PLAINTIFF'S EXHIBIT

GP-761

PRODUCT DEVELOPMENT & TECHNICAL SERVICES

SIX MONTH REPORT

July through December 1972

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SIX MONTH SUMMARY

This report covers the activities of the Product Development and Technical Service Department during the past six months. Our identification has been changed to be more appropriate since we absorbed some of the functions of the old Technical Service Department. The report is divided into five sections describing each activity; i.e., product development, manufacturing services, marketing services, industry representation, and patents & licensing.

Our investment in product development and technical service in 1972 was $303,762. The distribution of expenses is shown on page 3. New products developed during the past five years added nearly $3 million to sales and nearly $0.75 million to the division profits in 1972. The figures for the last six months are shown on page 2. A recent project which is beginning to pay off is the revamping of our texture line. Comparing 1972 with 1971, texture sales were up 16% and profits up 660%. A less expensive binder for joint system at Acme was thoroughly tested, proven and adopted late last year. Projected savings are $33,000 annually.

There are more cost savings investigations in the works for next year. A Ready Mix formula currently being field tested has a potential annual savings of $130,000. A water repellent size for wallboard paper was initiated in Tigard and is in the preliminary stages of plant evaluation. The potential advantages for this paper bond liner treatment are reduced starch usage, increased machine speed, improved quality. The savings should be enormous. Two continuing projects in joint system are (1) the search for a casein replacement, and (2) the elimination of asbestos fiber. We had a bad experience with our first effort to find a substitute for casein, so we are looking at some other possibilities. We are making progress toward the elimination of asbestos from all the joint system and texture formulas, but it is a tedious process.

A few investigations, such as development of drywall and panel adhesive, will be phased out. The Firedoor project was revived when one of our Manufacturing people came up with a new idea. We are searching for a way to use molding plaster in products where Denscal or Densite are now required. Our Firestop licensing program will be reassessed since our basic patent expires in May of 1973. Fire and sound testing expenses will be diminished if we can persuade the Gypsum Association to do more testing.

SIX MONTH ANALYSIS OF SALES AND PROFITS FROM NEW PRODUCTS

UNIT	PRODUCT	Sales Volume	List Sales Amount	Gross Profit Amount
MSF	Radiant Heat Panels (All)	38	$ 14,617	$(9)
MSF	1/4" Sound Deadening Board	4,171	150,986	42,548
MSF	Pre-Dec Wallboard (All)	23,411	1,409,342	335,654
Tubes	Drywall Adhesive (Akron)	41,616	22,531	(494)
MSF	Shaft Liner Panels	34	7,105	2,464
MLF	Metal T Splines	38	6,502	1,537
MLF	Metal L Runners & J Channels	19	1,767	904
Tons	Ram Process Plaster	55	5,453	2,999
Bags	Polystyrene Texture	1,612	4,602	455
Bags	SRA Bedding Compound	17,048	30,205	7,652
Bags	SRA Topping Compound	84,133	138,555	42,634
			$1,791,665	$ 436,344

1972 ANALYSIS OF SALES AND PROFITS FROM NEW PRODUCTS

UNIT	PRODUCT	Sales Volume	List Sales Amount	Gross Profit Amount
MSF	Radiant Heat Panels	82	$ 32,062	$(602)
MSF	1/4" Sound Deadening Board	7,652	280,226	78,544
MSF	Pre-Dec Wallboard (All)	40,962	2,387,916	581,491
Tubes	Drywall Adhesive	48,492	26,545	(591)
MSF	Shaft Liner Panels	51	10,514	3,550
MLF	Metal T Splines	38	6,502	1,537
MLF	Metal L Runners & J Channels	19	1,767	904
Tons	Ram Process Plaster	98	9,529	4,919
Bags	SRA Bedding	17,048	30,205	7,652
Bags	SRA Topping	84,133	138,555	42,634
			$2,923,821	$ 720,038

PRODUCT DEVELOPMENT

1. Drywall and Panel Adhesive

During the past six months, the Akron plant sold 40,000 tubes of drywall adhesive. An additional 45,000 tubes of drywall adhesive and 13,000 tubes of panel adhesive were sold by Tigard. Repeat orders of both products indicate that we had satisfactory market acceptance. It has been decided, however, that we will not manufacture adhesives and the project will be abandoned. We will sell the remaining adhesive in Tigard and Akron will manufacture a little more adhesive in order to deplete their supply of raw materials.

2. Non-Rosette Pre-Dec

Two possibilities for installing Pre-Dec without rosettes were developed and presented for consideration. One method involved a reverse foil back Pre-Dec with the foil serving as the vapor barrier. The other method consisted of using gypsum strips over the conventional polyethylene vapor barrier and laminating the Pre-Dec to the strips. These systems were judged to be too expensive by marketing and it was decided to discontinue this project.

3. Textures

Over a year ago, we set out to develop a new family of textures which would be more acceptable and more economical. The increase in the price of casein resulted in sharply diminished profits for our entire line of textures. Another objective was added when asbestos, an ingredient in our textures, was classified as a hazardous material.

We responded by developing new formulas without asbestos for all of the ceiling textures. A new product with polystyrene aggregate still contains a small amount of asbestos. The non-aggregated wall texture has presented a major problem because it must be so versatile. Several unsuccessful field trials of wall texture have been held. Very shortly another formula will be field tested which we expect to be successful. If so, it will bring this project very close to completion and we would expect to see dramatic increases in our texture sales and profits for 1973.

4. Joint System Formulations

For a number of years, our efforts centered around using fine gypsum instead of limestone as the filler at Acme. In the past six months, we have been more concerned with the high cost of casein at the other

plants and with the new safety standards relating to the use of asbestos fiber. With this in mind, our emphasis on joint system formulations has been as follows:

a) Casein Replacement--We developed formulas containing a polyacrylamide adhesive supplied by Dow Chemical Company. The products were called SRA (synthetic resin adhesive) and initial field tests and market results were favorable. However, these products encourage the use of more water than is desirable, which results in high shrinkage and indequate bonding. This was complicated by other factors causing serious field problems. It is questionable whether a satisfactory formula can be made using the Dow adhesive. In any event, most of our present efforts are being generated to handle the problems created by the SRA joint compounds.

b) Asbestos Replacement--A new All Purpose formula without asbestos is being field tested in the market serviced by Acme. An additional advantage is that the elimination of the asbestos has lowered the adhesive requirement resulting in a substantial lowering of the raw material costs. The reports from our field tests have all been favorable, so the scope of the field evaluation is gradually being increased.

At the same time, we are investigating the possibilities for eliminating asbestos in Ready Mix. This work has not progressed as far as the elimination of asbestos in the dry joint system and texture products.

c) Ready Mix Formulas--Two major Ready Mix investigations are underway. The first is the evaluation of a new thickener which would save at least $130,000 annually if it proves to be satisfactory. The second is a request from sales to impart easier sanding characteristics to Acme's Ready Mix. Trials of the new thickener are scheduled in the areas serviced by Chicago and Marietta. The sanding problem at Acme will necessitate some major changes, but it is receiving prompt attention because it is inhibiting the sale of Acme's Ready Mix.

d) Speed Set--An investigation is underway to improve the setting time characteristics of our Speed Set. The objective is to shorten the time between the initial stiffening and the final set. This will provide more working time to the user, and therefore, make the product more acceptable. The market for setting type joint compounds is increasing rapidly, and we are probable not getting our share of this business. In addition to the formula improvements, Manufacturing is considering whether to make Speed Set available at Blue Rapids in order to improve the cost and distribution.

MANUFACTURING SERVICES SECTION

Additional trials of longer duration will be conducted at Akron and Grand Rapids so a better assessment of the advantages should be possible after those runs. The anticipated advantages, in addition to reduced starch usage, are increases in machine speed and improvement in operation efficiency.

2. By-Product Gypsum

DuPont Company has sent us some small samples of by-product gypsum they will have in their Richmond, Virginia, plant which will go on-stream in 1976. This is a long time off, but DuPont wants to try to find some use for the gypsum to overcome the problem they will have in disposing of it. From the samples tested, we have determined that the by-product gypsum will be high in purity, very white, and free of contaminants. We are continuing to keep abreast of waste gypsum in the event that one comes along which is economical to use.

3. Pre-Dec

Manufacturing requested our assistance in planning an early start-up for the Fort Dodge Pre-Dec operation. We also prepared and distributed a complete quality control procedure for Pre-Dec which will help prevent future problems if it is followed.

4. Joint System

We have provided assistance in planning and ordering of equipment for the Milford Ready Mix plant. Mr. C. B. Hilton was recruited and trained here and will become the quality control supervisor at Milford.

5. Gypsum Analyses

We have reduced the analysis procedure to those deposits where the purity is marginal or where the plant specifically requests that an analysis be made. Some plants have had to increase their calcining capacity to keep up with the wallboard requirements. We suggested that kettle samples be submitted in these cases to be sure the stucco was not over or under calcined. We formerly hired a part time analytical chemist to conduct the analyses two or three days each week. We now analyze only one day each week. Instead of hiring a part time analyst, Mrs. Elaine Zulauf was trained to handle this in addition to her secretarial responsibilities.