LABORATORY REPORT FOR 1949

The year 1949 was the 25th anniversary of the establishment of the laboratory as a separate department of the company. A few comparisons between the 1924 and 1949 laboratories may be of historical interest.

In 1924, the laboratory consisted of 24 young and very inexperienced chemists and assistants. In four years, this group mushroomed into an organization of 77 persons, but then receded to its prewar size of 57 persons. Only two of our 1924 chemists had paint experience--one 5 years; the other 7 years. The 1924 laboratory occupied 10,000 sq. ft. of floor space and its first year of operation cost $56,284. Only oil varnish and oil enamel problems then required consideration.

In 1949, the laboratory was composed of 61 persons with an average experience of ten years. The 23 key employees averaged 18 years in experience. The laboratory now occupies 23,000 sq. ft. of floor space and its 1949 operations cost $228,133. Today's problems concern every conceivable type of paint composition; only a quarter of our work now pertains to oil varnish or oil enamel problems.

Our early laboratory organization suffered from the usual faults of rapid growth. Cooperation was poor, there was a certain amount of interlaboratory rivalry, and the personnel had an incomplete knowledge of company policy. With all its weaknesses, the 1924 laboratory was a boldly-conceived and ambitious undertaking for that time. Almost overnight, our laboratory became the second largest in the entire paint industry. Figures reported by the National Paint, Varnish and Lacquer Association in 1930 indicated that our laboratory then outranked the laboratories of Devoe & Raynolds, Pittsburgh Plate Glass Co. (Paint Division), and Ault & Wiborg in size. Since 1930, the laboratories of Devoe & Raynolds and of Pittsburgh Plate Glass Co. (Paint Division) have increased about nine-fold in size. Ault & Wiborg laboratories have doubled in size. Our laboratory is 50% larger than it was in 1930. While we no longer occupy the unique position we did in the 1924-1930 period, laboratories in general have become commonplace. The size of our laboratory, today, is more consistent with our sales volume than it was 25 years ago. Today's laboratory is more efficient, better organized, and better coordinated than was its 1924 counterpart. Our laboratory still ranks among the seven largest in the paint industry.

TRADE SALES DEVELOPMENTS

After almost a decade of topsy-turvy raw material conditions, we have at last reached a time when all listed items have been changed

back to their prewar quality or better. Current formula changes reflect substantial quality improvements or cost revisions. The return to normalcy is best illustrated by the following figures.

Year	Number Formula Changes Among U. S. Listed Items
1949	59
1948	105
1947	526

While fewer formula changes are now being made, they require more intensive preparatory work than typical postwar changes.

With formula stability has come a demand for a large amount of editorial work. During 1949, the laboratory issued 63 Technical Department Bulletins, 53 Paint Manufacturing Bulletins, and 33 Formula Analysis Bulletins. The preparation, checking, reproduction, and distribution of these bulletins takes a sizeable segment of the time which the laboratory devotes to trade sales work.

The more important 1949 developments in the trade sales field are outlined below:

The New Vitralite Enamel Gloss, Eggshell, and Undercoating - During 1949, we encountered seeding in Gloss White. The seeding was caused by reaction between the vehicle and the zinc oxide which had been a component in the formula since its original development. Seeding was eliminated by the simple expedient of leaving out zinc oxide, but this step diminished the color permanency of our product. We have resorted to strong bluing to compensate for the elimination of zinc oxide, and as a result our enamels have better initial whiteness than any competing enamel. Our approach to the color problem differs from that of the duPont Co. The latter company is apparently working on the principle that color permanency is far more important than initial whiteness. Their enamels start out by being very gray but change little upon exposure to subdued light. Our enamels start out by being brilliantly white but undergo far greater change and end up slightly grayer and yellower than duPont enamels.

More recently, we have encountered bad settling in certain batches of gloss colors. The problem has been temporarily met by eliminating the extended titanium pigment that is the cause of settling, but this has resulted in a loss of profit. A more desirable permanent solution is being sought.

The Eggshell was materially improved in working qualities and "stay put" properties during 1949. This was accomplished with a cost saving that amounted to $2000 during the past year.

A more economical manufacturing procedure for The New Vitralite Enamel Gloss White was adopted in 1949. We now produce this

enamel in 1100 gallon batches. We purchase the base resin in tank car quantities with consequent cost savings.

Laboratory work on The New Vitralite Enamels and Undercoating cost the company $3551 in 1949, or a little more than 4 cents for every gallon we produced (total production of all New Vitralite products was 82,715 gallons).

"61" Actinic Enamel White Gloss - $754 was expended in improving the working qualities, "stay put" properties, and color permanency of this product.

Lyt-all Double Duty Primer - In spite of record production at Buffalo and Kansas City (140,555 gallons for year 1949; 12% above 1948), complaints received primarily along the eastern seaboard forced us to develop a better sealing primer. Laboratory work cost $850.

The laboratory also developed a special spot sealer for patched walls and an emulsion type wall primer for use on wet plaster and dry wall construction. The latter product carried a development cost of $1785.

Lyt-all Hydrogloss was made "odorless" (cost of $216) and Lyt-all Flowing Flat was improved with respect to non-settling (cost $166)

House Paint - Laboratory work amounted to $2394 in 1949 and resulted in an improved working, better hiding, lower cost white. Approximately $1300 was saved during 1949 as a result of this formula change; a saving of several times this amount can be expected in 1950.

Our brown and maroon house paints were also improved with respect to color and gloss permanency. Ceiling Blue was revised to eliminate color fading in the package.

House Paint Exterior Primer was lowered in cost in an amount which saved us about $5000 in 1949.

Effecto White was reduced 17 cents per gallon during the year due to the use of resins purchased in tank car quantities and due to large size batches. While our 1949 production of Effecto White was double 1948 production, our over-all production of white enamel showed a 25% shrinkage, most of which was represented by "61" Q. D. Enamel White.

Cellu-Tone was developed on an "odorless" formula at a cost of $698. This formula is to be field tested in the near future.

Alkatite Finish was made available in several additional colors at a cost of $525.

"61" Enamel Undercoating was produced with easier working qualities and with reduced sagging tendencies at a cost of $1361.

Transportation Finishes - A total of $7369 was spent on developments in the transportation field. Of this amount, $1433 was spent on specific sales problems for railway car builders and another $2149 was spent on specific sales problems for fleet, bus, and truck owners and manufacturers. The remaining $3787 went into basic research work. $2524 was spent on automotive lacquer studies. During the past ten or fifteen years, we have had virtually no automotive lacquer business and consequently have made little effort to keep up-to-date in this field. Last year, we were forced to fill this gap in our knowledge as a result of export business on lacquers and because we had included lacquers in our transportation line. Another $1263 was spent on research work devoted to making faster drying primers for transportation work.

It seems doubtful whether our current or potential transportation business warrants the amount of technical effort we are pouring into this field. We are suddenly being expected to supply every conceivable type of coating that might be used on railway equipment or commercial vehicles. We never attempted to cover the entire field in the past; possibly we are being overly ambitious in our current transportation planning.

Grinding Liquids - $726 was spent in matching liquids used by the Tuttle Paint & Glass Co. and some business seems to be resulting from this effort.

We also spent $519 in matching liquids used by Jamestown Finishing Products (for the Industrial Sales Department) but no business has so far resulted.

INDUSTRIAL SALES DEVELOPMENTS

During 1949, we produced 18,000 gallons of fabric coatings, most of which went to Haartz-Mason, Inc. In this same period, we expended $9,072 on laboratory work, $1348 of which was spent on specific sales problems for Haartz-Mason, Inc. This represents an average development cost of 50 cents for each gallon sold, or four times the average development cost of all industrial products. It also represents the largest sum ever spent in one year on such a restricted field of activity. It was made necessary by developments in the fabric coating field itself. Heretofore, Haartz-Mason, Inc. has made its football covers, baby carriage topping, and raincoats by applying nitrocellulose lacquer on cloth-backed rubber sheeting. Because of production advantages, this company is now converting to the use of vinyl organosol compositions in place of lacquer. An organosol is a mushy substance of high solids made by dispersing vinyl resin in non-solvent. These compositions are applied direct to cloth, thus eliminating the rubber layer and all the problems associated with rubber. A baking operation causes the resin particles to fuse together into a continuous film. Only time will tell whether we have been justified in this "re-tooling" expense. Even though much work has been done, more will be required to match the efforts of our competition.

A great deal of industrial interest is being shown in styrenated alkyds. Coatings made from these alkyds dry out of dust with lacquer speed, but require from 1 to 1-1/2 hours to dry hard as compared with 30 minutes for lacquer. Styrenated alkyds produce films with better build than is possible with lacquer, but they are inclined to be brittle. They will probably fill a very definite niche in the future, but so far we have no large scale users. $2274 was spent on research work on styrenated alkyds in 1949.

Our wrinkle finish volume amounted to 86,923 gallons in 1949, or about 6% more than it did in 1948. 60% of our 1949 wrinkle finish sales went to two customers--Royal Typewriter (34,000 gallons) and International Business Machines (16,600 gallons). A total of $3819 was spent in the laboratory on wrinkle finish developments, 80% of which went into work on specific sales problems. We developed 130 different wrinkle finishes in 1949.

Hammered metal finishes (which we sell under the name of Hammertex) have offered some competition to wrinkle finishes, but we sold only 5000 gallons in 1949. We believe we have one of the best one coat hammered metal finishes on the market. American Radiator & Standard Sanitary Corp. and Markel Electric Products may become substantial users. $1381 was spent on solving specific sales problems involving hammered metal effects.

Sales of metal decorating finishes dropped from 114,300 gallons in 1948 to 110,600 gallons in 1949. Most of the shrinkage occurred in pigmented items. The "hottest" topic in the metal decorating field last year was non-scorch varnish (i.e. one that does not discolor during seam soldering of cans). While we succeeded in solving the problem of discoloration, the big stumbling block has been to obtain satisfactory appearance when the varnish is applied over wet lithographic inks. One customer, Hazel-Atlas Glass Co., has purchased 800 gallons of our original non-scorch varnish. Our biggest potential customer, Brooklyn Metal Decorating Co., has procrastinated in making tests of our experimental varnishes, thus delaying laboratory development work. A total of $5537 was spent on metal decorating research, of which $1731 was expended on specific sales problems. $3806 was spent on research, 90% of which went into the non-scorch varnish problem. A total of 60 new metal decorating finishes were developed in 1949.

In the collapsible tube field, sales also dropped, although the decrease was not great. In 1949, we produced 15,900 gallons of tube coatings in the U. S. and 2,300 gallons in Canada; in 1948, production amounted to 17,000 gallons and 2,000 gallons, respectively. In order to insure our position in the collapsible tube industry, we expended $6355 in laboratory work in 1949, of which $4854 went into research. We developed 64 tube coatings during the year. From 1946 to 1949, inclusive, we have spent $21,836 on laboratory work aimed at business in the collapsible tube industry. Our production during this period amounted to 85,500 gallons. This is equivalent to an average development cost

of 25 cents for every gallon we sold during the four years; if 1949 only is given consideration, each gallon of tube coating production cost us 35 cents, or three times the development cost of the average industrial item. It is hard to justify this heavy and continued development program in the light of steadily declining production. Our U. S. production has dropped 66% since 1946; our Canadian production, on the other hand, has risen steadily but constitutes a small segment of our over-all production.

Our principal tube coating customer, Wheeling Stamping Co., is employing a low bake (180°F.) cycle and we are supposedly receiving 95% of their business. This company has been dabbling with a high bake (300°F.) cycle. Vinyl resin coatings were submitted for experimental use on the high bake cycle but were reported to have failed on Colgate-Palmolive-Peet immersion tests. The same vinyl coating met with an enthusiastic response at Modern Containers in Canada and we have so far sold 200 gallons to this account. Our sale of tube coatings to other accounts--Standard Specialty & Tube Co., National Collapsible Tube Co., Peerless Tube Co., Sun Tube and Turner-White--has been negligible.

Sleekoat (lubricant and protective coating for automobile springs) sales boomed during 1949. 47,000 gallons were sold to Ford Motor Co. in the U. S. and 2000 gallons were sold in Canada. Increased volume was due primarily to steady employment in the steel and automotive industries. Sleekoat is now considered unnecessary and will not be used on 1950 cars. We have been attempting to interest spring producers in a lead powder composition as a substitute for the graphite coating previously sold as Sleekoat, but tests are still inconclusive. Laboratory work amounted to $601 on this work in 1949.

We are currently supplying 247 different colors to Talon for use on zippers. Conmar and other fastener accounts buy the same colors. 44 new colors were established in 1949. Laboratory work on slide fasteners amounted to $603 during the year.

One of our problem accounts is Masell Mfg. Co. This company produces metal cabinets and file boxes which are finished by dipping in a low priced green baking enamel. In view of the price angle and the method of application, color flotation is a perpetual menace. We sold 3000 gallons of one product developed early in 1949; we sold 1500 gallons of a later revision, and then 1000 gallons of a second revision. 3000 gallons of the latest development are on order. This final formula appears to be the most satisfactory one that Masell Mfg. Co. has purchased.

Eight black baking enamels were produced in sizable volume. In the aggregate, they accounted for 18,000 gallons of production (only 3% total industrial production). White baking enamels accounted for another 32,600 gallons of production (5% total industrial production), although the volume was spread over 30 items. Our business in the high bake white field has been slowly increasing

during the past few years as indicated below:

1949	32,600 gallons
1948	28,700 "
1947	27,000 "

The trend in high bake whites has been in the direction of high pigmentation and high gloss. We have been hard put to meet the gloss standards established by our competitors for we have no Banbury, Baker-Perkins, or other dispersion equipment that is generally considered necessary for the production of high bake whites. How much our sales suffered because of this has never been clearly indicated. Likewise, we do not know how much our volume would be increased if we had superior equipment. $3210 was spent on laboratory work connected with high bake white development, $2376 of which went into research.

Carborundum Co. problems required laboratory work which amounted to $861 in 1949. The Carborundum Co. waterproof sandpaper for the automotive industry is now superior to the leading competitive papers and as a result, the company is obtaining more than 50% of the total automotive business. Our adhesives are used on this paper as well as on other types of industrial and repaint sandpapers. Our production of Carborundum Co. adhesives amounted to only 12,500 gallons in 1949, because the Carborundum Co. started the year with an inventory of 38,000 gallons or enough material for seven months normal production.

The Armstrong Cork Co., ordinarily our biggest lacquer customer, purchased only $13,000 worth of coatings in 1949. The wall tile division of this company was virtually closed down for about a third of the year because it could obtain no Masonite (due to the Masonite Corp. strike). This fact, coupled with a changeover in colors, was largely responsible for our poor 1949 sales showing. We are currently matching the new lacquer color standards of this account. One big unsolved technical problem remains, i.e. the development of a suitable undercoating. While a vast amount of work was done on the undercoating problem in 1949, no satisfactory formula was developed. A total of $1990 was spent on laboratory work for this account, of which $1338 was covered by laboratory requisitions; the remainder was handled on a research basis. $582 was spent on laboratory work for other wall tile accounts.

EQUIPMENT

The Physical Testing Laboratory was completely air conditioned in 1949 at a cost of about $3400. This room is now maintained at 77°F. and at a R. H. of 50% throughout the year. All of the large paint manufacturers have installed similar rooms in recent years. Because temperature and/or humidity affect paint characteristics, such as drying, viscosity, gloss, elasticity, and package stability, standard test conditions enable chemists to make precise studies

of these properties. It is hoped that our room will enable us to overcome one of the most annoying features of present day eggshell finishes, i.e. their tendency to vary in gloss with the atmospheric conditions at the time of application.

We have also adopted 77°F. as the standard reference temperature at which all viscosity and gravity determinations are made. Heretofore, only one of our control laboratories used 77°F. as a reference temperature; all others used 70°F. 77°F. is nearer the average annual room temperature of laboratory rooms than is 70°F. and is, therefore, easier to control. It is also the reference standard preferred by our industry. While this move seems like a small and inconsequential matter, it was strongly opposed and involved tedious preparatory work before our records could be changed.

The following new small equipment was acquired during 1949:

Laboratory size Hy-R Speed Mill, cost $485
Abbe Laboratory 6-Jar Mill, cost $347
Constant Temperature Bath, cost $150
Stroboscopic Timer for Viscosimeter, cost $20

Research work is becoming more and more complicated with each passing year. New and expensive testing gadgets are constantly being developed and adopted by our industry or by our industrial customers. New and also expensive testing methods are always being devised. Keeping up-to-date in laboratory equipment and testing methods is an endless job.

Not the least confusing aspect of research is the ever growing volume of literature, which has to be studied, or at least scanned, in order to keep up-to-date. Our research library now subscribes to or receives gratis 38 weekly or monthly publications. They cover the following fields:

Scientific publications on paint	4
Other scientific magazines	9
Paint industry magazines	7
Business or professional magazines	8
House organs devoted to technical developments	10
Total	38

Scientific books are likewise being published in ever increasing numbers. Last year, our library acquired 17 new books. We now have about 600 volumes on our shelves. Our library with its bound volumes of the four most important scientific magazines probably has a resale value of over $5000. Many of our old books are extremely valuable because they are out of print. Our bound volumes of "Chemical Abstracts", for example, are worth about $1500, although they probably cost us less than one quarter this amount.

COMPLAINTS

Complaint Record - Buffalo Factory

Year	Total Complaints Received	Per Cent Justified	Complaint Index*
1949	248	34	96
1948	228	38	76
1947	141	38	52
1946	82	43	31
1940	248	22	134
1939	264	31	138

*Number of complaints per million gallons of manufactured goods

1949 was the fourth consecutive year in which the number of complaints and the complaint index have risen. The one bright spot is the decline in justified complaints.

The distribution of complaints by sales offices together with related data are tabulated below:

Originating Sales Div.	No. Complaints	No. Complaint Records Reported by Sales Offices	Cash Settlements (1)
Central	115	91	None
Western	62	41	$ 135.00
Industrial	60	0	Not known
Eastern	41	38	$1440.35 (2)
Canadian	7	2	None
Total	285 (3)	172	$1575.35

(1) Based on information in Complaint Records
(2) $1293.43 of this amount went to one account, the Armstrong Cork Co.
(3) This total does not agree with the total in the previous table, because it includes subsidiary company products as well as Buffalo-made products.

With the exception of the Central Sales Division, our sales divisions registered fewer complaints in 1949 than in 1948. The Central Sales Division registered twice as many complaints in 1949 than it did in 1948. In fact, 40% of all 1949 complaints originated with the Central Sales Division.

The imbalance between complaints recorded by the Central Sales Division and other trade sales divisions is apparently caused by differences in office policy. The Central Sales Division registers

every complaint with the laboratory; the Eastern Sales Division (and probably the Western Sales Division) attempts to screen out those complaints that are obviously unjust or are due to well known causes. Our sales offices should be guided by a single policy, but it is difficult to decide which of the two prevailing policies is better. Laboratory complaint investigations cost $2400 in 1949. If we applied the Central Sales Division practice to all offices, the cost of complaint investigations would probably be double what it now is. Furthermore, additional clerical expense would be involved.

Complaints fall into three general categories: (1) those involving liquid paint--such as complaints about viscosity, working, settling, skinning, etc.; (2) those involving the appearance of the fresh paint job--such as complaints about color, gloss, hiding, leveling, streaking, etc.; and (3) those involving performance--such as complaints about adhesion, durability, washability, etc. The 1949 score on this basis follows:

Classification	No. Complaints	Per cent of All Complaints	Per cent Justified in Each Classification
Liquid Paint	125	44%	45%
Appearance	134	47	25
Performance	26	9	8
Total	285	100%	

Performance complaints were few in number and few were justified. Liquid paint criticisms produced the highest yield of justified complaints. Most of these complaints are tied to the keeping qualities of our products. Unfortunately, today's paint vehicles are inherently more sensitive to temperature and age than the slow-drying vehicles of a decade or two ago.

In 1949, ten complaints were due to factory carelessness--something that was unheard of a few years ago. Three complaints resulted from mislabeling; two were caused by contamination; and five were due to faulty sealing or short filling of containers.

PERSONNEL

Labor turnover decreased to the lowest figure in ten years. The following table indicates the trend during this period:

	1949	1948	1946	1942	1940
Resigned	7	9	17	32	2
Transferred to other divisions of company	-	-	1	2	4
Discharged	-	-	4	2	2
Enlisted or drafted	-	-	1	6	-
Total separations	7	9	23	42	8
Average Number Employees	61	60	57	55	55
Separation Rate	11%	15%	40%	76% (1)	15% (2)

(1) All time peak in turnover
(2) Average prewar (1935-1940, incl.) turnover was 17%

No one has left the employ of the laboratory in five months.

We are gradually supplanting young women with young men. At present, 26% of our technical employees are women; a year ago, 33% were women.

A plan of rotating the more promising young male laboratory employees from job to job is being tried in an effort to broaden their experience and training.

LABORATORY EXPENSE

The cost of the laboratory in terms of our over-all production and sales is shown below:

	Cost of Research and Formulating (1)			Cost of Manufacturing Services		
	1949	1948	1940	1949	1948	1940
Per gallon of Buffalo Factory Production				3.7¢	2.7¢	(2)
Per gallon of Combined Buffalo and Fort Erie Factory Production	4.3¢	3.4¢	4.0¢			2.2¢ (2)
As per cent of Dollar Value of Sales of all products made at Buffalo and Fort Erie	1.5%	1.3%	1.8%			

(1) Research and Formulating costs exclude that portion of paint work which benefits subsidiary companies, but includes cost of paint work for benefit of Fort Erie factory.

(2) Prior to 1947, Fort Erie production control was handled at Buffalo but control costs were not segregated to show cost of work for Buffalo factory only. All research and formulating of Canadian products is still performed in the Buffalo laboratory.

From the above table, it is obvious that the cost of research per gallon of production has risen appreciably since 1948--due to shrinkage in production as well as to increased laboratory operating expenses. In terms of sales, research cost only slightly more than it did in 1948, but less than it did in 1940.

The actual cost of operating the laboratory in 1949 was $228,133 or 9% more than in 1948. The increase was due almost entirely to salaries and wages. Money spent on laboratory work was distributed as follows:

Activity	1949	1948	1945
Research	$ 67,700	$ 60,800	$ 30,000
Special Sales Problems (Laboratory Requisitions)	63,600	60,800	59,000
Manufacturing Services	96,800	87,800	61,100
Total	$228,100	$209,400	$150,100

The above figures indicate that expenditures on research have mounted appreciably since 1945, when of course our research activities were curbed by lack of personnel. Expenditures on special sales problems have remained fairly constant. Work for the benefit of the factory is also mounting steadily. Part of this is explained by the fact that the laboratory is today doing a considerable amount of work that probably should be done by the factory.

Of the $63,600 spent on special sales problems in 1949, 77% or $49,100 was paid by the sales divisions in the form of laboratory charges. In 1948, 82% of special sales work was underwritten by the sales divisions.

Of the $131,300 spent on research and sales problems in 1949, 62% or $81,000 directly benefited the Industrial Sales Division. Another $15,000 was applied on paint problems for our subsidiary companies and our Fort Erie factory. The remaining $35,300 was applied on research and formulating problems concerned with Pratt & Lambert trade sales specialties.

The money spent in solving industrial sales problems in 1949 amounted to an average of 12.7 cents for every gallon produced at our Buffalo and Fort Erie plants. In 1945, this figure was 5.8 cents. Laboratory effort for the benefit of industrial sales in 1949 represented 4.5% of the dollar value of our combined U. S. and Canadian industrial business, the lion's share of which was of course done in the U. S. An article published in the December 1949 issue of the "Official Digest" implied that two firms, Rinshed-Mason and Grand Rapids Varnish Co.--both active in the industrial field--spent 4% of each sales dollar for laboratory development work. Our 4.5% figure is higher than this average, and there is little doubt in my mind that we are now doing more laboratory work aimed at the cultivation of industrial customers

than is justified by current industrial sales. If industrial sales do not increase in 1950, it is my opinion that we should decrease the size of our industrial laboratory by at least one employee.

Our industrial business is peculiar in that we seem to go after so many accounts that have unusual problems. We have few accounts that buy simple staples, like white baking enamel or plain black enamel. Possibly the white and black business is too simple, and is therefore highly competitive and unprofitable by our standards. Maybe our standards are false. We certainly did not make the industrial sales profit we thought we did in 1949 when consideration is given to the $44,000 which was absorbed in factory costs to cover research work benefiting the Industrial Sales Division and the additional subsidy of $2280 (as a monthly rebate of $190) which was also absorbed in factory costs.

By contrast, laboratory work on trade sales specialties seems unduly modest. It amounted to 1.6 cents for every gallon of these specialties produced at the Buffalo and Fort Erie plants (paint excepted). In 1945, the corresponding figure was 1.4 cents. In 1949, laboratory effort on specialty items represented 0.6% of the dollar value of combined U. S. and Canadian trade sales, paint excepted. Quoting again from the December 1949 "Official Digest", 2% is commonly accepted as a sound figure for trade sales laboratory work. If this yardstick is accepted, we appear to be farther out of line on trade sales work than we are in industrial work, but in the opposite direction.

GENERAL COMMENTS

The effectiveness of laboratory work might be improved if some solution could be found for the following problems:

1) The laboratory lacks close knowledge of trade sales painter problems and customer needs. Laboratory personnel has virtually no direct contact with our customers. The weaknesses of our products remain unknown unless they are serious enough to be the subject of complaint. The laboratory does not have any specific knowledge of what our customers need, unless that need becomes so urgent that sales are affected.

This ignorance of the customer side of our business is a missing link in our laboratory operations. It could be corrected by enabling selected laboratory personnel to spend a small percentage of their time in the field (with our salesmen). If such a plan were to be successful, it would require the sympathy and support of the sales organization. It would cost at most $2000 per year, but it could result in new ideas worth many times this amount. One successful company (Olin Industries) allocates 12% of its laboratory budget to so-called market surveys by its research group leaders.

2) Our laboratory has grown middle-aged and is also a victim of excessive inbreeding. We need fresh ideas and new approaches to our formulating problems. It is an accepted fact that new scientific discoveries come predominantly from young men between 25 and 35 years of age. The average age of our 23 key laboratory employees is 39 years, only four of these men are under 35 and three are 32 to 34 years of age.

If we do not adopt a policy of hiring one new and young chemist of high calibre each year for the next few years, our laboratory in 1960 will be made up almost entirely of personnel past their peak of creative effort (or they will be inexperienced, if hired at that time). Even though we hire a new man at age 25, then give him five years of training and experience, he has only five years left for his best creative endeavors.

The only real objection to the above program is one of cost. Since we have little labor turnover, a new employee would be an extra employee--at least until such time as some other employee resigned or was discharged. The program would add $3000 to the payroll during the first year of operation, but the annual cost should taper off in subsequent years due to normal turnover. Delaying this program will not hamper us in the immediate future, but we will pay a penalty in another decade.

3) One of our most serious problems is the inadequacy of field testing facilities for evaluating new trade sales formulas and formula changes. Our present practice is to send samples to our branch offices and/or our subsidiaries for comment. These organizations are rarely able to persuade painter customers to make tests under ideal conditions (i.e. side-by-side comparisons of the experimental paint with the standard paint on a properly prepared surface with proper equipment) or even in a half-satisfactory way (i.e. with a complete report on the more important features, such as working, sagging, drying, gloss, etc.). After waiting weeks or months, we receive conflicting and sometimes misleading reports that help little in making a sound business decision on the new formula. It is difficult to eliminate personal prejudice when the sales office and/or the cooperating painter know the identity of products being tested.

The laboratory itself has been equally unsuccessful in arranging painter tests, although laboratory tests are "blindfold" tests. Unfortunately, laboratory tests have to be bootlegged to avoid offending our local distributor and our local salesman, neither of whom likes the idea of giving away samples in return for a test.

SUMMARY OF LABORATORY WORK

	1949	1948
New Products Developed	1,603	1,632
Sales Problems Submitted to Laboratory	1,790	1.810
Sales Problems Reported	1,811	1,815
New Research Problems Assigned	60	50
Research Problems Completed	66	85
New Raw Materials Investigated	353	342
Raw Material Shipments Tested	2,156	2,438
Batches Tested by Buffalo Control Labs.	16,365	16,783
Batches Tested by Fort Erie Control Labs.	2,135	1,938
Service Calls Made by Technical Employees	139	146
Technical Department Bulletins Issued	63	56
Paint Manufacturing Bulletins Issued	53	58
Formula Analysis Bulletins Issued	33	None*

*New activity undertaken in 1949

February 23, 1950

LABORATORY REPORT FOR 1949