6	1.6	1.7	1.5	2.1
Gross Profit	$ .5	.5	.4	.4	.7
SARE	$ .1	.1	.1	.1	.1
Other Income	$ -	-	-	-	-
Division Contribution	$ .4	.4	.3	.3	.6
As % of Sales:					
Division Contribution	22.5	24.4	20.0	19.0	27.5
Gross Profit	29.0	32.1	24.5	25.4	32.7
SARE	6.9	7.9	4.7	6.6	5.3
$ Sales/$ Investment	.83	.85	.79	.63	.88
Selling Price/lb	$.949	.943	.837	.879	.879
Cost of Sales/lb	$.673	.641	.632	.656	.592
Capacity - MM lbs	2.4	2.4	2.4	2.4	2.4
Excess	.7	.7	.4	.7	-
Internal Use	-	-	-	-	-
Sales	1.7	1.7	2.0	1.7	2.4

The H-Acid budget is probably understated for the coming year due to the development of substantial overseas business. Pricing in European markets is very low but the U.S. selling price is stable after Monsanto reduced the price 10¢ per pound about a year ago.

Longer range, this product is subject to some of the textile business vicissitudes such as preference in certain colors from season to season. Monsanto is the only H-Acid producer who is not also in the dye business and is therefore the preferred supplier to the independent dye producers. We expect to continue to earn a satisfactory ROI and dominate the U.S.A. market.

MALEIC ANHYDRIDE
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ 7.2	7.3	7.3	7.5	7.5
Internal Use	$ 3.8	3.4	3.6	3.6	3.6
Total	$11.0	10.7	10.9	11.1	11.1
For Sales:					
% ROI (after tax)	3.5	1.9	.2	2.9	4.8
Sales	$ 3.8	3.4	2.9	3.7	4.3
Gross Profit	$ .8	.6	.3	.7	1.0
SARE	$ .3	.3	.3	.3	.3
Other Income	$ -	-	-	-	-
Division Contribution	$ .5	.3	-	.4	.7
As % of Sales:					
Division Contribution	13.9	8.5	1.1	11.6	16.7
Gross Profit	21.0	16.7	9.6	19.5	23.8
SARE	7.7	8.4	8.7	8.0	7.3
$ Sales/$ Investment	.53	.46	.40	.49	.57
Selling Price/lb	$.223	.170	.134	.143	.143
Cost of Sales/lb	$.176	.142	.121	.115	.109
Capacity - MM lbs	57.6	48.0	45.1	45.1	45.1
Excess	29.7	18.0	11.0	4.4	-
Internal Use	10.8	10.3	12.2	14.9	14.9
Sales	17.1	19.7	21.9	25.8	30.2

Competitive pressures through 1962 and 1963 caused major price reduction and a corresponding decline in earnings. Start-up charges at Chocolate Bayou contributed to higher costs in late 1962 and early 1963 (re transferred benzene). The introduction of higher prices at January 1, 1964 has not been completely successful with below-list selling continuing.

While we have been able to minimize costs with SD catalyst, certain marginal producers have shut down. Marketing strategy provides for increased volume as other high-cost producers discontinue operations. Fumaric acid products (resin, food and cold-water-soluble grades) and the dialkyl maleates and fumarates are being promoted to increase total volume of maleic anhydride consumed. Continued efforts will be made to obtain higher prices for these products without losing sales volume. By 1966 this program should be successful and income levels for the maleic anhydride product family will be acceptable.

MERSIZE RM, TFL, AND ROSIN SIZE KIP
($ in Millions)

		Actual			1964	
		1961	1962	1963	Budget	Cap'ty
Gross Invest. -	Sales	$ 5.2	5.2	6.0	6.0	6.6
	Internal Use	$ -	-	-	-	-
	Total	$ 5.2	5.2	6.0	6.0	6.6
For Sales:						
% ROI (after tax)		15.2	17.1	15.4	15.5	29.5
Sales		$ 6.5	7.3	7.8	8.3	14.8
Gross Profit		$ 2.2	2.7	2.8	2.9	5.3
SARE		$ .6	.8	.9	1.1	1.5
Other Income		$ -	-	-	-	.1
Division Contribution		$ 1.6	1.9	1.9	1.8	3.9
As % of Sales:						
Division Contribution		25.0	25.9	24.9	22.1	26.4
Gross Profit		34.3	36.9	36.5	34.8	35.8
SARE		9.6	11.3	12.0	13.4	9.9
$ Sales/$ Investment		1.27	1.38	1.29	1.40	2.24
Selling Price/lb		$.181	.170	.165	.162	.162
Cost of Sales/lb		$.119	.107	.105	.106	.104
Capacity - MM lbs		*	*	*	91.6	91.6
Excess		-	-	-	40.0	-
Internal Use		-	-	-	-	-
Sales		36.3	42.8	47.1	51.6	91.6

* Product made in multiple purpose equipment which causes a fluctuating capacity to exist.

Higher efficiency products are critical to this market. Such a product, Marsize TFL, was introduced in 1963 and priced at a premium initially but competitive action eliminated the premium. Only Hercules and American Cyanamid have been able to produce the higher-efficiency size and the bulk of the business is held by Monsanto and these producers.

Additional supply of crude tall oil in 1964-1965 will improve costs of tall oil rosin. Aggressive purchasing is supplementing our own rosin with purchased material at advantageous prices. Paste capacity is adequate for several years. Research continues in higher-efficiency products from rosin. Although major effort is also being directed toward a chemical size, it will be a specialty material and the rosin-based products will continue although at lower total production than at present. The paper industry continues to expand at an annual growth of 4% and new specialty and high-performance papers are expanding at 6-15% per year. In the latter applications, we plan to establish new specialty chemicals to supplement our existing line.

ORTHONITROANILINE
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ .6	.7	.6	.6	.7
Internal Use	$ -	-	-	-	-
Total	$ .6	.7	.6	.6	.7
For Sales:					
% ROI (after tax)	20.7	29.0	13.4	22.7	40.7
Sales	$ .6	.8	.5	.6	.9
Gross Profit	$ .3	.5	.2	.3	.6
SARE	$ -	.1	-	-	.1
Other Income	$ -	-	-	-	-
Division Contribution	$ .3	.4	.2	.3	.5
As % of Sales:					
Division Contribution	50.7	54.3	36.2	51.5	60.3
Gross Profit	56.9	61.8	40.6	57.6	64.9
SARE	6.9	7.9	4.7	6.6	5.0
$ Sales/$ Investment	.85	1.11	.77	.88	1.35
Selling Price/lb	$.453	.446	.434	.430	.430
Cost of Sales/lb	$.195	.170	.258	.182	.151
Capacity - MM lbs	*	*	*	2.1	2.1
Excess	-	-	-	.8	-
Internal Use	-	-	-	-	-
Sales	1.3	1.7	1.1	1.3	2.1

* Product made in multiple purpose equipment which causes a fluctuating capacity to exist.

No significant trends appear to influence this product in the next few years. The only changes occurring recently have been the re-entry of Koppers in the manufacture of ONA after purchasing the product from us in 1962. In addition to the resulting reduced volume, 1963 profitability was further lowered by higher plant costs due to mechanical equipment problems. The margin is good for this product and the ROI will remain very excellent.

PARA-NITROANILINE
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ 4.4	4.1	4.1	4.1	4.2
Internal Use	$ -	-	.2	.6	.6
Total	$ 4.4	4.1	4.3	4.7	4.8
For Sales:					
% ROI (after tax)	5.2	5.7	6.4	6.7	14.6
Sales	$ 2.9	2.3	2.3	2.3	3.6
Gross Profit	$ .7	.7	.6	.7	1.4
SARE	$ .2	.2	.1	.1	.2
Other Income	$ -	-	-	-	-
Division Contribution	$ .5	.5	.5	.6	1.2
As % of Sales:					
Division Contribution	16.7	21.4	23.7	24.0	34.2
Gross Profit	23.4	29.1	28.2	30.4	39.1
SARE	6.9	7.9	4.7	6.6	5.0
$ Sales/$ Investment	.64	.55	.56	.56	.86
Selling Price/lb	$.430	.430	.429	.425	.425
Cost of Sales/lb	$.330	.305	.308	.296	.259
Capacity - MM lbs	*	*	*	9.4	9.4
Excess	-	-	-	3.2	-
Internal Use	-	-	.3	.8	.8
Sales	6.6	5.3	5.4	5.4	8.6

* Product made in multiple purpose equipment which causes a fluctuating capacity to exist.

Although Monsanto is the largest producer and marketer of para-nitroaniline, it is unlikely that this product can reach desirable profitability in the foreseeable future.

The reduction in the demand for PNA derivatives in gasoline gum inhibitors has caused idle capacity to exist. The forecast indicates operations will be at 60% of capacity and there is little opportunity for improving this occupancy.

Monsanto has an unusually strong position in its economy for para-nitrochlorobenzene derivatives, including PNA, but competitive pressure will not permit raising PNA prices to support a proper margin. There is little indication of profitability improvement.

PARA-PHENETIDINE (INCL. TECH.)
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ 1.3	.9	.9	1.1	1.1
Internal Use	$ 5.9	7.1	5.6	5.7	5.7
Total	$ 7.2	8.0	6.5	6.8	6.8
For Sales:					
% ROI (after tax)	.5	(1.3)	9.3	5.8	9.3
Sales	$ .5	.4	.6	.6	.6
Gross Profit	$ -	-	.2	.2	.2
SARE	$ -	-	-	.1	-
Other Income	$ -	-	-	-	-
Division Contribution	$ -	-	.2	.1	.2
As % of Sales:					
Division Contribution	2.7	(6.5)	29.2	23.5	36.0
Gross Profit	9.5	1.1	33.5	29.9	42.4
SARE	7.0	7.6	4.7	6.6	6.6
$ Sales/$ Investment	.39	.40	.66	.52	.52
Selling Price/lb	$.551	.547	.557	.550	.550
Cost of Sales/lb	$.499	.540	.370	.386	.317
Capacity - MM lbs	*	*	*	10.2	10.2
Excess	-	-	-	-	-
Internal Use	8.7	10.8	9.2	9.2	9.2
Sales	.9	.7	1.1	1.0	1.0

* Product made in multiple purpose equipment which causes a fluctuating capacity to exist.

This product is made primarily as an intermediate to phenacetin, Santoflex AW and Santoquin. Sales reported here are incidental and are largely to our subsidiaries in England and Canada for the same products mentioned above. Sales earn a modest ROI because of the excess para-phenetidine capacity in the world, particularly in Germany as a result of restrictions recently placed on phenacetin; i.e., phenacetin is not produced to as great an extent as in the past, therefore the intermediate is selling at distressed prices. Monsanto is well placed in this chemistry, which goes back to nitrochlorobenzene and will remain completely competitive in the foreseeable future.

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PENTACHLOROPHENOL
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ 2.3	2.7	2.4	2.4	2.4
Internal Use	$ .9	.8	1.0	.9	.9
Total	$ 3.2	3.5	3.4	3.3	3.3
For Sales:					
% ROI (after tax)	8.6	8.2	6.9	4.8	7.1
Sales	$ 1.7	1.6	1.7	1.3	1.6
Gross Profit	$ .6	.7	.5	.4	.5
SARE	$ .2	.2	.2	.2	.2
Other Income	$ -	-	-	-	-
Division Contribution	$ .4	.5	.3	.2	.3
As % of Sales:					
Division Contribution	24.1	28.8	20.1	17.3	21.4
Gross Profit	33.5	39.8	31.8	30.0	33.0
SARE	9.6	11.3	12.0	13.4	12.1
$ Sales/$ Investment	.74	.59	.72	.56	.66
Selling Price/lb	$.171	.169	.161	.136	.136
Cost of Sales/lb	$.114	.102	.109	.095	.091
Capacity - MM lbs	*	*	*	16.2	16.2
Excess	-	-	-	1.9	-
Internal Use	5.2	3.6	5.6	4.7	4.7
Sales	9.8	9.4	10.4	9.6	11.5

* Product made in multiple purpose equipment which causes a fluctuating capacity to exist.

Earnings in 1963 were reduced slightly because of start-up problems on the pentachlorophenol prilling equipment. However, the new product form has been helpful in expanding our share of the market. Profitability drops further in 1964 due to an anticipated drop in selling price. Costs were improved substantially by lower-cost phenol. This trend will continue.

In 1963 Wood Treating Chemicals Co. was acquired to provide additional profits and better control of distribution, particularly of formulated pentachlorophenol products. Two new distributors were also added whereas Wood Treating had previously been our only distributor. This program resulted in greater sales with 1963 well ahead of 1962. Our program encompasses further distributor activity as well as direct industrial sales; via Wood Treating we will instigate and develop new formulations for the marketing of penta solutions and dry mixtures.

PHENACETIN
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ 2.6	3.1	2.4	2.3	2.4
Internal Use	$ -	-	-	-	-
Total	$ 2.6	3.1	2.4	2.3	2.4
For Sales:					
% ROI (after tax)	24.6	20.2	16.4	16.6	31.2
Sales	$ 2.8	3.0	1.9	2.0	3.0
Gross Profit	$ 1.5	1.5	.9	.9	1.7
SARE	$ .2	.2	.1	.1	.2
Other Income	$ -	-	-	-	-
Division Contribution	$ 1.3	1.3	.8	.8	1.5
As % of Sales:					
Division Contribution	46.9	43.6	42.2	38.6	49.4
Gross Profit	52.6	50.3	49.3	46.0	55.0
SARE	6.4	7.1	7.7	8.0	6.0
$ Sales/$ Investment	1.09	.97	.81	.86	1.26
Selling Price/lb	$.980	.915	.866	.850	.850
Cost of Sales/lb	.464	.455	.439	.459	.382
Capacity - MM lbs	3.4	3.4	3.5	3.5	3.5
Excess	.6	.1	1.3	1.2	-
Internal Use	-	-	-	-	-
Sales	2.8	3.3	2.2	2.3	3.5

The ROI and margin on this product continue to be good. However, the volume has been reduced by about one million pounds per year because of alleged deleterious effects of over-consumption of phenacetin in some countries. Two of the larger analgesic compounds have withdrawn phenacetin from their formula. Government restrictions may further reduce phenacetin consumption. On the other hand, failure to restrict the product by the government may permit a return to larger volumes.

Price attrition is being felt slowly from imported material and any further reduction in tariffs will reflect itself in Monsanto's net selling price. Monsanto dominates the US market for phenacetin and has a strong position in integrated intermediates. We will continue to dominate this market but probably at a somewhat lower price and volume.

PHENOL
($ in Millions)

		Actual			1964	
		1961	1962	1963	Budget	Cap'ty
Gross Invest. -	Sales	$ 8.7	15.9	15.1	11.1	11.1
	Internal Use	$ 25.0	30.0	28.8	33.8	33.8
	Total	$ 33.7	45.9	43.9	44.9	44.9
For Sales:						
% ROI (after tax)		6.7	2.7	.7	3.7	4.2
Sales (1)		$ 5.0	6.3	6.2	5.1	5.1
Gross Profit		$ 1.6	1.3	.5	1.1	1.2
SARE		$ .4	.5	.3	.3	.3
Other Income		$ -	.1	-	-	-
Division Contribution		$ 1.2	.9	.2	.8	.9
As % of Sales:						
Division Contribution		24.5	13.9	3.7	16.1	18.4
Gross Profit		31.4	21.2	8.3	22.5	24.8
SARE		6.9	7.9	4.7	6.6	6.6
$ Sales/$ Investment		.57	.40	.43	.46	.46
Selling Price/lb		$ .159	.126	.092	.089	.089
Cost of Sales/lb		$ .109	.099	.084	.069	.067
Capacity - MMlbs (2)		142.5	164.0	191.6	224.9	224.9
Excess		4.0	(5.5)	(21.9)	-	-
Internal Use		107.3	119.1	146.0	167.2	167.2
Sales (1)		31.2	50.4	67.5	57.7	57.7

(1) Includes purchased sales
(2) Avon annual capacity of 33.6MM lbs included in 1961 and 1962, excluded in 1963 and 1964 as equipment is inoperative.

Profitability has been reduced during the past three years to a low in 1963 primarily because of several new producers. Resulting in domestic delivered price attrition from 17.5¢ per pound to the present 11.25¢ per pound. Costs have been reduced materially over this period from about 12¢ per pound to the current forecast of 6.9¢. Further improvements will be made in cost so that a below 6¢ cost can be predicted.
Profitability includes by-products as these sales have been credited to the cost of phenol.
During the next 12 to 18 months there will be some price activity, probably resulting in a short-range reduction of another 3/4 to 1¢ per pound. Basically Monsanto is strong in the production of phenol having the largest single, one-line cumene phenol plant in the world and probably, therefore, the lowest unit costs. Our improved sulfonation phenol plant at WGK is not far behind in over-all economy. Nevertheless, sales of phenol will probably show no better than 4 - 6% ROI after tax for the next two or three years.

PHENOLSULFONIC ACID 65%
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ .6	.7	.7	.9	1.1
Internal Use	$ -	-	-	-	-
Total	$ .6	.7	.7	.9	1.1
For Sales:					
% ROI (after tax)	25.8	16.9	20.7	16.4	78.7
Sales	$ .7	.6	.6	.6	2.8
Gross Profit	$ .4	.3	.3	.3	1.8
SARE	$ .1	-	-	-	.1
Other Income	$ -	-	-	-	-
Division Contribution	$ .3	.3	.3	.3	1.7
AS % of Sales:					
Division Contribution	44.6	44.3	46.6	48.2	60.9
Gross Profit	50.8	52.0	50.9	54.4	64.0
SARE	6.8	8.0	4.6	6.6	3.2
$ Sales/$ Investment	1.21	.79	.92	.68	2.58
Selling Price/lb	$.217	.200	.183	.178	.178
Cost of Sales/lb	$.107	.096	.090	.081	.064
Capacity - MMlbs	19.0	19.0	15.6	15.5	15.5
Excess	15.8	16.0	12.3	12.2	-
Internal Use	-	-	-	-	-
Sales	3.2	3.0	3.3	3.3	15.5

This product, along with its companion product, Dihydroxy Diphenyl Sulfone, earned very excellent margins. Monsanto is dominant in these two products primarily for the treatment of steel plate. We have excellent relations with steel companies and expect to continue approximately as in the past.

Excess capacity is a considerable portion of capacity; but the type of equipment required in the process makes this inevitable at current realistic demand.

PHTHALIC ANHYDRIDE
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ 18.8	11.1	13.3	13.1	13.5
Internal Use	$ 8.5	15.0	16.7	16.1	16.1
Total	$ 27.3	26.1	30.0	29.2	29.6
For Sales:					
% ROI (after tax)	(.3)	(2.6)	(6.0)	(.5)	3.3
Sales	$ 6.8	5.3	3.8	4.4	8.4
Gross Profit	$ .4	(.2)	(1.3)	.2	1.4
SARE	$ .5	.4	.3	.3	.5
Other Income	$ -	-	-	-	-
Division Contribution	$ (.1)	(.6)	(1.6)	(.1)	.9
As % of Sales:					
Division Contribution	(1.5)	(11.4)	(43.4)	(3.0)	10.6
Gross Profit	6.0	(3.1)	(34.7)	4.9	16.1
SARE	7.7	8.3	8.7	8.0	5.5
$ Sales/$ Investment	.36	.48	.29	.34	.62
Selling Price/lb	$ .172	.137	.091	.106	.106
Cost of Sales/lb	$ .161	.141	.123	.101	.089
Capacity - MMlbs	118.9	162.3	163.2	144.0	144.0
Excess	50.5	69.5	62.7	37.7	-
Internal Use	29.1	54.3	58.8	64.7	64.7
Sales	39.3	38.5	41.7	41.6	79.3

Another victim of the price wars of 1962 and 1963, phthalic anhydride bottomed out and a 3¢ price increase was established October 1, 1963. The change did not benefit immediately because of carry-over commitments and inventory building at the old prices. This increase, however, will benefit this product substantially in 1964. During 1963 marginal facilities were taken out of operation, including 30 million pounds of capacity at the J. F. Queeny plant. The Delaware River plant exceeded design capacity and cost and has proven to be an excellent investment. This unit now has a demonstrated capacity of 65 million pounds per year and with 4¢ petroleum naphthalene will have a bulk cost of 6.5¢ per pound.

The units at J. F. Queeny and Everett are being studied to establish a program for capital improvement, and it appears likely that major new capital and retirement of much of the older facilities will be required to obtain the most economic solution. Our over-all objective is to reduce phthalic anhydride cost to 7¢ per pound or less. The operation of Chocolate Bayou for both naphthalene and ortho-xylene is being integrated into an over-all program for phthalic raw materials.

PYDRAUL A-200
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ .5	.9	.7	.9	1.0
Internal Use	$ -	-	-	-	-
Total	$ .5	.9	.7	.9	1.0
For Sales:					
% ROI (after tax)	11.3	18.2	18.7	18.5	36.1
Sales	$ .6	.9	.7	.8	1.5
Gross Profit	$ .2	.5	.4	.5	.9
SARE	$ .1	.2	.1	.1	.2
Other Income	$ -	-	-	-	-
Division Contribution	$ .1	.3	.3	.4	.7
As % of Sales:					
Division Contribution	22.9	40.4	38.4	42.6	46.7
Gross Profit	47.1	58.0	55.4	56.7	58.8
SARE	24.2	17.6	17.0	14.1	12.2
$ Sales/$ Investment	1.03	.94	1.02	.91	1.55
Selling Price/lb	$.223	.222	.221	.223	.223
Cost of Sales/lb	$.118	.093	.099	.096	.092
Capacity - MMlbs	*	*	*	6.9	6.9
Excess	-	-	-	3.1	-
Internal Use	-	-	-	-	-
Sales	2.5	3.9	3.3	3.8	6.9

*Product made in multiple purpose equipment which causes a fluctuating capacity to exist.

Pydraul A-200 is a low-cost hydraulic fluid developed several years ago to expand our volume in the industrial fluid market. It has shown favorable growth and profitability to date but the growth curve is expected to level off unless Pydraul F-9 customers are converted to A-200.

As this product is a blend of proprietary components, its cost and selling price should remain relatively stable for the predictable future.

PYRANOLS
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ 1.5	1.4	1.4	1.7	2.1
Internal Use	$ -	-	-	-	-
Total	$ 1.5	1.4	1.4	1.7	2.1
For Sales:					
% ROI (after tax)	12.5	13.7	9.2	11.1	40.3
Sales	$ 1.7	1.7	1.6	1.8	5.1
Gross Profit	$ .6	.6	.6	.7	2.0
SARE	$ .2	.2	.3	.3	.3
Other Income	$ -	-	-	-	-
Division Contribution	$ .4	.4	.3	.4	1.7
As % of Sales:					
Division Contribution	22.8	24.4	16.8	21.9	32.5
Gross Profit	33.9	36.4	35.2	36.0	39.1
SARE	11.1	12.1	18.4	14.1	6.5
$ Sales/$ Investment	1.14	1.17	1.15	1.05	2.48
Selling Price/lb	$.158	.160	.158	.156	.156
Cost of Sales/lb	$.105	.102	.102	.100	.095
Capacity - MMlbs	37.8	*	*	32.8	32.8
Excess	27.1	-	-	21.1	-
Internal Use	-	-	-	-	-
Sales	10.7	10.5	10.2	11.7	32.8

*Product made in multiple purpose equipment which causes a fluctuating capacity to exist.

Growth in Pyranol sales is directly related to the growth of electrical installations requiring these transformer fluids. Selling prices and costs have been relatively constant with profitability dependant upon sales volume.

Cooperative programs under way with GE and Westinghouse are directed toward substantially increasing the Pyranol content of the transformer fluids. Results of the studies are expected to be favorable and an increased volume of sales and greater total profits are anticipated in future years.

In 1963, higher SARE expenses resulted in a drop in profitability which is essentially restored in 1964.

SACCHARIN
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ 2.3	2.2	3.3	3.8	3.8
Internal Use	$ -	-	-	-	-
Total	$ 2.3	2.2	3.3	3.8	3.8
For Sales:					
% ROI (after tax)	8.1	11.9	1.5	2.2	3.9
Sales	$ 2.0	2.0	2.0	2.3	2.4
Gross Profit	$ .5	.7	.3	.4	.5
SARE	$ .1	.2	.2	.2	.2
Other Income	$ -	-	-	-	-
Division Contribution	$ .4	.5	.1	.2	.3
As % of Sales:					
Division Contribution	19.2	26.9	5.4	7.3	12.5
Gross Profit	25.3	33.7	12.9	15.1	20.2
SARE	6.4	7.1	7.8	8.0	7.8
$ Sales/$ Investment	.88	.92	.59	.61	.63
Selling Price/lb	$1.35	1.48	1.56	1.56	1.56
Cost of Sales/lb	$1.01	.981	1.36	1.32	1.25
Capacity - MMlbs	1.5	1.4	1.5	1.5	1.5
Excess	-	-	.2	-	-
Internal Use	-	-	-	-	-
Sales	1.5	1.4	1.3	1.5	1.5

Saccharin profits suffered a serious drop in 1963, which continues in 1964. By 1965 supply and demand should balance and we should again return to a 10% ROI. During the years 1963 and 1964 Monsanto is importing saccharin and OTSA in order to supply our customers. This along with start-up and higher plant costs, reduces profitability to an unacceptable level. Our new and efficient plant is now operating, producing good-quality saccharin. The toluene sulfonchloride and amide plant is being expended with completion schedule for July 1964. This will improve profitability upon completion. The price of saccharin will continue to be under pressure from Japanese producers, particularly if tariffs are reduced. We expect to continue the manufacture and sale of saccharin as a part of our enlarged effort to serve a food processor market. We will, therefore, not judge the merit of this program entirely by the sales and profits resulting from saccharin but from the development of new sweeteners including saccharin as one of the components. There is good evidence of initial success in this improved sweetener program.

SANTICIZER 141
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ 3.3	3.7	3.0	3.2	3.2
Internal Use	$ .2	.3	.5	.6	.6
Total	$ 3.5	4.0	3.5	3.8	3.8
For Sales:					
% ROI (after tax)	11.6	15.5	18.7	20.0	21.2
Sales	$ 3.3	3.1	2.9	2.9	2.9
Gross Profit	$ 1.0	1.3	1.3	1.5	1.6
SARE	$ .2	.2	.2	.2	.2
Other Income	$ -	.1	-	-	-
Division Contribution	$ .8	1.2	1.1	1.3	1.4
As % of Sales:					
Division Contribution	23.4	37.8	40.1	44.3	47.0
Gross Profit	30.6	41.6	45.1	50.3	53.0
SARE	8.1	5.7	5.9	6.2	6.2
$ Sales/$ Investment	1.03	.86	.92	.90	.90
Selling Price/lb	$.332	.327	.325	.324	.324
Cost of Sales/lb	$.230	.191	.178	.161	.152
Capacity - MMlbs	*	*	*	10.8	10.8
Excess	-	-	-	-	-
Internal Use	1.0	.9	2.2	1.8	1.8
Sales	10.1	9.6	8.9	9.0	9.0

*Product made in multiple purpose equipment which causes a fluctuating capacity to exist.

This product has been marketed as a specialty and pricing was kept at high levels during the DOP competitive period. The patent on 141 expires in 1966 and it is anticipated to move 141 in special blends at lower prices to those markets where the specialty price is not justified; thus retaining volume and discouraging competition.

Improvement in raw material costs and in productivity as a result of debottlenecking has contributed handsomely to lowered costs. At 16¢ we are in a relatively commanding position to meet competition; other phosphate esters which can be used in vinyl formulations cost 20-22¢ per pound and are priced at 24-30¢ per pound. Although the new process for phosphate esters completed by research in 1963 will not improve S-141 costs, S-141 is helped by our alcohol conversion arrangement and by low-cost phenol.

Beginning in 1965 the average price of S-141 will decline in anticipation of patent expiration; but will continue to sell as a relatively high-profit specialty, with return on investment at least 10%.

SANTICIZER 160
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ 9.5	11.0	10.7	11.5	11.5
Internal Use	$ 1.9	3.6	5.2	4.3	4.3
Total	$11.4	14.6	15.9	15.8	15.8
For Sales:					
% ROI (after tax)	1.4	.4	3.2	3.9	6.2
Sales	$ 5.5	6.6	6.8	7.4	7.4
Gross Profit	$ .7	.5	1.1	1.4	1.9
SARE	$ .4	.4	.4	.5	.5
Other Income	$ -	-	-	-	-
Division Contribution	$ .3	.1	.7	.9	1.4
As % of Sales:					
Division Contribution	4.9	1.4	11.1	12.3	19.4
Gross Profit	12.6	6.8	16.6	18.5	25.6
SARE	8.1	5.7	5.9	6.2	6.2
$ Sales/$ Investment	.58	.60	.60	.64	.64
Selling Price/lb	$.232	.190	.167	.160	.160
Cost of Sales/lb	$.203	.177	.139	.131	.119
Capacity - MMlbs	*	*	88.3	65.6	65.6
Excess	-	-	26.6	-	-
Internal Use	9.2	13.0	21.4	19.6	19.6
Sales	23.7	34.9	40.3	46.0	46.0

*Product made in multiple purpose equipment which causes a fluctuating capacity to exist.

Marketing strategy on Santicizer 160 was dedicated to preserving higher profit margins in the face of the DOP price slide. This plan succeeded and higher average net prices were maintained. Start-up costs at the new Delaware River plant were complete by early 1963 and by year-end it was evident that we have a completely successful, low-cost operation with with a demonstrated capacity of 65 million pounds. Other debottle-necking steps are under way to take the capacity to 75 million pounds by mid-1964.

Sales have reached this level of production and for short periods in 1963 it was necessary to use multiple purpose equipment at either Everett or J.F. Queeny. This is not expected in 1964 -- and will minimize over-all costs. The price level will be preserved through 1964 and will increase about one cent per pound in 1965. With higher divisor and lower costs we should return to a minimum return on investment of 6% (after tax).

Marketing strengths for S-160 are excellent. It is a superior plasticizer for vinyl flooring, particularly successful in vinyl asbestos. There is only one small competitor, Hatco, with limited capacity.

SANTICIZER 409
($ in Millions)

		Actual			1964	
		1961	1962	1963	Budget	Cap'ty
Gross Invest. -	Sales	$ 1.0	2.2	2.0	2.2	2.3
	Internal Use	$ .9	-	-	-	-
	Total	$ 1.9	2.2	2.0	2.2	2.3
For Sales:						
% ROI (after tax)		3.5	5.9	6.5	10.6	17.8
Sales		$ .7	1.5	1.7	1.7	2.1
Gross Profit		$ .1	.4	.4	.6	.9
SARE		$ -	.1	.1	.1	.1
Other Income		$ -	-	-	-	-
Division Contribution		$ .1	.3	.3	.5	.8
As % of Sales:						
Division Contribution		10.2	18.9	16.2	28.5	38.2
Gross Profit		17.9	23.5	21.7	34.6	43.7
SARE		8.1	5.6	5.9	6.2	5.5
$ Sales/$ Investment		.70	.65	.83	.74	.93
Selling Price/lb		$.386	.381	.377	.380	.380
Cost of Sales/lb		$.317	.292	.295	.248	.214
Capacity - MMlbs		*	*	*	5.6	5.6
Excess		-	-	-	1.2	-
Internal Use		-	-	-	-	-
Sales		3.5	3.8	4.4	4.4	5.6

*Product made in multiple purpose equipment which causes a fluctuating capacity to exist.

This product was the first of our Polymeric Plasticizers, the largest of several such materials manufactured at Everett. Additional experience in manufacture has improved costs as well as major reductions in the cost of adipic acid.

Polymeric Plasticizers are being developed as specialty products -- Santicizer 409 has been particularly successful in high-temperature vinyl wire coatings and in vinyl wall coverings. Competitive action by other producers has been severe but we have chosen to retain S-409 at a higher price level, taking the competitive action with our lower-cost product, Santicizer 411. This strategy has been successful although a one cent price reduction was necessary in 1963.

Idle time in this equipment has been reduced as our program on Polymerics expands. New products such as S-405, S-406 and S-402A will be helpful in filling this line to capacity. New capital will not be required until 1966.

SANTOCURE AND CYCLEX
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ 1.2	.9	1.1	1.0	1.1
Internal Use	$ .2	.1	-	-	-
Total	$ 1.4	1.0	1.1	1.0	1.1
For Sales:					
% ROI (after tax)	28.1	34.4	25.5	30.6	62.3
Sales	$ 1.8	1.6	1.5	1.4	3.1
Gross Profit	$ .8	.8	.7	.7	1.6
SARE	$ .1	.1	.1	.1	.2
Other Income	$ -	-	-	-	-
Division Contribution	$ .7	.7	.6	.6	1.4
As % of Sales:					
Division Contribution	38.9	41.4	38.9	42.1	45.6
Gross Profit	46.0	48.4	47.1	49.3	50.3
SARE	8.2	8.1	9.4	8.1	5.1
$ Sales/$ Investment	1.50	1.74	1.37	1.45	2.73
Selling Price/lb	$.656	.641	.651	.668	.668
Cost of Sales/lb	$.354	.331	.344	.339	.332
Capacity - MMlbs	*	*	*	4.6	4.6
Excess	-	-	-	2.5	-
Internal Use	.5	.5	-	-	-
Sales	2.8	2.5	2.4	2.1	4.6

*Product made in multiple purpose equipment which causes a fluctuating capacity to exist.

This rubber accelerator continues to be a high-profit product. Operating costs have declined as the result of lower prices on purchased raw materials such as aniline and cyclohexylamine.

Although price levels have held successfully, new competition has been introduced by Goodrich, American Cyanamid and Naugatuck, in delayed-action accelerators which are currently priced at the same level as Santocure. In the next several years competitive action may force the price of Santocure to lower levels. We anticipate, however, that earnings will remain substantially above the divisional average.

SANTOCURE NS AND CYCLEX B
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ 2.6	2.8	3.5	4.0	4.0
Internal Use	$ .1	-	-	-	-
Total	$ 2.7	2.8	3.5	4.0	4.0
For Sales:					
% ROI (after tax)	11.8	14.3	8.9	9.8	11.9
Sales	$ 2.6	3.0	3.1	3.5	4.0
Gross Profit	$ .8	1.0	.9	1.0	1.2
SARE	$ .2	.2	.3	.2	.3
Other Income	$ -	-	-	-	-
Division C ontribution	$ .6	.8	.6	.8	.9
As % of Sales:					
Division Contribution	24.9	27.6	20.7	22.2	23.5
Gross Profit	32.2	34.9	29.4	29.7	30.4
SARE	8.2	8.1	9.4	8.1	7.3
$ Sales/$ Investment	.99	1.08	.89	.88	1.01
Selling Price/lb	$.506	.485	.439	.460	.460
Cost of Sales/lb	$.343	.315	.310	.324	.320
Capacity - MMlbs	*	*	*	8.8	8.8
Excess	-	-	-	1.2	-
Internal Use	.1	.1	-	-	-
Sales	5.1	6.2	7.0	7.6	8.8

*Product made in multiple purpose equipment which causes a fluctuating capacity to exist.

Profitability has declined as selling price losses have exceeded cost savings. It is hoped, however, to arrest the trend in 1964, however, like Santocure, it faces price competition.

Firestone has been our major customer of this unique delayed-action accelerator. A revised marketing strategy is being developed to promote new sales of this product, potentially the lowest-cost delayed-action accelerator in our line. Sales to customers on a broad basis will increase the average return on investment from this product.

Further efforts will continue to improve costs of the intermediate T-Butylamine and this will further reduce the operating cost of Santocure NS.

SANTOFLEX AW AND AJONE E
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ 5.7	6.1	5.8	4.8	4.9
Internal Use	$ 1.1	1.6	1.9	2.3	2.3
Total	$ 6.8	7.7	7.7	7.1	7.2
For Sales:					
% ROI (after tax)	22.6	22.9	23.3	26.9	32.9
Sales	$ 6.3	6.5	5.9	5.0	5.9
Gross Profit	$ 3.1	3.3	3.3	3.0	3.6
SARE	$ .5	.5	.6	.4	.4
Other Income	$ .1	.1	.1	-	-
Division Contribution	$ 2.7	2.9	2.8	2.6	3.2
As % of Sales:					
Division Contribution	42.5	44.9	48.1	52.4	55.0
Gross Profit	49.4	51.8	56.2	59.4	61.3
SARE	8.2	8.1	9.4	8.1	7.2
$ Sales/$ Investment	1.11	1.07	1.01	1.02	1.20
Selling Price/lb	$.631	.606	.582	.610	.610
Cost of Sales/lb	$.319	.292	.255	.248	.236
Capacity - MMlbs	*	*	*	15.0	15.0
Excess	-	-	-	1.5	-
Internal Use	2.4	3.3	4.3	5.3	5.3
Sales	10.0	10.7	10.1	8.2	9.7

*Product made in multiple purpose equipment which causes a fluctuating capacity to exist.

Santoflex AW is the major antidegradant in the Monsanto line and a major contributor to the profitability for the rubber chemicals group.

Cost improvements have derived from lower-cost para-phenetidine and acetone. Unfortunately, para-phenylenediamine products are proving technically superior for antiozonant formulation. In the next several years part of the volume of Santoflex AW will be replaced by the phenylenediamines. Forecasts indicate a higher cost for the phenylenediamines, particularly in the developmental period and, as a result, total earnings of this product group will be lower for the next three years.

Our marketing strategy for antiozonants and antioxidants includes a program which should hold the maximum percentage of Santoflex AW in our line, using its desirable properties to supplement the superior antiozonant performance of the phenylenediamines. We have an 80% probability of succeeding in this program.

SANTOFLEX DD AND AJONE DD
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ 1.8	2.7	2.8	2.2	2.3
Internal Use	$ .4	.1	.1	.1	-
Total	$ 2.2	2.8	2.9	2.3	3.3
For Sales:					
% ROI (after tax)	23.7	26.2	20.2	25.5	33.4
Sales	$ 2.4	3.2	2.7	2.6	2.9
Gross Profit	$ 1.1	1.7	1.4	1.3	1.7
SARE	$ .2	.3	.2	.2	.2
Other Income	$ -	.1	-	-	-
Division Contribution	$ .9	1.5	1.2	1.1	1.5
As % of Sales:					
Division Contribution	37.2	45.8	43.4	43.5	51.8
Gross Profit	44.3	52.7	51.6	50.6	58.5
SARE	8.2	8.1	9.3	8.1	7.5
$ Sales/$ Investment	1.33	1.19	.97	1.17	1.29
Selling Price/lb	$.358	.350	.347	.356	.356
Cost of Sales/lb	$.200	.165	.168	.176	.148
Capacity - MMlbs	*	*	*	8.4	8.4
Excess	-	-	-	.8	-
Internal Use	1.6	.3	.2	.2	.2
Sales	6.8	9.1	7.9	7.4	8.2

*Product made in multiple purpose equipment which causes a flutuating capacity to exist.

Cost improvement over 1961-1963 has resulted from lower manufacturing costs for Dodecyl Benzene, Dodecyl Aniline and Acetone, the intermediates for this product. Improved freight rates were also negotiated in 1963 on the move between Krummrich and Nitro plants; barging of Acetone to Nitro was established. Major application is as a stabilizer in synthetic butadiene-styrene rubber. The phenylenediamines will have some impact on this application but a major share of the Santoflex DD sale is expected to continue. The low price of this material will help to hold it in the stabilizer application.

Our over-all marketing strategy for antidegradants includes the effort to maintain maximum sales of Santoflex DD wherever it can perform successfully. Probability of success -- 70%.

SANTOFLEX 36
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ .7	2.2	2.6	1.8	1.8
Internal Use	$ -	-	-	-	-
Total	$ .7	2.2	2.6	1.8	1.8
For Sales:					
% ROI (after tax)	(30.6)	(11.1)	(9.5)	-	2.6
Sales	$ .2	.5	1.1	1.4	1.4
Gross Profit	$ (.4)	(.5)	(.4)	.1	.2
SARE	$ -	-	.1	.1	.1
Other Income	$ -	-	-	-	-
Division Contribution	$ (.4)	(.5)	(.5)	-	.1
As % of Sales:					
Division Contribution	-	-	(46.3)	-	6.6
Gross Profit	-	(91.9)	(36.9)	7.9	14.5
SARE	8.1	8.1	9.4	8.1	8.1
$ Sales/$ Investment	.26	.23	.43	.79	.79
Selling Price/lb	$1.36	1.15	1.03	1.07	1.07
Cost of Sales/lb	$4.63	2.20	1.41	.988	.918
Capacity - MMlbs	*	*	*	1.3	1.3
Excess	-	-	-	-	-
Internal Use	-	-	-	-	-
Sales	.1	.5	1.1	1.3	1.3

*Product made in multiple purpose equipment which causes a fluctuating capacity to exist.

One of the new phenylenediamine antidegradants, Santoflex 36 has encountered some toxicity problems and will be completely displaced by other products of lower toxicity. We anticipate Santoflex 13 and Santoflex 77 as a complete replacement for this product, with the exchange progressing in 1964 and completed by mid-year; the new products will occupy the equipment vacated by Santoflex 36.

SANTOLUBE 203 B&C (INCL. SANTOLENE F & FC)
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ 1.9	1.7	1.2	.9	1.0
Internal Use	$ .5	.5	.7	.9	.9
Total	$ 2.4	2.2	1.9	1.8	1.9
For Sales:					
% ROI (after tax)	7.2	13.0	10.8	6.2	23.9
Sales	$ 1.7	1.9	1.4	1.0	2.3
Gross Profit	$ .5	.7	.5	.2	.7
SARE	$ .2	.3	.2	.1	.2
Other Income	$ -	-	-	-	-
Division Contribution	$ .3	.4	.3	.1	.5
As % of Sales:					
Division Contribution	16.5	24.0	19.9	11.9	21.7
Gross Profit	29.6	37.6	33.8	24.7	30.9
SARE	13.4	13.8	14.2	13.0	9.3
$ Sales/$ Investment	.91	1.13	1.13	1.08	2.20
Selling Price/lb	$.179	.218	.226	.191	.191
Cost of Sales/lb	$.126	.136	.149	.144	.132
Capacity - MMlbs	*	*	*	17.2	17.2
Excess	-	-	-	6.9	-
Internal Use	3.6	4.2	3.8	5.1	5.1
Sales	9.7	8.6	6.2	5.2	12.1

*Product made in multiple purpose equipment which causes a fluctuating capacity to exist.

Santolube 203C will soon become extinct with the loss of raw material source as the result of Inorganic Division's change to a biodegradable detergent.

Sales of 203C in the past have been divided between fuel oil detergent, sales to Mobil as such, and as a component of blends. It is no longer competitive with products from Bryton, Sonneborn, Lubrizol, etc. as a motor oil additive (Sulfonate).

Manufacturing costs have varied upward as the result of volume and from yield variations due to the quality of high boiler material supplied by Inorganic Division.

The product will be replaced within the next year by a new barium sulfonate, which will make use of Santolube 203 equipment.

SANTOLUBE 393
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ 1.1	.9	1.2	.7	.8
Internal Use	$ .6	.6	1.4	.5	.5
Total	$ 1.7	1.5	2.6	1.2	1.3
For Sales:					
% ROI (after tax)	15.0	16.6	17.5	48.6	67.9
Sales	$ 1.6	1.5	1.7	2.4	3.4
Gross Profit	$ .5	.5	.7	1.0	1.5
SARE	$ .2	.2	.2	.3	.4
Other Income	$ -	-	-	-	-
Division Contribution	$ .3	.3	.5	.7	1.1
As % of Sales:					
Division Contribution	20.7	19.9	27.0	29.5	32.1
Gross Profit	33.9	33.5	40.8	42.1	43.0
SARE	13.4	13.9	14.2	13.0	11.1
$ Sales/$ Investment	1.51	1.74	1.35	3.43	4.23
Selling Price/lb	$.266	.238	.244	.277	.277
Cost of Sales/lb	$.176	.158	.145	.160	.158
Capacity - MMlbs	*	*	*	20.1	20.1
Excess	-	-	-	3.5	-
Internal Use	5.6	7.6	8.6	7.8	7.8
Sales	6.1	6.4	6.8	8.8	12.3

*Product made in multiple purpose equipment which causes a fluctuating capacity to exist.

Santolube 393 is sold as is to Mobil and other oil companies. It is also used in petroleum additive blends. This has been a stable member of the petroleum additive product family and has consistently improved in profitability over the past few years. Selling prices have fluctuated somwhat in line with competitive products but costs have improved considerably as the result of increased volume, improved yields and lower raw material costs.

It is anticipated that this product will continue to show favorable profit performance in the future.

SANTOLUBE 801
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ 2.6	2.1	2.3	2.8	2.9
Internal Use	$ -	1.3	1.2	.5	.5
Total	$ 2.6	3.4	3.5	3.3	3.4
For Sales:					
% ROI (after tax)	(2.5)	3.4	1.9	3.2	12.0
Sales	$ .3	1.7	2.1	2.8	4.2
Gross Profit	$ (.1)	.4	.4	.6	1.2
SARE	$ -	.2	.3	.4	.5
Other Income	$ -	-	-	-	-
Division Contribution	$ (.1)	.2	.1	.2	.7
As % of Sales:					
Division Contribution	(39.3)	9.0	4.3	6.6	16.7
Gross Profit	(26.0)	22.5	18.3	19.4	27.4
SARE	13.3	13.8	14.2	13.0	10.9
$ Sales/$ Investment	.13	.80	.91	1.01	1.43
Selling Price/lb	$.157	.158	.158	.160	.160
Cost of Sales/lb	$.197	.122	.129	.129	.116
Capacity - MMlbs	39.3	24.8	33.6	29.6	29.6
Excess	37.1	6.1	13.2	8.6	-
Internal Use	-	7.9	7.0	3.3	3.3
Sales	2.2	10.8	13.4	17.7	26.3

This product was developed to replace large quantities of Amoco 121 that were purchased from our competitor. Profit performance has been much less favorable than anticipated due to various factors. These include changes in additive requirements to meet performance demands of the auto industry and competitive pricing influences.

Since the outlook for Santolube 801 indicates that the volume is expected to level off and then decline, we are now planning for utilization of the idle capacity for other detergent additives. Probability for success in using the plant for production of high-base calcium sulfonate appears favorable at this stage of the evaluation.

SANTOPHEN 1
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ 1.4	1.4	1.7	1.8	1.8
Internal Use	$ -	-	-	-	-
Total	$ 1.4	1.4	1.7	1.8	1.8
For Sales:					
% ROI (after tax)	7.1	9.7	9.4	12.8	17.1
Sales	$ .8	.9	1.0	1.0	1.2
Gross Profit	$ .3	.4	.4	.5	.7
SARE	$ .1	.1	.1	.1	.1
Other Income	$ -	-	-	-	-
Division Contribution	$ .2	.3	.3	.4	.6
As % of Sales:					
Division Contribution	24.7	32.1	32.9	45.2	49.7
Gross Profit	30.8	38.8	40.1	52.4	56.1
SARE	6.5	7.1	7.8	8.0	6.9
$ Sales/$ Investment	.60	.63	.60	.56	.69
Selling Price/lb	$.640	.641	.635	.645	.645
Cost of Sales/lb	$.443	.392	.380	.307	.283
Capacity - MMlbs	*	2.0	1.9	1.9	1.9
Excess	-	.6	.3	.3	-
Internal Use	-	-	-	-	-
Sales	1.3	1.4	1.6	1.6	1.9

*Product made in multiple purpose equipment which causes a fluctuating capacity to exist.

Profitability is improving each year, particularly since the installation of the new plant at WGK with lower costs. Monsanto's strength is in having the best product on the market to supply the germicide needs.

Pricing should remain firm and costs will be improved, as forecast, by about 20%. A steady growth in volume should be available in this product in coming years.

SANTOPOID 23 RI & 23 RIA
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ 1.8	1.5	1.7	1.1	1.1
Internal Use	$ -	-	-	-	-
Total	$ 1.8	1.5	1.7	1.1	1.1
For Sales:					
% ROI (after tax)	13.9	15.3	13.7	26.6	30.9
Sales	$ 2.8	2.2	2.4	2.4	2.4
Gross Profit	$ .9	.8	.8	.9	1.0
SARE	$ .4	.3	.3	.3	.3
Other Income	$ -	-	-	-	-
Division Contribution	$ .5	.5	.5	.6	.7
As % of Sales:					
Division Contribution	18.5	21.0	19.9	25.4	28.3
Gross Profit	31.7	34.5	33.8	38.0	41.0
SARE	13.4	13.8	14.2	13.0	13.0
$ Sales/$ Investment	1.56	1.52	1.43	2.18	2.18
Selling Price/lb	$.294	.306	.303	.307	.307
Cost of Sales/lb	$.201	.201	.201	.190	.181
Capacity - MMlbs	*	*	*	7.7	7.7
Excess	-	-	-	-	-
Internal Use	-	-	-	-	-
Sales	9.9	7.2	7.8	7.7	7.7

*Product made in multiple purpose equipment which causes a fluctuating capacity to exist.

Santopoid23 RI is our proprietary, patented gear oil additive which has attained a strong position in the market. The product has exhibited excellent growth and profitability since its development in 1956. With this additive we have obtained a major share of the market and sales volume has leveled off. Selling prices and costs have remained relatively stable over the years and are expected to continue at current levels. Fuller utilization of equipment by other products and elimination of Acetone investment from usage are the major reasons for investment drop in 1964.

The future of the Santopoid 23 RI is somewhat uncertain in view of potential competition. We are working on the development of an alternate or supplementary product but are endeavoring through aggressive marketing efforts to maintain a strong position with 23 RI.

Market developments and performance requirements over the next 2 to 3 years may determine the extent of success we can achieve with this product.

SANTOWHITE CRYSTALS AND SANTONOX (INCL. SANTONOX R)

($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ 1.1	1.2	1.7	2.0	2.4
Internal Use	$ -	.1	-	-	.1
Total	$ 1.1	1.3	1.7	2.0	2.5
For Sales:					
% ROI (after tax)	18.8	24.4	17.8	20.5	55.7
Sales	$ 1.5	2.1	2.0	2.4	6.9
Gross Profit	$ .5	.7	.8	1.0	3.0
SARE	$ .1	.1	.2	.2	.3
Other Income	$ -	-	-	-	-
Division Contribution	$ .4	.6	.6	.8	2.7
As % of Sales:					
Division Contribution	27.7	29.9	30.8	34.0	39.6
Gross Profit	35.0	35.5	37.4	40.7	43.8
SARE	8.2	6.9	7.4	7.1	4.3
$ Sales/$ Investment	1.41	1.70	1.20	1.21	2.81
Selling Price/lb	$1.77	1.81	1.83	1.79	1.79
Cost of Sales/lb	$1.15	1.17	1.15	1.06	1.01
Capacity - MMlbs	*	*	*	3.8	3.8
Excess	-	-	-	2.5	-
Internal Use	-	-	-	-	-
Sales	.8	1.2	1.1	1.3	3.8

*Product made in multiple purpose equipment which causes a fluctuating capacity to exist.

Cost improvements have resulted from lower-priced raw materials. Further efforts are under way to again reduce prices of the purchased material. We anticipate that the selling price will be maintained at somewhat lower levels, but lower costs should keep this product at approximately the 20% earnings range. This is a specialty antioxidant. New competitive products are being introduced but we believe the performance of Santowhite crystals justified the price level. From time to time there has been some review of manufacture by the suppliers of raw material, but none of these companies is in a position to market successfully to the rubber trade.

SKYDROL
($ in Millions)

		Actual			1964	
		1961	1962	1963	Budget	Cap'ty
Gross Invest. -	Sales	$ .4	.4	.4	.3	.3
	Internal Use	$ -	-	-	-	-
	Total	$ .4	.4	.4	.3	.3
For Sales:						
% ROI (after tax)		34.6	35.3	30.3	39.9	48.3
Sales		$ .7	.6	.6	.6	.7
Gross Profit		$ .4	.4	.3	.4	.4
SARE		$ .1	.1	.1	.1	.1
Other Income		$ -	-	-	-	-
Division Contribution		$ .3	.3	.2	.3	.3
As % of Sales:						
Division Contribution		42.7	42.3	41.3	44.2	45.8
Gross Profit		52.6	56.3	57.1	58.4	59.8
SARE		9.8	14.0	15.8	14.3	13.9
$ Sales/$ Investment		1.69	1.75	1.53	1.88	2.10
Selling Price/lb		$1.32	1.32	1.32	1.32	1.32
Cost of Sales/lb		$.626	.577	.563	.550	.532
Capacity - MMlbs		*	*	*	.5	.5
Excess		-	-	-	.1	-
Internal Use		-	-	-	-	-
Sales		.6	.5	.5	.4	.5

*Product made in multiple purpose equipment which causes a fluctuating capacity to exist.

This product also known as Skydrol 7000, was developed for use in the piston engine aircraft such as The Douglas DC 4, 6 and 7. It has been a very profitable item but sales have been declining due to phasing out of the piston engine aircraft and replacing them with jet aircraft.

Both selling prices and costs have been relatively stable over the life of the product and this situation is expected to continue until such time as the volume reaches a very low level.

The product is being succeeded by Skydrol 500A, the hydraulic fluid being used in jet aircraft.

SKYDROL 500-A
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ 2.0	1.6	1.7	1.8	1.8
Internal Use	$ -	-	-	-	-
Total	$ 2.0	1.6	1.7	1.8	1.8
For Sales:					
% ROI (after tax)	26.3	30.7	25.5	32.0	38.4
Sales	$ 2.6	2.6	2.7	3.1	3.5
Gross Profit	$ 1.4	1.4	1.3	1.6	1.9
SARE	$ .3	.4	.4	.4	.5
Other Income	$ -	-	-	-	-
Division Contribution	$ 1.1	1.0	.9	1.2	1.4
As % of Sales:					
Division Contribution	41.5	39.3	34.4	38.8	39.8
Gross Profit	51.3	53.5	50.4	53.0	53.7
SARE	9.8	14.2	15.9	14.2	13.9
$ Sales/$ Investment	1.32	1.63	1.54	1.72	1.93
Selling Price/lb	$1.61	1.62	1.60	1.58	1.58
Cost of Sales/lb	$.781	.753	.794	.745	.734
Capacity - MMlbs	*	*	*	2.2	2.2
Excess	-	-	-	.3	-
Internal Use	-	-	-	-	-
Sales	1.6	1.6	1.7	1.9	2.2

*Product made in multiple purpose equipment which causes a fluctuating capacity to exist.

Skydrol 500A is well accepted by most of the commercial jet aircraft producers in the U.S. and Europe. The product has exhibited very favorable growth and profitability and is expected to continue to do so for the predictable future of the current generation of jet aircraft.

The leveling of sales during 1961-1963 inclusive is attributable to improved maintenance of jet aircraft and slowdown in the production of jet planes in the U.S. Another growth period for the product is expected during the next few years with the use of Skydrol 500A in the Boeing 727, Vickers VC-10, DeHaviland Trident, and The BAC 111 - all new jet aircraft just reaching the commercial stage.

THIOFIDE
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ .7	.6	.8	.8	.9
Internal Use	$ -	-	-	-	-
Total	$ .7	.6	.8	.8	.9
For Sales:					
% ROI (after tax)	17.2	20.4	14.4	13.4	33.8
Sales	$ .9	.8	.7	.8	1.9
Gross Profit	$ .3	.3	.3	.3	.7
SARE	$ .1	.1	.1	.1	.1
Other Income	$ -	-	-	-	-
Division Contribution	$ .2	.2	.2	.2	.6
As % of Sales:					
Division Contribution	29.4	34.0	31.4	27.5	32.1
Gross Profit	36.8	41.1	39.9	34.9	36.7
SARE	8.2	8.1	9.4	8.1	4.8
$ Sales/$ Investment	1.22	1.25	.96	.97	2.11
Selling Price/lb	$.456	.463	.472	.450	.450
Cost of Sales/lb	$.288	.273	.284	.293	.285
Capacity - MMlbs	*	*	*	4.2	4.2
Excess	-	-	-	2.5	-
Internal Use	-	-	-	-	-
Sales	1.9	1.7	1.5	1.7	4.2

*Product made in multiple purpose equipment which causes a fluctuating capacity to exist.

Thiofide has been a successful accelerator for rubber vulcanization but has become essentially a commodity product. New production by rubber manufacturers and efforts by other suppliers to hold market position are now likely to reduce the price level. Thiofide (Thimor) is also used as an intermediate for Santocure MOR and MOR-90. Currently total requirements for internal use and for sale are close to exceeding the installed capacity. However, we plan to continue to promote Thiofide sales and by other means reduce the consumption for Santocure MOR.

A sharp drop in $ Sales/$ Investment has reduced return on investment in 1963 and 1964.

3,4,4-TRICHLOROCARBANILIDE
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ 2.6	2.3	3.0	3.2	3.5
Internal Use	$ -	-	-	-	-
Total	$ 2.6	2.3	3.0	3.2	3.5
For Sales:					
% ROI (after tax)	27.0	29.4	20.0	25.0	49.8
Sales	$ 3.3	3.2	3.2	3.6	6.5
Gross Profit	$ 1.7	1.6	1.5	1.9	3.8
SARE	$ .2	.2	.3	.3	.3
Other Income	$ -	-	-	-	-
Division Contribution	$ 1.5	1.4	1.2	1.6	3.5
As % of Sales:					
Division Contribution	44.7	43.7	38.6	44.1	53.3
Gross Profit	50.5	50.3	45.7	51.4	58.4
SARE	6.4	7.1	7.7	8.0	5.5
$ Sales/$ Investment	1.26	1.41	1.08	1.13	1.87
Selling Price/lb	$1.87	1.89	1.89	1.90	1.90
Cost of Sales/lb	$.923	.940	1.03	.924	.791
Capacity - MMlbs	*	*	*	3.4	3.4
Excess	-	-	-	1.5	-
Internal Use	-	-	-	-	-
Sales	1.8	1.7	1.7	1.9	3.4

*Product made in multiple purpose equipment which causes a fluctuating capacity to exist.

This is a proprietary product of Monsanto's in which we serve the bacteriostat market. Monsanto is fully integrated in intermediates and expects improved products of this type to enlarge the market for bacteriostats particularly in laundry detergents. This product, or its successor, will continue to earn an excellent margin and ROI.

VANILLIN
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ 2.0	2.4	2.6	2.4	2.4
Internal Use	$ -	-	-	-	-
Total	$ 2.0	2.4	2.6	2.4	2.4
For Sales:					
% ROI (after tax)	12.3	21.7	18.1	24.9	27.4
Sales	$ 1.8	2.6	2.4	2.8	3.0
Gross Profit	$ .6	1.3	1.1	1.4	1.5
SARE	$ .1	.2	.2	.2	.2
Other Income	$ -	-	-	-	-
Division Contribution	$ .5	1.1	.9	1.2	1.3
As % of Sales:					
Division Contribution	28.3	40.4	40.1	42.9	44.8
Gross Profit	34.3	47.1	47.2	50.3	51.9
SARE	6.4	7.1	7.7	8.0	7.7
$ Sales/$ Investment	.90	1.12	.94	1.16	1.22
Selling Price/lb	$2.06	2.19	2.22	2.26	2.26
Cost of Sales/lb	$1.35	1.16	1.17	1.12	1.09
Capacity - MMlbs	1.3	1.3	1.3	1.3	1.3
Excess	.4	.1	.2	.1	-
Internal Use	-	-	-	-	-
Sales	.9	1.2	1.1	1.2	1.3

Vanillin profitability has always been good. Currently we are fully occupying the capacity of our plant by selling to other producers. This should result in an all-time high ROI of 24.9%. This high-profit margin item is subject to price reductions by competitors and resellers making the pricing situation somewhat fluid. Nevertheless, we have maintained a $3 per pound selling price for the U.S.P. product and we forecast a rather stable margin. Costs have been improved steadily and capacity has been increased. We expect the present situation to be maintained.

PLASTICS DIVISION

Division profitability has been ($MM's)

	Actual			1964
	1961	1962	1963	Budget
% Return on Investment AT	2.7	2.6	1.7	2.6
Gross Investment	184.8	219.3	224.1	239.0
Sales	130.5	134.9	130.7	141.6
Division Contribution BT	10.3	12.1	7.9	12.6
Div. Cont. as % of Sales	7.9	9.0	6.0	8.9
$ Sales/$ Investment	.71	.62	.58	.59

In 1963 investment in the divisions' products earned the following rates of return:

	% of Total Investment
Loss	42.4
0 to 3%	7.5
3 to 5.8%	33.9
Over 5.8%	16.2

Major products reported are:

These comprise 100% of the divisions' investment in 1963.

AMINOPLASTS
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ 9.0	8.9	10.1	11.3	12.1
Internal Use	$ -	-	-	-	-
Total	$ 9.0	8.9	10.1	11.3	12.1
For Sales:					
% ROI (after tax)	9.0	8.1	8.8	8.3	14.6
Sales	$ 9.9	9.5	9.7	9.9	14.5
Gross Profit	$ 2.6	2.4	2.7	2.7	4.6
SARE	$ 1.0	1.0	.9	.9	1.1
Other Income	$ .1	.1	.1	.1	-
Division Contribution	$ 1.7	1.5	1.9	1.9	3.5
As % of Sales:					
Division Contribution	17.3	15.9	19.1	18.8	24.2
Gross Profit	26.7	24.8	27.7	27.4	31.9
SARE	10.4	10.1	9.0	9.1	7.9
$ Sales/$ Investment	1.09	1.06	.96	.88	1.20
Selling Price/lb	$.236	.235	.242	.203	.214
Cost of Sales/lb	$.173	.177	.175	.148	.146
Capacity - MM lbs	51.7	56.9	58.0	68.0	68.0
Excess	9.9	16.7	17.9	19.1	-
Internal Use	-	-	-	-	-
Sales	41.8	40.2	40.1	48.9	68.0

Renewed emphasis on research the past few years played a major role in the significant increase in 1963 sales. The two major market areas for aminoplasts are laminating resins and automotive coatings. Our quality position in coatings is second to none and is even now recognized in Europe with some willingness to pay premium price over local products. Our laminating resin competition is becoming keener with the entry of new suppliers, and the larger customers going captive. There is also a pressure to convert from powdered resins to syrups which are now being evaluated by the Plastics Division. The lower profit and price in the 1964 budget reflects these pressures.

FORMALIN
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ 4.0	5.2	5.4	5.8	5.8
Internal Use	$ 2.0	2.0	2.0	2.0	2.0
Total	$ 6.0	7.2	7.4	7.8	7.8
For Sales:					
% ROI (after tax)	9.0	6.2	7.3	8.7	8.9
Sales	$ 2.0	2.4	2.5	3.0	3.1
Gross Profit	$ .8	.8	.8	1.0	1.1
SARE	$ .1	.1	.1	.1	.2
Other Income	$ -	-	.1	.1	.1
Division Contribution	$ .7	.7	.8	1.0	1.0
As % of Sales:					
Division Contribution	38.0	28.7	33.6	33.1	33.3
Gross Profit	42.4	33.4	33.6	33.8	34.0
SARE	4.5	4.7	4.9	4.6	4.5
$ Sales/$ Investment	.49	.45	.45	.52	.54
Selling Price/lb	$.028	.028	.027	.025	.025
Cost of Sales/lb	$.016	.019	.018	.016	.016
Capacity - MM lbs	155.0	155.0	165.0	215.0	215.0
Excess	43.9	23.1	22.3	3.5	-
Internal Use	42.0	49.6	51.9	88.8	88.8
Sales	69.1	82.3	90.8	122.7	126.2

Formalin sales have the insurance of long-term contracts, the largest of which is a 5-year contract with American Cynamid. Cost of formalin benefit from a captive methanol position and are supported by strong formalin technology.

The newly approved Oregon facility (60MM lb. capacity) will be largely for captive use. However, any unused capacity will be sold when available.

The market price of formalin has been firm in recent years. Indications now point to some erosion in the near term but forward plans have anticipated a decline.

HI DENSITY P.E.
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ 1.7	4.7	9.9	14.0	14.6
Internal Use	$ -	-	-	-	-
Total	$ 1.7	4.7	9.9	14.0	14.6
For Sales:					
% ROI (after tax)	(32.0)	(11.0)	(18.3)	(9.2)	.2
Sales	$ .4	1.2	.1	4.9	8.5
Gross Profit	$ -	(.1)	(2.9)	(1.9)	.8
SARE	$ 1.1	1.0	.9	.7	.7
Other Income	$ -	-	-	-	-
Division Contribution	$(1.1)	(1.1)	(3.8)	(2.6)	.1
As % of Sales:					
Division Contribution	-	(89.0)	-	(52.6)	.7
Gross Profit	6.1	(9.8)	-	(39.0)	9.3
SARE	-	79.3	-	13.5	8.6
$ Sales/$ Investment	.22	.26	.26	.35	.58
Selling Price/lb	$.350	.310	.310	.168	.170
Cost of Sales/lb	$.329	.341	1.93	.234	.154
Capacity - MM lbs	1.0	3.9	1.6	50.0	50.0
Excess	-	-	-	21.0	-
Internal Use	-	-	-	-	-
Sales	1.0	3.9	1.6	29.0	50.0

In the period reported, sales in 1961, 1962 and much of 1963 represent resale of purchased material. Results of 1963 also reflect plant start-up problems with essentially no sales revenue. The budget for 1964 shows a steady improvement in production with operations approaching design premises by the end of the year. In the latter half of the year progress may be limited by the ability to develop outside sales or product to complement the policy decision to move only 65% of first-quality production to the Packaging Division.

The industry in general suffers from excess installed capacity and resultant price weakness. It is expected that by 1965 costs will be fully competitive to anyone in a similar plant size and ethylene costs. The plant is expected to be modestly profitable over the next few years if it is allowed to supply the full requirements of Packaging Division. Without this advantage, results are expected to about break even.

LATICES
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ 3.8	3.7	3.6	3.6	3.7
Internal Use	$ -	-	-	-	-
Total	$ 3.8	3.7	3.6	3.6	3.7
For Sales:					
% RIO (after tax)	4.6	7.4	9.1	9.3	10.8
Sales	$ 2.9	2.9	2.7	3.0	3.6
Gross Profit	$ .9	.9	.9	1.0	1.2
SARE	$ .5	.5	.4	.3	.4
Other Income	$ -	.2	.2	-	-
Division Contribution	$ .4	.6	.7	.7	.8
As % of Sales:					
Division Contribution	12.6	20.2	26.0	22.2	22.3
Gross Profit	31.2	32.2	32.5	33.4	32.6
SARE	19.4	19.0	9.8	11.8	10.8
$ Sales/$ Investment	.77	.77	.73	.84	.97
Selling Price/lb	$.153	.157	.122	.118	.117
Cost of Sales/lb	$.105	.106	.082	.079	.079
Capacity - MM lbs	28.6	40.6	39.5	30.5	30.5
Excess	9.6	22.3	17.7	5.2	-
Internal Use	-	-	-	-	-
Sales	19.0	18.3	21.8	25.3	30.5

Profitability has shown an upward trend. The change relative gross profit, SARE and other income is the result of the sale of Lytron 680 to Union Carbide. Market outlet for current latex products include floor waxes, cup coatings, detergent opacifiers, and rubber stiffeners. Most of these are designed for retail sales levels and highly dependent on customer merchandising programs. New outlets for latices and the development of improved properties are being sought to insure continued growth.

LOW DENSITY P.E.
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$33.0	49.2	41.9	40.2	40.2
Internal Use	$ -	-	1.9	2.0	2.0
Total	$33.0	49.2	43.8	42.2	42.2
For Sales:					
% ROI (after tax)	2.3	1.0	(2.7)	(1.9)	(1.7)
Sales	$20.3	20.3	15.8	13.8	14.1
Gross Profit	$ 4.1	3.5	(.3)	(.1)	(.1)
SARE	$ 2.7	2.6	2.1	1.5	1.5
Other Income	$ .2	.1	-	.1	.1
Division Contribution	$ 1.6	1.0	(2.4)	(1.5)	(1.5)
As % of Sales:					
Division Contribution	8.0	4.9	(15.0)	(10.9)	(10.3)
Gross Profit	20.4	17.2	(1.8)	(1.0)	(.6)
SARE	13.3	12.8	13.2	10.7	10.6
$ Sales/$ Investment	.62	.41	.58	.34	.35
Selling Price/lb	$.227	.190	.144	.136	.136
Cost of Sales/lb	$.181	.157	.146	.137	.137
Capacity - MM lbs	108.0	110.0	114.4	109.1	109.1
Excess	18.6	3.0	.1	2.3	-
Internal Use	-	-	4.4	5.2	5.2
Sales	89.4	107.0	109.9	101.6	103.9

Sharp price declines were felt in 1961 and 1962. This factor combined with adverse sales pattern in 1963 (loss of wire and cable business because of production deficiency) put the product line well into a loss position. The budget for the year 1964 assumes further price declines and does not show any improvement over 1963.

Production costs have been reduced over the period reported but could not offset the price declines (additionally SARE expense will drop $600M in 1964). The basic current problem is that volume, technology and ethylene cost do not appear to offer more than a breakeven position (corporate level) in today's competitive market.

Greater cost improvements are foreseen by 1965 but it is anticipated that further price deterioration will hold operations at breakeven. Improvement in thru-put and on-stream time -- the current top priority manufacturing effort -- should yield increased volume up to 130MM lbs. per year by 1967.

LUSTRAN
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ 9.5	16.7	16.8	20.8	21.1
Internal Use	$ -	-	-	-	-
Total	$ 9.5	16.7	16.8	20.8	21.1
For Sales:					
$ ROI (after tax)	(12.4)	(7.9)	2.3	4.7	7.4
Sales	$ .5	4.1	8.1	12.7	14.5
Gross Profit	$(1.4)	(1.0)	1.9	3.8	5.1
SARE	$ 1.0	1.8	1.6	1.9	2.1
Other Income	$ -	.1	.1	.1	.1
Division Contribution	$(2.4)	(2.7)	.4	2.0	3.1
As % of Sales:					
Division Contribution	-	(66.9)	4.7	15.5	21.6
Gross Profit	-	(24.6)	23.9	29.8	35.1
SARE	-	44.1	20.3	15.4	14.4
$ Sales/$ Investment	.05	.25	.48	.61	.68
Selling Price/lb	$.390	.328	.290	.302	.305
Cost of Sales/lb	$1.53	.408	.220	.212	.198
Capacity - MM lbs	1.2	17.9	28.4	47.4	47.4
Excess	-	5.3	.5	5.4	-
Internal Use	-	-	-	-	-
Sales	1.2	12.6	27.9	42.0	47.4

The significant increase in Lustran Division Contribution in 1964 shows the effect of the first full year of operations of the new Lustran plant free of start-up expenses and operating at near capacity levels. Continuing profit improvement can be expected as we expand our market share with new second generation Lustran I products becoming available in mid-1964. This lower capital cost process further solidifies our position as the lowest cost producer, which will permit us to profitably expand total market demand in undeveloped markets through our leadership. Although new competition can be expected, the technical complexity and expense of establishing an ABS product line precludes the development of destructive competition to the extent that it exists in the Lustrex product line.

LUSTREX MM
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ 45.1	53.8	55.3	55.6	55.9
Internal Use	$ -	-	3.5	4.3	4.3
Total	$ 45.1	53.8	58.8	59.9	60.2
For Sales:					
% ROI (after tax)	3.2	3.6	3.5	2.8	3.3
Sales	$ 34.3	34.6	34.4	33.0	34.7
Gross Profit	$ 6.1	7.0	7.0	5.3	6.0
SARE	$ 3.8	3.8	3.5	2.9	3.0
Other Income	$ .7	.8	.5	.7	.7
Division Contribution	$ 3.0	4.0	4.0	3.1	3.7
As % of Sales:					
Division Contribution	8.7	11.7	11.6	9.5	10.7
Gross Profit	18.0	20.2	20.3	16.2	17.4
SARE	11.2	11.0	10.2	8.8	8.6
$ Sales/$ Investment	.76	.64	.62	.59	.58
Selling Price/lb	$ .197	.188	.159	.149	.149
Cost of Sales/lb	.162	.150	.127	.125	.123
Capacity - MM lbs	216.9	234.9	265.5	251.3	251.3
Excess	43.0	51.5	37.2	11.5	-
Internal Use	-	-	11.9	18.4	18.4
Sales	173.9	183.4	216.4	221.4	232.9

The level of return on investment reflects continued price attrition which has offset gains made in sales volumes and cost reduction. The decline in profitability in 1964 results from severe price decreases during the second half of 1963 and continuing into 1964. This attrition is expected to continue over the next two to three years as a result of competitive pressure to move new styrene monomer capacity to be activated during this period.

A significant increase in demand is expected to result from these lower prices, particularly from the packaging markets. Profit improvement will begin for those producers with sufficient capacity to supply the surge in demand which will occur by 1968. Pricing improvement will follow as supply and demand come into equilibrium.

We are and will continue to be one of the lowest cost producers by maintaining our current market share.

OPALON
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$30.5	30.7	32.4	34.9	34.9
Internal Use	$ -	-	-	-	-
Total	$30.5	30.7	32.4	34.9	34.9
For Sales:					
% ROI (after tax)	(3.1)	(.7)	(1.3)	.7	.7
Sales	$14.4	16.7	17.2	19.9	19.9
Gross Profit	$ .2	.6	.6	2.1	2.1
SARE	$ 2.3	1.8	1.8	1.8	1.8
Other Income	$ .1	.3	.3	.2	.2
Division Contribution	$(2.0)	(.9)	(.9)	.5	.5
As % of Sales:					
Division Contribution	(13.7)	(5.3)	(5.3)	2.6	2.6
Gross Profit	1.2	3.8	3.5	10.6	10.6
SARE	16.0	10.7	10.2	9.3	9.3
$ Sales/$ Investment	.47	.55	.53	.57	.57
Selling Price/lb	$.187	.171	.162	.172	.171
Cost of Sales/lb	$.185	.164	.156	.153	.153
Capacity - MM lbs	84.7	99.1	114.7	116.0	116.0
Excess	7.9	1.2	8.4	-	-
Internal Use	-	-	-	-	-
Sales	76.8	97.9	106.3	116.0	116.0

Despite continuing price declines during 1961, 1962 and 1963, together with Texas start-up problems in 1963, Opalon products show a steady trend toward better profits. Improved production yields in both polymers and copolymers plus increased sales volumes are largely responsible.

Although relatively poor profit performers, vinyl products could add about 4.2% of sales to division contribution by 1966. This will require the vigorous pursuit of plans for three of our newest products to achieve that result.

The Plastics Division has taken the lead in reversing downward price trends with several recently announced price increases.

PHENOPLASTS
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ 18.8	18.6	20.6	24.2	24.9
Internal Use	$ -	-	-	-	-
Total	$ 18.8	18.6	20.6	24.2	24.9
For Sales:					
% ROI (after tax)	5.8	4.6	4.4	5.8	8.3
Sales	$ 13.2	12.5	13.4	14.8	19.2
Gross Profit	$ 3.7	3.1	3.4	4.2	5.8
SARE	$ 1.5	1.5	1.6	1.5	1.8
Other Income	$ .1	.2	.1	.1	.1
Division Contribution	$ 2.3	1.8	1.9	2.8	4.1
As % of Sales:					
Division Contribution	17.3	14.3	13.9	18.9	21.5
Gross Profit	27.6	24.9	25.4	28.6	30.4
SARE	11.3	12.3	12.1	10.5	9.5
$ Sales/$ Investment	.70	.67	.65	.61	.77
Selling Price/lb	$ .143	.130	.116	.113	.111
Cost of Sales/lb	$ .104	.098	.087	.080	.077
Capacity - MM lbs	133.7	136.8	163.5	173.1	173.1
Excess	41.7	41.0	47.9	41.5	-
Internal Use	-	-	-	-	-
Sales	92.0	95.8	115.6	131.6	173.1

Phenoplast sales are made in several major markets including thermal insulation, industrial laminates, battery separators, and plywood adhesives. The products are supported by many years of research. Recent trend in the plywood industry to convert from natural glues to synthetic glues for interior glue lines has the potential of doubling the adhesive demand over the next five years. The thermal insulation market also continues to expand, and our 40% of the market includes a position as major supplier to Johns-Manville whose plants are located in the center of all domestic markets. Price attrition is expected to continue as the market price for phenol erodes. A basic cost position, coupled with a strong research and marketing effort, is forecast to overcome this problem area.

POLYELECTROLYTES
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ 2.3	2.3	2.8	3.0	3.2
Internal Use	$ -	-	-	-	-
Total	$ 2.3	2.3	2.8	3.0	3.2
For Sales:					
% ROI (after tax)	19.9	18.7	16.3	17.1	27.3
Sales	$ 3.0	2.5	2.8	3.5	4.6
Gross Profit	$ 1.4	1.3	1.4	1.4	2.2
SARE	$ .4	.4	.4	.4	.5
Other Income	$ -	-	-	-	-
Division Contribution	$ 1.0	.9	1.0	1.0	1.7
As % of Sales:					
Division Contribution	31.7	35.8	33.6	29.2	38.1
Gross Profit	45.7	52.5	47.8	41.8	49.0
SARE	14.2	17.1	14.6	12.5	10.9
$ Sales/$ Investment	1.31	1.09	1.01	1.17	1.44
Selling Price/lb	$.542	.512	.500	.483	.482
Cost of Sales/lb	$.294	.243	.261	.281	.246
Capacity - MM lbs	8.0	8.1	8.7	9.4	9.4
Excess	2.4	3.2	3.0	2.2	-
Internal Use	-	-	-	-	-
Sales	5.6	4.9	5.7	7.2	9.4

The major portion of polyelectrolyte sales are going to acetate sizing markets. Current research is directed toward developing improved products that will be suitable for replacement of starch as a cotton and cotton blend size. Commercialization is anticipated by the fourth quarter of this year. Until recently these products were unique to the division in that they are not price sensitive. This past year, however, competitors have found a way to circumvent our patent position and are becoming more active.

PROTEINS
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ 1.5	1.5	1.6	1.6	2.7
Internal Use	$ -	-	-	-	-
Total	$ 1.5	1.5	1.6	1.6	2.7
For Sales:					
% ROI (after tax)	2.9	1.3	(.8)	.1	14.8
Sales	$ 1.7	1.4	1.2	1.4	8.3
Gross Profit	$ .3	.2	.1	.1	1.4
SARE	$ .2	.1	.1	.1	.6
Other Income	$ -	-	-	-	-
Division Contribution	$ .1	.1	-	-	.8
As % of Sales:					
Division Contribution	5.0	2.8	(2.2)	.3	9.7
Gross Profit	15.5	13.7	4.6	8.1	16.4
SARE	10.5	10.9	10.1	7.8	6.7
$ Sales/$ Investment	1.18	.94	.78	.89	3.05
Selling Price/lb	$.116	.122	.121	.120	.120
Cost of Sales/lb	$.098	.105	.115	.110	.101
Capacity - MM lbs	95.6	97.4	97.4	69.1	69.1
Excess	80.6	86.1	87.4	57.3	-
Internal Use	-	-	-	-	-
Sales	15.0	11.3	10.0	11.8	69.1

The protein product line's sole outlet is adhesives for interior plywood glues and is not expected to survive the next two years. The plywood industry seems earnestly bent on converting to synthetic resins. Protein glues will be held in the product line until they are no longer incrementally profitable.

SAFLEX
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ 14.3	13.4	14.5	13.7	15.3
Internal Use	$ -	-	-	-	-
Total	$ 14.3	13.4	14.5	13.7	15.3
For Sales:					
% ROI (after tax)	18.7	21.5	15.8	15.2	28.7
Sales	$ 18.2	17.3	16.6	14.6	24.1
Gross Profit	$ 6.7	6.7	5.4	4.8	9.6
SARE	$ 1.1	.9	.9	.9	1.1
Other Income	$ -	.2	.3	.3	.3
Division Contribution	$ 5.6	6.0	4.8	4.2	8.8
As % of Sales:					
Division Contribution	30.8	34.6	28.7	28.5	36.3
Gross Profit	36.6	38.9	32.6	33.0	39.8
SARE	5.9	5.3	5.5	6.2	4.5
$ Sales/$ Investment	1.27	1.29	1.15	1.07	1.58
Selling Price/sq.ft.	$ .144	.151	.147	.143	.144
Cost of Sales/sq.ft.	$ .091	.092	.099	.096	.087
Capacity - MM sq.ft.	317.7	301.2	181.7	167.2	167.2
Excess	191.6	186.1	68.9	65.2	-
Internal Use	-	-	-	-	-
Sales	126.1	115.1	112.8	102.0	167.2

Saflex profitability is heavily dependent on the automotive industry. Although production of automobiles has increased in the period reviewed, a significant reduction in the quantity of plastic interlayer safety glass used per automobile has resulted in a lowering of sales volume and profitability in Saflex.

The drop in return on investment in 1963 is overstated due to revised basis of costing raw materials (Butvar resin) because of the acquisition of Shawinigan Resins and the changes in reusable scrap values.

Though not included in the 1964 budget, it is hoped that glass laminators will convert from 15 gauge plastic to 30 gauge high-impact plastic for windshields. When this might occur is not known but the change could result in an increase in profit by as much as $1.5MM.

ULTRON FILM
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ 8.4	7.6	8.6	9.2	9.5
Internal Use	$ -	-	-	-	-
Total	$ 8.4	7.6	8.6	9.2	9.5
For Sales:					
% ROI (after tax)	(.4)	(.4)	(.3)	(.9)	1.6
Sales	$ 5.1	5.0	5.7	6.1	7.7
Gross Profit	$ .4	.3	.3	.2	.7
SARE	$ .5	.4	.4	.4	.4
Other Income	$ -	-	-	-	-
Division Contribution	$ (.1)	(.1)	(.1)	(.2)	.3
As % of Sales:					
Division Contribution	(1.4)	(.9)	(1.0)	(2.9)	4.0
Gross Profit	8.3	6.4	5.3	3.3	9.6
SARE	9.7	8.1	6.4	6.2	5.7
$ Sales/$ Investment	.61	.65	.66	.65	.81
Selling Price/lb	$.386	.344	.306	.307	.307
Cost of Sales/lb	$.354	.322	.290	.297	.278
Capacity - MM lbs	17.0	14.5	23.2	25.0	25.0
Excess	3.8	-	4.5	5.3	-
Internal Use	-	-	-	-	-
Sales	13.2	14.5	18.7	19.7	25.0

Improved operating efficiency and higher sales volumes are offsetting declining selling prices and the effect of the Chocolate Bayou start-up. Raw material costs are continuing to rise also, although this condition is not reflected in selling prices. We foresee a firming of our markets but true price stability is not to be expected.

Two or three new film products have been successfully developed in our laboratories. These will be further improved and introduced as part of our profit improvement program. Our available technical resources have been devoted mainly to the development of these new products.

Divisions profitability has been ($MM's)

	Actual			1964
	1961	1962	1963	Budget
% Return on Investment AT	3.0	3.5	6.0	6.8
Gross Investment	28.7	30.1	33.0	36.0
Sales	21.7	22.7	25.0	26.4
Division Contribution BT	1.8	2.3	4.2	4.9
Div. Cont. as % of Sales	8.3	10.1	16.8	18.7
$ Sales/$ Investment	.76	.75	.76	.73

In 1963 investment in the divisions products earned the following rates of return:

	% of Total Investment
Loss	22.1
0 to 3%	19.7
3 to 5.8%	-0-
Over 5.8%	58.2

Major products reported are:

	Page
Butvar Product Group	119
Formvar Product Group	120
Gelva Emulsion	121
Gelvatol Product Group	122

These comprise 91% of the divisions investment in 1963.

BUTVAR PRODUCT GROUP
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$14.6	14.9	15.4	15.9	18.3
Internal Use	$ -	-	-	-	-
Total	$14.6	14.9	15.4	15.9	18.3
For Sales:					
$ ROI (after tax)	5.2	6.2	10.2	10.6	18.2
Sales	$ 9.0	9.3	10.6	10.5	17.6
Gross Profit	$ 2.3	2.7	4.0	4.1	7.5
SARE	$ .7	.8	.7	.7	.8
Other Income	$ -	-	-	-	-
Division Contribution	$ 1.6	1.9	3.3	3.4	6.7
As % of Sales:					
Division Contribution	17.6	20.7	31.0	31.8	37.9
Gross Profit	25.1	29.0	37.9	38.9	42.7
SARE	7.5	8.3	6.8	7.1	4.8
$ Sales/$ Investment	.62	.63	.69	.66	.96
Selling Price/lb - Butvar SG	$.811	.811	.806	.785	.785
Spec.Butvars	$1.02	1.00	1.01	1.01	1.01
Cost of Sales/lb - Butvar SG	$.581	.530	.485	.464	.414
Spec.Butvars	$.758	.771	.525	.509	.517
Capacity - MM lbs	18.2	16.0	14.4	18.6	18.6
Excess	9.0	6.2	3.4	7.4	-
Internal Use	-	-	-	-	-
Sales	9.2	9.8	11.0	11.2	18.6

Price of SG Butvar supplied to Saflex was reduced by three cents per pound on 10/1/63. This reduction reflects the sharp decline in price of vinyl acetate monomer - from 14 cents per pound at beginning of 1963 down to 12.5 cents per pound by year-end. With about 1-1/2 lbs of vinyl acetate used per pound of Butvar, the price of this raw material is an important factor.

Increased Mobel sales, high level of automobile activity, cost savings stemming from Trenton plant efficiencies - all these have combined to produce a very favorable trend in division contribution of this product group.

Introduction of HI Saflex in some of the 1965 model autos will materially raise sales quantities and will further improve profitability of this product.

FORMVAR PRODUCT GROUP
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ 3.0	3.2	3.8	4.2	4.8
Internal Use	$ -	-	-	-	-
Total	$ 3.0	3.2	3.8	4.2	4.8
For Sales:					
% ROI (after tax)	10.8	12.6	13.2	12.3	17.7
Sales	$ 3.7	4.1	4.0	3.9	5.3
Gross Profit	$ 1.2	1.4	1.4	1.4	2.1
SARE	$ .5	.6	.4	.4	.4
Other Income	$ -	-		-	
Division Contribution	$ .7	.8	1.0	1.0	1.7
As % of Sales:					
Division Contribution	18.0	20.3	25.8	26.5	32.2
Gross Profit	31.0	34.4	35.3	36.2	40.5
SARE	12.9	14.1	9.5	9.7	8.3
$ Sales/$ Investment	1.24	1.29	1.07	.93	1.10
Selling Price/lb (1)	$.830	.816	.829	.819	.819
Cost of Sales/lb (1)	$.557	.518	.516	.502	.465
Capacity - MM lbs	6.0	6.3	6.0	6.0	6.0
Excess	1.8	1.6	1.5	1.6	-
Internal Use	-	-	-	-	-
Sales	4.2	4.7	4.5	4.4	6.0

(1) Average of Product Group excluding By-Products.

Strong acceleration of export sales of this product group has more than offset the decline in domestic use of Formvars. The product is a mature one and, undeniably, a profitable one.

Again, the decline in price of vinyl acetate monomer (discussed in Butvar Product Group) is an important consideration in the rise in division contribution of this product group. For each pound of Formvar produced, about 1.7 pounds of vinyl acetate monomer are used.

Capital appropriation requests, presently under consideration, are expected to reduce Formvar costs by about three cents per pound. These projects involve: (1) centralized control of Formvar operations and (2) sifting and packing of Formvars.

Continued research efforts in the electrical insulation field are designed to broaden the market for this product in the future.

GELVA EMULSION
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ 2.3	2.8	3.5	3.6	3.6
Internal Use	$ .1	.1	.2	.3	.5
Total	$ 2.4	2.9	3.7	3.9	4.1
For Sales:					
% ROI (after tax)	(3.2)	-	.3	2.9	6.0
Sales	$ 3.1	3.7	4.1	4.7	5.3
Gross Profit	$ .4	.6	.7	.9	1.2
SARE	$ .6	.7	.8	.8	.8
Other Income	$ .1	.1	.1	.1	-
Division Contribution	$ (.1)	-	-	.2	.4
As % of Sales:					
Division Contribution	(4.9)	.1	.6	4.3	8.2
Gross Profit	13.4	16.8	17.6	19.7	22.5
SARE	20.0	17.8	18.7	16.4	15.2
$ Sales/$ Investment	1.34	1.31	1.18	1.32	1.46
Selling Price/lb	$.172	.173	.174	.169	.169
Cost of Sales/lb	$.149	.144	.143	.136	.131
Capacity - MM lbs	23.4	25.2	28.5	36.0	36.0
Excess	4.3	2.8	3.4	5.4	-
Internal Use	1.0	.9	1.4	2.6	4.5
Sales	18.1	21.5	23.7	28.0	31.5

New types of Emulsion (for example, Latex 925, for paper industry use) have made an important contribution to an improved sales mix for this product group. Thus, while some grades of Emulsion have suffered price attrition, the large representation of new and higher-priced types in the sales mix has maintained a relatively stable selling price over the years.

Unit cost of sales shows a gradual downward trend, principally resultant from the decline in price of vinyl acetate, of which about one-half pound is used per pound of Emulsion produced. Although volume of sales shows a spectacular jump of 55% between 1961 and 1964, departmental fixed or "period" costs have risen only moderately.

The 10% reduction in SARE personnel, effected in 1963, has enabled this product group as well as those in the other three schedules, to show an improved % to sales relationship.

Low division contribution of this product, shown above, should not be construed as an indication of absence of profitability per se, for the Hydrocarbon Division receives a profit on its sale of vinyl acetate to Shawinigan, a profit which significantly tempers this low contribution. This same consideration must be applied to the other product groups.

Continued research effort is expected to provide improvement in division contribution of this product group. Our long-range plans include a number of additional capacity increases, and possibly a second site of operations in another area.

GELVATOL PRODUCT GROUP
($ in Millions)

	Actual			1964	
	1961	1962	1963	Budget	Cap'ty
Gross Invest. - Sales	$ 6.3	6.7	7.3	7.6	8.3
Internal Use	$ .4	.6	.7	.5	.6
Total	$ 6.7	7.3	8.0	8.1	8.9
For Sales:					
% ROI (after tax)	(1.5)	(4.3)	(1.0)	1.7	5.7
Sales	$ 3.9	3.4	3.9	4.5	6.1
Gross Profit	$ .4	-	.5	1.0	1.7
SARE	$ .6	.6	.6	.7	.7
Other Income	$ -	-	-	-	-
Division Contribution	$ (.2)	(.6)	(.1)	.3	1.0
As % of Sales:					
Division Contribution	(5.0)	(17.9)	(3.7)	5.7	15.5
Gross Profit	10.6	.8	13.5	20.8	28.2
SARE	15.6	18.7	17.2	15.0	12.7
$ Sales/$ Investment	.63	.50	.54	.60	.73
Selling Price/lb (1)	$.628	.626	.632	.617	.617
Cost of Sales/lb (1)	$.555	.624	.542	.478	.427
Capacity - MM lbs	6.0	9.6	9.6	9.6	9.6
Excess	-	4.3	3.4	2.5	-
Internal Use	.4	.4	.4	.5	.6
Sales	5.6	4.9	5.8	6.6	9.0

(1) Average of Product Group excluding By-Products.

Price reductions have been made for certain grades of this product, but increased sales volume of many of the higher-priced types has held average selling price to a relatively uniform level.

The greatest single contribution to the impressive downward trend of unit cost of sales is, of course, the introduction of methyl acetate hydrolysis, estimated to reduce unit cost of production by about four cents per pound. Other important factors:

1) A sizable improvement in yield on vinyl acetate monomer, from 92.6% in 1961 to 96.5% in 1964. During this period, vinyl usage has dropped from 1.94 down to about 1.87 pounds of monomer per pound of Gelvatol.
2) Rate of single-line output has increased from 500M to 700M pounds per month between 1961 and 1964.
3) Prices of raw material associated with this product have declined substantially, particularly vinyl acetate - from 15.6¢ at 1/1/61 to 12.5¢ at 12/31/63.

Division contribution will be converted from $.1MM loss in 1963 to $.3MM profit in 1964. Yield on vinyl acetate, as a result of further cost-reduction projects should reach 97-97.5%.

GERING

PACKAGING

At the time this report is published, historical information for individual products for Gering and Packaging (Plax) is not readily available.

The record for their total operation follows. The period covered is that since acquisition of these companies ($ millions):

	Actual		1964
	1962	1963	Budget
GERING			
% ROI (after tax)	2.4	3.0	3.7
Gross Investment	20.4	23.9	26.1
Sales	22.3	23.8	25.5
Div. Contribution (before tax)	1.0	1.5	1.9
PACKAGING			
% ROI (after tax)	-	(.2)	1.3
Gross Investment	-	50.3	51.8
Sales	-	42.0	46.6
Div. Contribution (before tax)	-	(.2)	1.4

D633529

Other Chemicals
LRP Pesticides - Maryland
Agenda 30

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