

PRATT & LAMBERT-INC.

TECHNICAL ACTIVITIES

1952

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In 1952, the laboratory achieved an exceptionally fine record, particularly in the trade sales field, where more new finishes were launched than in any previous year.

Our technical group is a well-coordinated team, the skill of which has been ripening as the individual members have worked together over a period of years. The teamwork that exists today is an invaluable asset to the company; it could not be bought and it could not be developed in a month, or a year, or even in five years.

Our company's problems and products have undergone considerable change in the past twenty five years and it is interesting to note how these changes have affected laboratory operations.

In 1927, our price list comprised of 110 items, a third of which were varnishes. There were no house paints, no alkyds, and no rubber base finishes, but our list did contain a full line of brushing lacquer. In 1952, our price list contained 412 items, but only 8% of the items were varnishes. Forty per cent of our 1952 listed items were alkyds. The few products in our 1927 list, that are still being sold today, are made on much improved formulas.

In 1927, the net production of our Buffalo and Fort Erie factories totaled 2.4 million gallons. In 1952, these two factories produced 3.2 million gallons, while subsidiary companies produced another million gallons of listed items, bringing our total production in excess of 4.2 million gallons.

Four times as many listed items are now being produced on more complicated formulas in 70% greater volume than in 1927 with a smaller rather than larger laboratory staff. In 1952, 61 persons were employed in laboratory work at Buffalo; in 1927, 65 persons were employed in the Buffalo laboratory. In 1927, lacquer was in its heyday, and 13-1/2 laboratory employees were engaged in lacquer development. Today, 2-1/2 employees handle the same activity, but an additional 18 employees are now required to handle the development of industrial finishes that were not even dreamed of in 1927. Trade sales work requires the same number of laboratory workers (19) that it did in 1927, but twenty five years ago all effort was concentrated on oil base finishes. Today, the effort is distributed among oil base, alkyd, rubber base, and latex finishes. In 1952, the laboratory received 1580 sales problems to work on; in 1927, it received only 887 such problems.

Control testing has become more efficient with the passage of time. In 1952, 14-1/2 laboratory employees were engaged in quality control work (13-1/2 persons at Buffalo, one at Fort Erie). In 1927, 19-1/2 laboratory employees were required to handle control work involving Buffalo and Fort Erie production.

Laboratory work, while conducted with seemingly greater efficiency and less help in 1952 than in 1927, cost more money. In 1952, the laboratory cost \$268,000; in 1927, it cost \$122,184. The cost per employee was \$4400 in 1952 as compared with \$1875 in 1927.

GENERAL RESEARCH

New raw materials provide the richest source for research ideas. However, to screen a little pay dirt from the steady stream of samples, brochures, magazine articles, and calls by raw material representatives entails an enormous investment in time and money. In 1952, we examined 444 new raw materials at a cost of \$19,922. Only one out of each eight samples proved to be of real interest. There is no formula for determining in advance what materials will be of interest, hence the screening process is inefficient. Few claims made for new materials can be verified under our own laboratory or production conditions.

Much of the time of our General Research Laboratory is spent in developing alkyd resins. The effectiveness of this group will be materially increased by the new alkyd pilot plant that was installed in 1952 at a cost of \$12,000. The pilot plant, as furnished, had a built-in electrical thermometer that failed to extend far enough into the kettle. The kettle is at last in service after having been idle for three months while the thermometer was rebuilt.

In 1952, the factory became enthusiastic about the possibilities of a universal grinding liquid from which a single line of stock pastes could be made for all tinting purposes. At the time the project was first discussed, the factory carried six lines of pastes (one lacquer, two alkyd, two varnish, and one oil). After spending \$2233 on laboratory work, it became evident that no truly universal grinding liquid existed, but we were able to discontinue one line of pastes. Now we have to add a new line of "odorless" pastes for The New Lyt-all Flowing Flat, so the net result remains unchanged. The only way in which fewer pastes can be stocked is to grind batches direct from pigment instead of making them from preground (stock) pastes. Direct grinding of batches would cause serious delays.

Beginning last year, we undertook an extensive modernization program at our paint fence in Swormville. Steel framing will replace wood and prefabricated-prepainted panels (2 by 3 ft.) will replace the continuous fences used in the past. The first phase of the program was completed last year at a cost of \$830; the entire project should be completed by 1955. Paint fence activities, exclusive of construction, cost \$4744 in 1952. This includes the production and application of experimental paints as well as the cost of periodic inspections.

In 1952, we "ran" our last batch of Congo resin--an operation that was once a daily occurrence. Only two varnish formulas still

called for run Congo in 1952 and these have now been revised. Gum "running" is now history.

TRADE SALES DEVELOPMENTS

Of all the new architectural finishes developed in 1952, the following are probably most significant:

Alkatite Cement & Stucco Paint - Culminates about 18 years of experimental work on rubber and synthetic rubber base masonry paints. During this period, it is estimated that we spent \$15,000 in experimental work. In 1952, the final act--perfecting the newly adopted colors--cost \$739.

The New Lyt-all Flowing Flat - Also represents the end product of years of experimental work. Since January 1, 1951, we have spent \$10,877 in perfecting an alkyd flat wall coating. About half this amount was spent in 1952.

"61" Enamel Undercoating - Was given better stay-put qualities and was improved in drying, hiding and leveling in 1952. This development cost \$1403 in laboratory work.

Interior Trim Primer - Was also improved in stay-put qualities and hiding at a laboratory cost of \$394.

"61" Floor & Porch Enamel - Was brought out in an alkyd formula that had been under study for more than ten years. The superiority of the alkyd vehicle had long been recognized but the economic situation had always favored an oil base vehicle. Due to a reversal in the alkyd-oil base cost relationship, the alkyd formula actually saved us \$2400 in 1952. Perfecting the final formulas cost \$731, but thousands of dollars had been spent on the basic development work in previous years.

House Paint - 300 Outside White was improved in gloss and leveling at a cost of \$310. An additional \$1526 was spent on a similar improvement in house paint tints. While the white and colors have better gloss and leveling than they had in 1952, the sales organization is not completely satisfied with existing formulas and work is being continued.

Seven new house paint colors have been developed at a cost of \$489.

Vapex Wall Colors - In 14 colors and white were perfected during 1952 at a cost of \$3978. Preliminary work in 1950 and 1951 cost another \$2768. This \$6746 expenditure seems to have been completely wasted in view of our present disinterest in latex paint.

Miscellaneous Lyt-all Finishes - Were also developed in what appears to have been a lost cause. A special Lyt-all Mixing Liquid was formulated for purposes of glossing-up Lyt-all Spectrum Colors to an eggshell sheen but was rejected for obvious sales reasons.

A new eggshell white, a new undercoating, and a new spraying white were also developed and were rejected because our sales viewpoint had changed since initial work was undertaken by the laboratory. These four developments represented an investment of \$1028.

Vitralite Gloss White - Was made on an "odorless" basis. Vitralite Eggshell White and Colors are undergoing similar changes.

Improvement in Color Stability of Cellu-Tone Lenox Green and Carmel Blue and of Empire Green in all lines was effected in 1952 at a laboratory cost of \$1028.

The company was able to save \$36,100 in 1952 as a result of a number of formula revisions. About a quarter of the saving resulted from our inability to buy Johns-Manville Super Floss during the protracted strike at that company's California plant. The strike forced us to substitute a different extender in Solidex in order to maintain production. The substitute extender had a lower cost and a somewhat poorer color. Since customers failed to detect the color difference, we have continued to manufacture Solidex with the substitute material. Most of the other savings resulted from the substitution of our own alkyds for purchased resins.

Transportation finishes continue to absorb considerable laboratory time. \$924 went into research and another \$2351 went into work on specific sales problems.

During 1952, forty eight competing trade sales products were examined at a cost of \$927.

INDUSTRIAL SALES DEVELOPMENTS

Wrinkle finishes represent about 12% of our industrial production. Our activities in this field are summarized in the following table:

	<u>1952</u>	<u>1951</u>
Gallons Produced For:		
Royal Typewriter Co.	58,000	51,000
International Business Machines	26,900	21,000
All other accounts	<u>34,300</u>	<u>49,900</u>
Total	119,200	121,900
Cost of Laboratory Work:		
Royal Typewriter Co. projects	\$ 878	\$ 309
I.B.M. projects	1154	403
Other work for specific accounts	1402	2029
Research	<u>2593</u>	<u>709</u>
Total	\$6027	\$3450

Both of the above key accounts consumed more wrinkle finish in 1952 than in 1951, but other wrinkle finish accounts consumed less. Increased volume is not to be frowned at, but the concentration of business in two accounts puts us in a vulnerable position if either account is lost.

Royal Typewriter Co. consumed 17,000 gallons of primer in 1952 in addition to wrinkle finishes. Work on the primer and other non-wrinkle coatings represented another \$565 of laboratory work. International Business Machines consumed 15,600 gallons of primer in 1952, laboratory work on which cost \$867.

Prior to 1949, both Royal and International Business Machines turned out black office machines only. Little, if any, black is now used. One third of Royal wrinkle is now gray; the other two thirds is brown. International Business Machines is now primarily interested in gray wrinkle, but is considering two-tone machines for the future.

The major wrinkle finish problem at present is to develop a vinyl wrinkle for International Business Machines. The great increase in research expense is a reflection of this effort. International Business Machines probably does not care whether it has a vinyl finish or some other coating type, just so long as it obtains the superior wear and perspiration resistance that is characteristic of vinyl coatings. International Business Machines has even considered the application of vinyl sheeting over metal in order to attain the desired features. Vinyl resin does not wrinkle and neither does any other highly resistant resin now available. We have, therefore, tried to combine vinyl resin with various wrinkling media to obtain what is desired. We have also attempted to react vinyl resin with tung oil in an autoclave. The reaction was successful, but the film was soft. This work was carried on by Dr. Woodburn at the University of Buffalo. Nothing so far developed has good wrinkling properties as well as good wear and chemical resistance. No other paint company is commercially producing a vinyl wrinkle, although Interchemical Corp. has supplied pilot plant samples of an alleged vinyl wrinkle to a few accounts. The fact that Interchemical Corp. has had such a product in the pilot plant stage for two years and has not produced it in commercial quantities indicates that the finish cannot be produced economically or that it has "bugs".

While working on a vinyl wrinkle, we did develop a textured vinyl coating that aroused the interest of International Business Machines, but that interest has now subsided.

If a vinyl wrinkle can be produced commercially, it will probably lack the foolproof application characteristics of present wrinkle finishes.

The metal decorating industry offers the following picture:

	<u>1952</u>	<u>1951</u>
Gallons Produced For:		
American Can Co. (U. S. only)	61,400	53,800
Brooklyn Metal Decorating Co.	28,500	28,900
Hazel Atlas Glass Co.	10,000	10,000
National Can Co.	3,200	3,400
Fein Tin Can Co.	<u>2,700</u>	<u>-</u>
Total U. S. Production	105,800	96,100
Total Canadian Production	25,000	32,400
Cost of Laboratory Work		
American Can Co. projects	\$ 559	\$ 628
Brooklyn Metal Dec. Co. projects	104	675
Hazel Atlas Glass Co. projects	72	-
Anchor Cap projects	486	-
Other specific sales projects	309	1639
Research	<u>1265</u>	<u>168</u>
Total	\$2795	\$3110

Approximately 75% of our metal decorating gallonage is comprised of varnish and 25% of enamel, mostly white. Half of our entire gallonage in the decorating field is made up of Aluminum Mixing Varnish #5734 which goes to a single account, the American Can Co.

Our position in the collapsible tube field has continued its downward trend:

	<u>1952</u>	<u>1951</u>
Gallons Produced For:		
Wheeling Stamping Co.	1,880	6,580
Peerless Tube Co.	2,835	1,300
National Tube Co.	1,370	975
Standard Specialty & Tube Co.	none	900
J. S. Turner White Metal Co.	280	200
Other U. S. accounts	<u>520</u>	<u>1,025</u>
Total	6,885	10,980
Modern Containers, Ltd. (Sole Canadian account)	1,180	1,120
Cost of Laboratory Work:		
Wheeling Stamping Co. projects	\$ 264	\$ 532
Peerless Tube Co. projects	366	406
J. S. Turner White Metal Co.	333	Not segregated
Other specific sales accounts	<u>256</u>	<u>562</u>
Total	\$1219	\$1500

The loss of business at Wheeling Stamping Co. was largely due to the failure of our vinyl coatings to work satisfactorily in

production, although they had been previously approved by Wheeling's biggest customer, Lever Bros. By the end of the year, five of our vinyl tube coatings were approved for production by Wheeling and also by two of their customers, Lever Bros. and Colgate-Palmolive-Peet. A substantial increase in Wheeling business is anticipated for 1953.

The one bright aspect of our 1952 tube coating business was the greatly increased consumption of our products by Peerless Tube Co. The increase represents business that formerly went to competition. Peerless is currently purchasing oleoresinous coatings, but is evidencing interest in vinyl finishes.

We produced only 750 gallons of vinyl tube coatings in 1952. This amounted to less than 10% of our total tube coating business.

Military specification work cost \$5383 in laboratory effort during 1952. In spite of the large amount of work poured into the development of new finishes to meet military specifications, very little volume business resulted in 1952. Mr. Johnston has reached the conclusion that we have little opportunity to obtain large volume direct government business.

We are selling considerable material to accounts having government contracts. These include Grumman Aircraft, Twin Coach, Bell Aircraft, Mercury Aircraft, Pratt & Whitney, Federal Enterprises, Wright Aeronautical, and Sperry Gyroscope.

Grumman Aircraft is our largest outlet for Navy Zinc Chromate Primer. During 1952, we produced 18,750 gallons of primer meeting Specification MIL-P-6889A, Type I, without a single Navy rejection. This is a record; Navy rejections have been the bane of our existence for the past fourteen years. Laboratory work on zinc chromate primer cost \$829 in 1952; it cost \$4599 in 1951.

Pratt & Whitney is another large consumer of aircraft finishes. This account purchased 19,300 gallons of enamel in 1952. We have just obtained approval on a new heat-resistant, oil-resistant, jet engine finish (based on silicone resin) and this may swell our volume in 1953.

Naval aircraft business is complicated by the need for supplying AN inspection forms with each shipment. The preparation of these forms cost \$1646 in laboratory effort in 1952. It required about 200 hours of typing time, or the equivalent of one stenographer's time for five work weeks, to complete the forms. We prepared 60% more forms in 1952 than in 1951.

Heintz Mfg. Co. is continuing to buy large quantities of baking finishes for use on Philco and RCA television cabinets. The combined purchases of all items amounted to about 23,500 gallons in 1952. This included 9,000 gallons of a satin varnish, 4,600 gallons of a mahogany undercoating, 3,200 gallons of a tan undercoating, as well as numerous other smaller volume items. Laboratory work on Heintz problems cost \$870 in 1952.

Masell purchased 16,350 gallons of green and gray baking enamels for use on filing cabinets in 1952. This is a substantial increase over the 10,700 gallons purchased in 1951. Laboratory work on Masell problems cost \$538 in 1952.

Fedders-Quigan purchases amounted to about 50,000 gallons in 1952 or 15% less than in 1951. The drop-off was due primarily to loss of business on a brown primer because our price was too high. We have now developed a lower cost primer with which we hope to regain this business. ✓

In 1952, we produced 11,100 gallons of various fabric coatings, most of which went to Haartz-Mason, Duro-Gloss and Buffalo Weaving & Belting Co. The same volume was made and sold in 1951. Laboratory work on fabric projects in 1952 added up to the substantial figure shown below:

Haartz-Mason projects	\$ 825
Aldan Rubber Co. projects	176
Buffalo Weaving & Belting Co. projects	104
All other specific sales projects	39
Research	<u>1215</u>
	\$2359

Based on the above figures, every gallon of fabric coating sold in 1952 represented a laboratory development cost of 21.4 cents. This is five times the average development cost of our finishes.

Most of the research work on fabric coatings was directed toward vinyl compositions.

Production of coatings for paper totaled 8000 gallons in 1952. Of this, 3000 gallons represented clear lacquer sold to F. N. Burt Co. for decorating paper packages for cosmetics and toilet preparations. The remaining 5000 gallons represented a very resistant varnish sold to General Felt for coating paper liners used in jar covers. Laboratory work on F. N. Burt projects cost \$417 in 1952; work on General Felt projects cost \$954.

The Carborundum Co. also coats paper with varnish, but in this case the varnish serves as an adhesive rather than as a decorative or protective coating. We shipped 35,000 gallons of sandpaper adhesives to the Carborundum Co. in 1952, or about 20% less than we did in 1951.

Laboratory work on Carborundum projects cost \$1467 or about 40% more than it did in 1951. Our major long range project is to develop a resin adhesive that can replace glue. The importance of this project can be appreciated when it is realized that glue is the adhesive used on 80% of all coated abrasive papers. In the past, our market has been confined to the 20% segment that utilized higher priced and more serviceable adhesives.

The Carborundum Co. is experimenting with our adhesives on a new type of cloth sanding disc designed for rotary sanding machines used in the automotive industry for sanding undercoats. The backing is not the closely woven fabric used in the past, but a rayon mesh. The "open" structure provides twice the sanding efficiency of conventional cloth discs.

One Carborundum Co. project on which we spent considerable time collapsed unexpectedly toward the end of the year. Early in 1952, Behr-Manning, in conjunction with the duPont Co., announced a new "No-Fil" sandpaper designed especially for use on duPont "Tufcote", a new and extremely tough lacquer sealer. Heretofore, the furniture industry has used easy sanding lacquer sealers containing high amounts of aluminum or zinc stearates. These sealers sand easily but quickly clog sandpaper and they cause the finished furniture to mar white, when it is scratched. Good sealers have been tough sanding and were, therefore, unpopular with the furniture industry. The Behr-Manning-duPont development was based on incorporating zinc and ammonium stearates in the sandpaper adhesive rather than in the sealer, thus enabling furniture manufacturers to sand a really tough sealer. The development caused consternation at the Carborundum Co. and we were asked to work intensively on a whole series of new adhesives containing stearates. Both our work and that of the Carborundum Co. was successfully completed when the competitive "No-Fil" sandpaper received a black eye in the furniture industry. Residual stearates left in the finish by the sandpaper caused the furniture to bloom after it reached the market. The duPont Co. is said to have withdrawn its sealer and the market for "No-Fil" has vanished.

We are particularly active in promoting our finishes with manufacturers of electrical equipment and appliances. We have 21 accounts in this category and they include most of the big producers. Laboratory work on finishes for appliances amounted to a total of \$9369 in 1952.

One of the ever-recurring problems in the appliance industry is to obtain a coating that will adhere to molded polystyrene plastic parts. In 1952, we spent \$950 trying to solve this problem but had only mediocre success.

Another industry, in which we have a large number of accounts is the metal fixture and furniture industry. Laboratory work on finishes for this industry totaled \$3592 in 1952. Our efforts in the wood furniture industry have declined to a low ebb; we spent less than \$500 in developing wood furniture finishes in 1952.

Eighty six of our industrial accounts absorbed 90% of the time that the laboratory spent on industrial sales problems in 1952. Many of these accounts have already been mentioned in this report. Others, for whom large amounts of work were done, are listed on the following page.

<u>Account</u>	<u>Cost of Laboratory Work</u>
General Electric Co.	\$ 1294
Ingersoll-Rand	1021
R.C.A.	925
Bell Telephone Labs.	733
Hard Mfg. Co.	672
Talon	672
Philco	564
Eastman Kodak Co.	515
Eclipse-Pioneer Co.	496
Supreme Steel	488

Our production of industrial finishes falls into the following broad categories:

Enamel (alkyd, urea formaldehyde, melamine, and oil base)	33%
Thinner	20
Lacquer (clear and pigmented)	14
Metal Decorating Finish (varnish and enamel)	13
Wrinkle Finish	12
Varnish (other than that sold to metal decorating trade)	5
Not accounted for	3
	<u>100%</u>

Gray and green are the most popular colors that we sell to our industrial trade. About a quarter of our industrial production is in gray, 22% is in green, 18% is in white, 13% is in black, 12% is in brown and the remaining 10% is distributed among all the other colors.

One cannot help being impressed by the very extensive range of products that we sell to industry--but are we cultivating specific industries as intensively as our coverage is extensive? We sell two of the leading manufacturers of office machines and have acquired experience in handling their problems. Have we attempted to capitalize on this experience by promoting ourselves with other office equipment manufacturers? Some effort at specialization would enable the laboratory to do a more intensive formulating job. As it is, the laboratory has to spread its efforts rather thin to cover all the fields in which we are trying to be experts.

COMPLAINTS

1952 was a record-breaking complaint year, as the following figures clearly show:

Year	Complaints Registered		Per Cent Justified Complaints	
	Entire Company	Bflo. Factory Production Only	Entire Company	Bflo. Factory Production Only
1952	479	341	35	34
1951	302	230		36
1950	313	266		38
Avg. 1936-1940 incl.		268		27

Complaints began to increase rapidly about May 1, 1952. The new salesman's Inspection Report was adopted at about this time. While the new form has encouraged the registration of complaints, the following table indicates that other factors enter into the picture.

Sales Div.	1952 Complaints	1951 Complaints	Per Cent Chg. 1952/1951	Complaint Records Put Through 1952
Canadian	6	17	-65	3
Central	138	85	+62	79
Eastern	94	59	+59	58
Western	150	69	+118	60
Industrial	91	72	+26	None
Entire Company	479	302	+59	200

Industrial salesmen do not use the new form, yet that division had 26% more complaints in 1952 than it did in 1951. Canadian salesmen do use the form, but they registered fewer complaints. The Western Division showed the greatest increase in complaints. It is believed that the Western Division is attempting to register every possible complaint in order to avoid the criticism that it has been negligent in calling attention to product deficiencies.

Forty per cent of our 1952 complaints pertained to liquid paint (consistency, settling, etc); 47% to appearance at the time of application (color, gloss, hiding, etc) and only 13% to service failures. Half of the complaints on the liquid paint were justified; a third of the appearance complaints were justified; but only 13% of the alleged service failures were justified.

Principal Causes of 1952 Complaints

	Per Cent of All Complaints	Per Cent Justified This Group
Color	15	45
Viscosity	10	42
Gelation, Lumpiness	7	53
Gloss	7	27
Streaking, Spotting	7	27
Sagging, Wrinkling	7	22
All other causes	47	-
	100%	

In 1952, we had eleven complaints on mislabeled goods. All of these complaints involved Buffalo production and seven were justified. The Factory and Advertising Department have worked out a new procedure for handling labels. This should eliminate complaints on mislabeled goods.

Laboratory complaint investigations cost the company considerably more money than the amount spent on settlements. It cost \$5200 (equivalent to the salary of one chemist for a full year) to check 1952 complaints on Buffalo production. If a proportionate amount were spent by our subsidiaries, the company's bill for investigating complaints would have been about \$7500 in 1952.

It is the opinion of our technical organization that the current crop of complaints is due in part to the caliber of the factory help we have to employ. Our finishes are at the mercy of the people who handle actual production. Carelessness and inaccuracies may be revealed by control tests, but are more likely to show up when the product is used a year or two later.

The following chart tells the story about each producing plant's complaints in terms of its productive capacity:

Complaints per Million Gallons of Production

	<u>1952</u>		<u>1951</u>	
	<u>Total</u>	<u>Justified</u>	<u>Total</u>	<u>Justified</u>
Buffalo Factory	108	37	67	24
Waggener Pt. Co.	144	61	48	21
Ft. Erie Factory	20	13	63	22
Dibble Color Co.	120	36	95	23
Cleveland Pt. & Color Co.	190	84	69	25
Entire Company	110	39	66	24

An interesting feature in the above chart is the consistency of the figures in the fourth column (Justified Complaints in 1951) as compared with the wide divergency of the figures in the second column (Justified Complaints in 1952). The whole pattern seems to have changed in 1952.

It is unwise to draw many conclusions from the above chart. Our factories, other than the Buffalo plant, serve single sales divisions, each of which handles complaints in its own way. Each factory delegates complaint investigations to one person, but these persons may differ in what they consider to be a justified complaint. The good record of the Fort Erie plant is probably due to the fact that the Canadian Sales Division does not seem to allow bad situations to develop into complaints.

PERSONNEL

	<u>1952</u>	<u>1951</u>	<u>1950</u>	<u>1942</u>
Resigned	16	7	16	32
Transferred to other divisions				2
Discharged		1	1	2
Enlisted or drafted	<u>2</u>	<u>5</u>	<u>3</u>	<u>6</u>
Total Separations	18	13	20	42
Average number employees	61	60	61	55
Separation Rate	30%	20%	33%	76%

The separation rate rose appreciably during 1952 but was no higher than the average postwar separation rate. Six of the separations involved a single job. Half of all persons who resigned were hired in 1952 and worked an average of only two months. Reasons for resignation were:

Better paying job elsewhere	4
Disinterested in job	3
Health (including pregnancy)	3
Family or personal problems	6
	<u>16</u>

While we lost two employees to the draft in 1952, three employees who were drafted in 1950 returned to their former jobs, after having completed military service. Two of the returned veterans served in Korea where both were wounded, the third served in Trieste. Unfortunately, one of the returned veterans must leave us for prolonged hospitalization.

Due to the illness of Mr. Niewrzal, two key laboratory employees spent three weeks, each, on loan to the Waggener Paint Co. Certain architectural problems had to be delayed during this critical period.

We are now unable to hire sufficient people to man the laboratory and have three job vacancies that have remained unfilled for about a month. The demand for all types of technical personnel exceeds the supply in this area.

MISCELLANEOUS

All formulas and raw material code lists were microfilmed late in December 1952 under laboratory supervision. The microfilmed records will replace older and now obsolete records in bank vaults, where they are filed for use in the event of disaster.

Labeling laws have recently become complicated by the enactment of economic poisons laws in several states. By correspondence, we have determined exactly what products must be registered and have handled all registration details. The labeling problem is growing more complex every year and is taking progressively more technical time.

In 1952, an effort was made to interest the Monsanto Chemical Co. Organics Division in undertaking a joint research endeavor that might benefit both participating companies. Messrs. Armstrong and Lutz met with Monsanto research and sales officials in St. Louis and discussed the proposal. The Monsanto people were interested but nothing came out of the discussion. The Monsanto group had no understanding of paint problems and the projects they wished to pursue appeared unpromising to us. An alliance of this kind--if centered on a mutually interesting project--could mean to us what the Shell Development Co. affiliation has meant to Devco & Reynolds.

The laboratory acquired a new chemical microscope in 1952 (\$1500 cost). This instrument with its supplementary optical fittings and illuminating devices has been very helpful in studying film and pigment problems. A pH meter was also acquired in 1952 (\$195 cost) for studying the acidity and alkalinity of water solutions. Vapex Wall Primer batches are regularly tested with this device.

Beginning in 1952, we have undertaken to keep the Dibble Color Co. informed about the new industrial developments of our Buffalo laboratory. Laboratory reports are screened each month and those that we believe will interest Dibble are forwarded. This has precipitated requests for numerous formulas and liquid samples and has added to the laboratory's already heavy clerical load.

LABORATORY EXPENSE

The money spent in operating the laboratory went into the following channels:

<u>Activity</u>	<u>1952</u>	<u>1951</u>
Research	\$ 65,200	\$ 61,900
Special Sales Problems	75,200	70,000
Manufacturing Services	<u>127,600</u>	<u>121,000</u>
Total	\$268,000	\$252,900

Today, it requires almost as much time to nurse new finishes through the initial stages of production as it does to develop them. For every three hours spent on research and development, two hours are spent on plant assistance. This is exclusive of the time which the laboratory spends on regular production control. Factory problems are particularly time-consuming in the resin end of our business. All initial batches are checked through as well as batches made when the regular operator is absent. At times, regular production batches are checked and rechecked when the operator believes he is failing to obtain the desired results. In 1952, 22% of the time of our General Research Laboratory was spent on this activity; another 30% was spent on making small batches of varnish and resin for the factory.

Laboratory Manufacturing Services cost the company 4 cents per gallon of 1952 factory production; they cost 3.5 cents in 1951

Research and development costs amounted to 4.1 cents per gallon of 1952 Buffalo and Fort Erie production; they cost 3.8 cents in 1951. In terms of 1952 sales, research and development cost 1.4 cents per sales dollar; it cost 1.3 cents per 1951 sales dollar.

SUMMARY OF LABORATORY WORK

	<u>1952</u>	<u>1951</u>
New Products Developed	1,390	1,096
Sales Problems Submitted to Laboratory	1,580	1,435
Sales Problems Reported	1,557	1,382
New Research Problems Assigned	43	54
Research Problems Completed	38	52
New Raw Materials Investigated	444	342
Raw Material Shipments Tested	2,659	2,857
Batches Tested - Buffalo Control Labs.	17,567	17,346
Batches Tested - Port Erie Control Lab.	2,790	2,589
Service Calls by Technical Personnel	176	131
Technical Department Bulletins Issued	30	20
Paint Manufacturing Bulletins Issued	30	54
Formula Analysis Bulletins Issued	57	35

March 10, 1953

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