

A SURVEY OF THE ATLANTA MARKET
FOR
ELECTRO-METAL FINISHING

A THESIS

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FOR
ELECTRO-METAL FINISHING

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A SURVEY OF THE ATLANTA MARKET

FOR

ELECTRO-METAL FINISHING

CHAPTER I

INTRODUCTION

The purpose of this study is to examine the market for electro-metal finishing in the Atlanta metropolitan area. The results should show whether there are trends which justify improvement or expansion in the electro-metal finishing industry in the area and some of the directions which such expansions should take.

The analysis considers the Atlanta area as a consumer of electro-metal finishing, from whatever source it may be derived, and also considers the market for finishing produced in Atlanta, whether it remains in Atlanta or is sold into markets elsewhere. The total market for Atlanta producers of finishing is thus defined as the aggregate of all the finishing sold in the area plus that which Atlanta manufacturers ship into other markets.

As used in this thesis, metal finishing is the treatment by electro-chemical processes of metal surfaces, primarily, to secure a desired "finish" - as illustrated by chromium plating, nickel plating, etc. Included in the definition is "anodizing" which, although not ~~a~~ distinctly a "plating" process, produces by electro-chemical treatment of aluminum a finish which possesses excellent corrosion-resistant properties.

This definition does not include such finishes as are produced by

enameling, galvanizing, or rubberizing since they involve different processes.

The problem here is considered from four aspects:

1. General nature, character, and scope of the metal finishing industry in the Atlanta area.
2. Nature and scope of the demand for metal finishes by industrial consumers in the area.
3. Types and volume of finishes produced in other areas for Atlanta consumers.
4. The market for Atlanta finishing-producers for consumers elsewhere.

Two approaches were used in making the survey. One was to study the industry itself as regards its structure, types and trends of materials consumed, value and costs of finishing, and customers served. The second approach was concerned entirely with the study of consumers of finishing in this area. The report, therefore, will endeavor to show the total volume, both actual and potential, which may be available to Atlanta producers.

The survey includes (1) plants which produce finishes for their own plant consumption; (2) job shops, or plants whose sole business is producing electro-metal finishing for sale; and (3) industrial consumers who purchase their metal finishing from other shops, either in Atlanta or elsewhere. Included with the city of Atlanta are the following outlying industrial centers: College Park, Decatur, East Point, Marietta, and Smyrna. About ninety percent of the plants surveyed are in Atlanta proper.

In the localities mentioned all plants producing or using metal

finishing were surveyed in a manner to be described below, except those small shops doing specialty jobs such as electroplating novelties of sentimental value, like personal jewelry. As far as could be determined, there is but one shop of this type.

Metal Finishing Processes

The art of metal finishing requires considerable skill. In general, while the process is simple, competition requires careful control of operating conditions to produce a satisfactory product. The thickness of the metal deposited on the base in order to produce the finish must be known in order to assess the cost of materials used. Small pieces, such as those used as parts of fountain pens and personal ornaments, are handled in large quantities. The electrical contacts between such pieces must be so controlled as to reduce the chances of defective finishing.

The principal types of metal finishing in the area are nickel plating, chromium plating, anodizing, cadmium plating, zinc plating, tin plating, silver plating, and gold plating. These are in the approximate order of importance. Nickel and chromium plating are conjugate- that is, no chromium plating can be secured without a primary plate of nickel. Nickel plating, however, is obtained without a primary coating of chrome. In chromium and nickel plating of ferrous materials, a copper plate is needed prior to the deposition of the nickel layer.

With the growing use of aluminum, anodizing has assumed more and more importance in recent years. This process utilizes a chromic or sulfuric acid bath (similar to the plating process but with reversed polarities) and produces on aluminum a coating of aluminum oxide, which is corrosion resist-

ant. During World War II, anodizing was required for all aluminum objects in navy contracts. Chromic acid is being displaced by the sulfuric acid process since the present demand for anodized finishes is for show purposes primarily.

Cadmium plating is relatively new. It is weather resisting and is much used to reduce corrosion of metal exposed to salt water. It is extensively used for coating screws, bolts, and small objects whose strength is impaired by weathering.

Zinc, in many respects, serves the same purposes as cadmium. It competes with cadmium when the price of cadmium is high.

Platings of copper, tin, lead, and other metals are not in great demand but are often required in connection with special work. The same may be said with reference to gold and silver. As mentioned above, copper is used extensively for a base plate when ferrous materials are plated with nickel or chromium.

CHAPTER II

METHOD OF STUDY

This study includes an individual survey of every plant producing or using electro-metal finishing in the Atlanta metropolitan area. Practically every plant survey was made on personal interview with persons representing management in some capacity. They included owners of plants, company executives, cost accountants, or metal finishing department heads when no one else could give the data required. Owners of plants, company executives, and purchasing agents were interviewed to obtain data from the industrial consumers.

The questionnaire forms used in this survey are appended to the thesis. Form A was for the plants producing finishing, and Form B was for the consumers. Information on the various items given was secured on call from individuals possessing the data requested. Except for those plants where no records were kept, all the information needed for the survey was obtained. There were no refusals for data, when data was available.

The first section of Form A requesting data on the number of employees reflects a measure of plant growth and the number of man-hours indicates the volume of activity. The data on technically trained personnel measures the progress of the art or the competence of the management in handling large scale plating operations. This matter will be discussed more fully in another chapter, since, as will be shown, many plants estimate their plating business by guesswork and hence cannot long survive in a highly competitive market. Moreover, the art of electroplating has made many technical advances during and since the war so that more professional help

is needed in obtaining the types of finishes the market is demanding.

The second and third sections of Form A and all of Form B were set up to secure pertinent information on the materials used by the industry for the period which the survey covers. Thus, information on plant consumption of materials, dollar volume, and market data pertaining to the Atlanta area and to other areas was obtained.

Since the survey was made in 1949, most of the data obtained was for the period ending in 1948. The 1949 data are estimates by management. In general, the information secured by the forms is such that a reasonably complete picture for the entire industry was obtained for the period covered.

An attempt was made to determine the actual dollar volume of metal finishing produced in the area. This information was difficult to obtain for two primary reasons: inadequate cost records and reluctance to give information the companies preferred to hold confidential. However, reasonable estimates of this volume could be made because equivalent figures on materials consumed in the process were given more readily. These were substantiated by reports from the consumers on the amounts which they bought from the job shops.

The data secured on Form B were readily obtained from plant owners, company executives, and purchasing agents of the industrial consumers and are, therefore, considered accurate.

Excellent co-operation was received from all individuals interviewed. In all, interviews were made with about twenty metal finishers and about three hundred consumers or potential consumers of finishing. These interviews included all the plants of importance, except the automobile assembly plants. Some data given were confidential but are so included in the anal-

ysis that identification is not possible. It is believed that this survey gives a representative picture of the industry in the Atlanta area.

CHAPTER III

NATURE AND SIZE OF THE ELECTRO-METAL FINISHING INDUSTRYIN THEATLANTA AREA

A clearer understanding of the metal finishing industry may be obtained by considering separately (1) those plants which do metal finishing for sale to other concerns, known by the trade as "job shops"; and (2) those plants whose finishing is part of their general manufacturing process; i.e., consumed within the plant itself. Table I shows the number of plants, grouped into these two major classifications, operating in Atlanta for the period 1940-1949. It will be seen that the number of shops producing finishing for other plants increased from three to five during this period, and that the plants whose metal finishing is for their own consumption increased from eight to fifteen. This latter increase may indicate several things. First, there has been an increased demand for metal finishing which cannot be supplied by the job shops; or, second, that the job shops do not have the facilities for producing the kind of work desired. Three plants producing finishing for their own use reported the second reason for developing their own metal finishing departments. .

The table further shows that for the period of 1940-1949 the number of plants doing metal finishing in the area almost doubled.

A year-by-year trend in the total number of plants doing finishing, with classifications according to the type of finishing, is shown in Table II. For job shops only, this information is summarized in Table III. It will be seen that substantial increases occurred in the number of plants

TABLE I

Number and Types of Plants in the Atlanta Area Producing Metal Finishing

Purpose of Product	Year					
	<u>1940</u>	<u>1945</u>	<u>1946</u>	<u>1947</u>	<u>1948</u>	<u>1949</u>
For Sale	3	3	4	5	5	5
For Own Use	8	8	11	12	15	15
Total	11	11	15	17	20	20

doing chromium and nickel plating. The increase noted for copper is, as has already been pointed out, due to the fact it is used as a base plate when ferrous materials are plated with chromium or nickel.

As an indication of the size of these plants in 1949, thirteen plants employed less than ten workers. Three of these plants are job shops. The largest job shop employed about forty workers, and the largest of the plants producing for themselves employed about sixty workers in the metal finishing department.

It is noted from Table I that while the number of job shops increased by only two from 1940 to 1949, the number of plants having departments to produce electro-metal finishing for their own consumption increased by eight. A number of the leading producers of the city estimated that the finishing business of their plants has more than doubled since 1940. If a similar increase has occurred in all plants, both job shops and those doing finishing for themselves, which have also substantially doubled in number - i.e., from eleven to twenty, as indicated in Table I, - it seems reasonable to infer that the aggregate volume of finishing in Atlanta has increased to

TABLE II

Number of Plants in the Atlanta Area Producing Metal Finishing, Whether for Sale or for Own Plant Use, Grouped According to the Types of Finishing Done

Type of Finishing	Year					
	<u>1940</u>	<u>1945</u>	<u>1946</u>	<u>1947</u>	<u>1948</u>	<u>1949</u>
Anodizing	1	2	3	3	3	3
Cadmium	5	8	8	8	10	9
Brass	0	1	2	2	2	2
Chromium	5	4	5	6	11	11
Copper	8	6	9	11	15	15
Gold	0	1	3	3	3	3
Nickel	9	6	9	11	15	15
Silver	2	3	4	4	4	4
Tin	0	0	1	1	2	2
Zinc	5	5	4	4	4	4

TABLE III

Number of Job Shops in the Atlanta Area Engaged in Metal Finishing for Sale to Other Plants, Grouped According to the Types of Finishing Done*

Type of Finishing	Year					
	<u>1940</u>	<u>1945</u>	<u>1946</u>	<u>1947</u>	<u>1948</u>	<u>1949</u>
Anodizing	0	0	1	1	1	1
Cadmium	3	3	3	3	3	3
Chromium	3	2	2	2	4	4
Copper	3	2	2	3	4	4
Nickel	3	2	2	3	4	4
Zinc	2	2	2	1	1	1

*No job shop reported doing industrial brass, gold, silver, or tin plating.

approximately four times what it was in 1940. That this may be conservative is indicated by the figures in Table IV, which show that the total value of finishing produced locally for the Atlanta market increased from about \$9,000 in 1940 to nearly \$60,000 in 1948, or more than six times.

It appears, however, that the bulk of this increase has not gone to the job shops. This is substantiated by Chart 1, in which the upper trend line represents the aggregate business placed by Atlanta industrial consumers with both Atlanta firms and shops in other cities. The upper trend line is progressively higher, year by year, than the lower trend line, which represents the finishing bought from local shops by Atlanta firms. This growing difference, or about \$140,000 of business in 1948, went to shops in

other cities. The general expansion of consumption, by types, of finishing by Atlanta users indicated in Table V is from almost \$16,000 in 1940 to slightly over \$200,000 in 1948.

TABLE IV

Volume of Electro-Metal Finishing Purchased by Atlanta Industrial Consumers
from Atlanta Job Shops

Type of Finishing	Year		
	<u>1940</u>	<u>1945</u>	<u>1948</u>
Anodizing			\$4,400
Cadmium	\$775	\$3,090	12,875
Chromium	6,700	6,440	17,025
Copper	200	2,300	4,200
Nickel	1,470	9,945	19,765
<hr/>			
Total Volume	\$9,145	\$21,775	\$58,265
Number of Consumers Reporting	24	30	53
Average	\$381	\$726	\$1,099

TABLE V

Total Volume of Electro-Metal Finishing Purchased by Atlanta Consumers
from both Atlanta Shops and Shops Elsewhere

Type of Finishing	Year		
	<u>1940</u>	<u>1945</u>	<u>1948</u>
Anodizing	\$5,000	\$1,000	\$8,900
Cadmium	775	3,090	12,875
Chromium	8,100	33,840	156,725
Copper	200	2,300	4,200
Nickel	1,470	9,945	19,765
Silver	200	800	500
Total Volume	\$15,745	\$50,975	\$202,965
Number of Consumers Reporting	27	35	62
Average	\$583	\$1,456	\$3,274

The fact that the number of job shops increased by only two is another indication that there has been a trend away from job shop production to production in plants which produce their own finishing, or to shops in other localities. This view is supported by testimony from the management of a number of concerns which have had to install their own plating departments because they could not obtain satisfactory service from the local job shops.

One plant, for example, which manufactures industrial machinery had to set up its own metal finishing department after it was unable to obtain

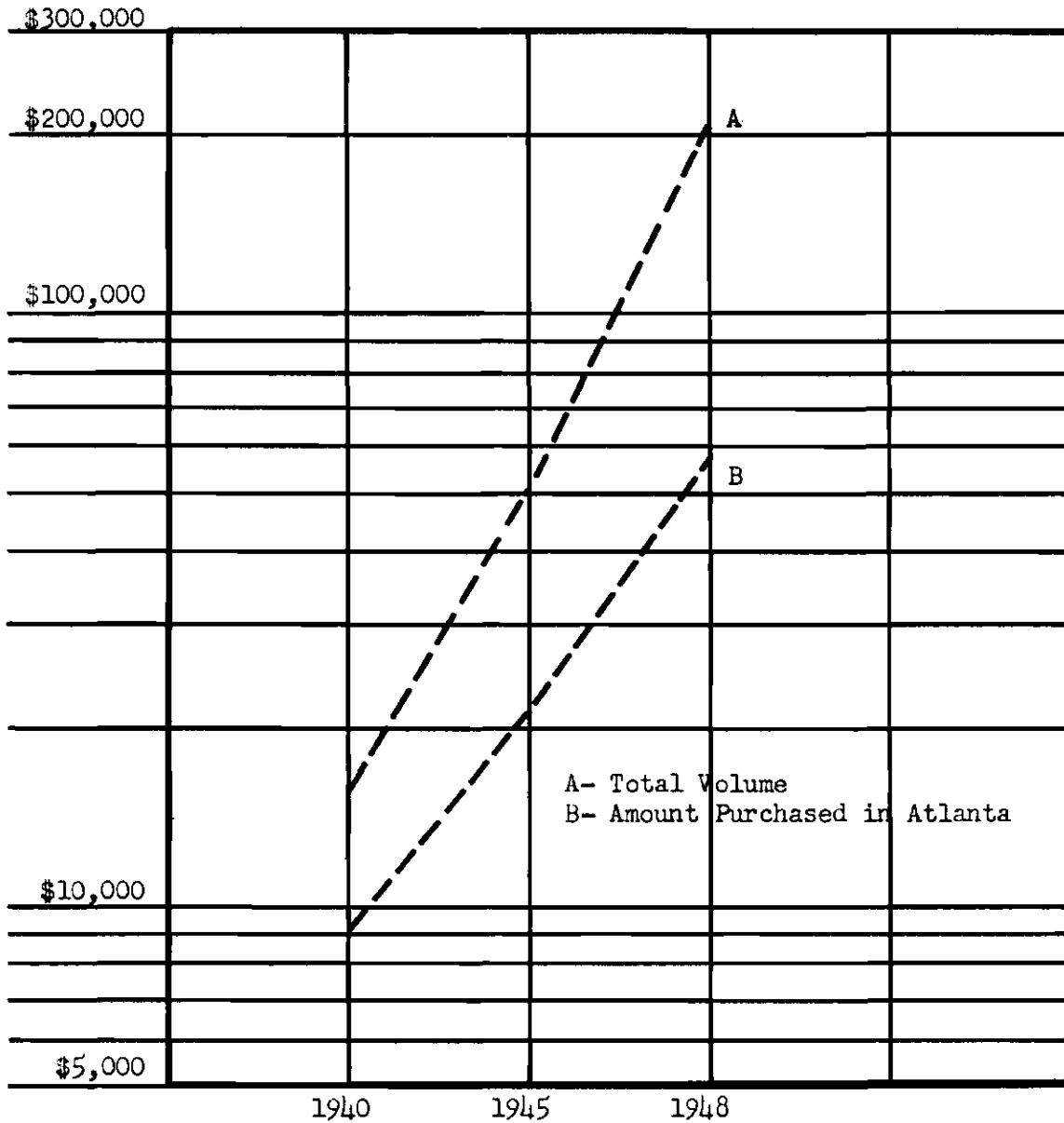


Chart 1

Volume of Electro-Metal Finishing Purchased by Atlanta Consumers in
Atlanta or from Shops in other Localities

satisfactory finishes, either on the basis of quality or cost. Another plant found cadmium plating done by Atlanta shops defective and the price too high. Consequently, it had to set up its own department in 1946. Still another plant reported a similar situation in chromium plating. Again, due to defective plating and high costs of Atlanta concerns, this plant put in a finishing department to produce copper, nickel, and chromium finishes.

The job shop business also appears to be handicapped by other types of deficiencies. A leading stove manufacturer, who had discontinued his plating department during the war, undertook to buy his requirements after the war from the plating companies of the city and thus avoid re-opening his own department. When he requested prices from local shops for finishing small items which he estimated should cost only \$2.00 each, his lowest bid was \$12.50 - fifty cents more than the \$12.00 sale price of his completed product. This man was convinced that most of the local plants are unable to make proper estimates on costs. This judgment seems justified by this survey, which finds that only approximately twenty percent of all plants doing finishing work maintain accurate cost accounting on their operations.

In fact, among the consumers there is widespread complaint of poor quality and high costs of finishing by Atlanta shops. This situation is not at all surprising in the light of the findings of this survey of the lack of technically trained personnel in the metal finishing industry. Of the five job shops surveyed, only two of them have either a graduate chemist or chemical engineer. Of the fifteen plants doing work for their own use, only two employ graduate chemists or chemical engineers, relying mostly on personnel who may have taken only short specialty courses. In view of this situation it is little wonder that several of the consumers are looking

around for other sources of finishes. A number of the comments of the consumers are included below, according to the type of finish they use.

Anodizing

One consumer, a producer of food machinery, reported that the local price of anodizing is too high and that whenever it is possible, he avoids the use of anodizing by changes in the design of his product.

Another consumer, a producer of aluminum products, also reported anodizing costs of Atlanta firms too high and may put in its own finishing department.

A third consumer stated that it has anodizing done in South Carolina, since the part to be finished is manufactured there. However, that part could readily be manufactured in Atlanta.

Still another consumer of anodized finishes, a sign company, reported that it purchases its requirements in Illinois and Ohio, not knowing that such finishes are available in this area - an indication that the Atlanta metal finishing industry does not solicit business vigorously.

Cadmium

The same producer of food machinery reported that cadmium finishing costs of Atlanta plants are high and that he avoids use of this finish by changes in design.

One producer of textile accessories which does not now use plating contemplates a change in design, which will require cadmium plating. This potential consumer reported that he has never been solicited for business by Atlanta shops.

Another producer of textile equipment said that it is discontinuing the use of cadmium plating since other substitute materials are now available.

Chromium

The producer of food machinery who reported avoiding the use of anodizing and cadmium plating also avoids the use of chromium plating by changes in design, since the cost of chromium plating is high.

One potential consumer said he is interested in hard chromium plating, but that this type of finish is not produced satisfactorily by Atlanta shops. Hard chromium plating is different from decorative chromium plating in that heavier and more exact thicknesses with close tolerances are required in the hard type of plating.

Another consumer reported that he can send his parts to Illinois and have them finished with a better quality of finish and at a lower price than is available in the Atlanta area.

A producer of peanut cookers who has parts manufactured in Louisiana also reported no solicitation of business on the part of local shops.

A local foundry producing aluminum castings complained of defective chromium plating on aluminum and high costs of finishing. The plating of chromium on aluminum is a relatively recent development, and there is not a single shop in the area which can satisfactorily produce such a finish. This consumer is contemplating setting up his own plating department.

A producer of time-clocks also complained of defective chromium plating and high costs. At the time of the survey, this consumer had his plating done by Atlanta shops but was looking for another source.

Another consumer, a manufacturer of saws, reported a large consumption of chromium plating but is changing over entirely to the use of stainless steel. This company also complained of peeling of the finishing, slow service, and high prices charged by local concerns.

The quality and costs of chromium finishing by Atlanta shops forced a consumer to have his finishing done in North Carolina. Furthermore, he reported that he may be priced out of the chromium market due to increasing finishing costs.

A large consumer of chromium plating also reported defective quality and high costs of Atlanta shops. A portion of his plating requirements is done in Atlanta, but the bulk is produced elsewhere. This company has plating done as far north as Connecticut. Other sources used are New York, Illinois, and Ohio. Another reason why this company uses outside sources is the fact that Atlanta shops cannot handle the complete job, due to lack of proper equipment.

A producer of tools and dies stated that hard chromium plating cannot be obtained satisfactorily in this area. At the present the requirements of this company are produced in New Jersey. The company, however, would have such plating done locally if it were available with respect to price and quality.

Another company manufacturing furniture has found it cheaper to send parts for finishing to New York and return than to have the work done in Atlanta. The matter of quality is an important deciding factor.

Nickel

The food machinery producer mentioned above has its nickel plating done by Atlanta firms. However, when possible, changes are made in the design to avoid the use of nickel, since the price is too high.

Two other nickel plate consumers reported that they will use stainless steel in 1950, due to poor quality and high costs of Atlanta finishing.

Silver and Gold

One company which produces special machinery has silver plating done in Pennsylvania, since the silver plating done by Atlanta shops costs too much and the quality is poor.

A company producing plastic articles reported that it would use a large amount of gold and silver plating if it were economical to do so. During the war when certain metals were scarce, a large amount of plating on plastics was done. This type of plating is a recent development, and no Atlanta shop does such work. This company is willing to underwrite a development program to enable a local plant to produce such finishes on plastics.

The above resume of opinion regarding metal finishing in the Atlanta area reveals that the chief faults of the electro-metal finishing industry concern the poor quality of the finishing and the high cost. In the latter instance, it would seem that few plants are competent to estimate finishing costs or are aware that work often can be done cheaper and better in more remote areas. This, in spite of the facts shown earlier in this chapter,

that the available local market for electro-metal finishing is very large, only a small part of which is allocated to local industry.

In sharp contrast to the increasing proportion of Atlanta consumption of finishing produced elsewhere is the small amount sold by Atlanta shops to other centers. The job shops reported that about one-half of their total output is sold to Atlanta consumers and the other half to consumers outside of Atlanta. Since the aggregate volume of purchases reported by Atlanta consumers from Atlanta shops is approximately \$60,000, the shipments out of the area should also total \$55,000 to \$60,000. Most of these shipments, according to the shops, naturally go to cities in the southeastern states.

When it is realized that this business comes in for less than top-quality work at high prices and without progressive sales effort, the amounts which could be exported to other centers under proper techniques of production with good merchandising must be many times more.

CHAPTER IV

TRENDS IN CONSUMPTION

The expansion of the electro-metal finishing industry in the Atlanta market is indicated by increases in the consumption of metals in practically all lines. Since aggregate figures or trends for the industry as a whole do not reveal the true nature or character of this expansion, it is better to show the trends in volume of metal consumed with respect to each type of finishing separately. The trends of metals consumed may also be considered in comparison with the dollar volume of their respective kinds of finishing done as shown in Tables IV and V.

Nickel

The amount of nickel consumed in the Atlanta area (primarily for electroplating purposes) has increased from 6,000 pounds in 1940 to over 21,000 pounds in 1948. The consumption of this metal was about equally divided between job shops and shops doing plating for their own requirements. Chart 2 shows the trend in consumption of nickel from 1940 to 1949. As noted on the chart, the data for 1949 are estimates by management.

Chromium

Chromium has also shown increases in consumption since the war, although its increases have not been as great as those for nickel. The trend in chrome consumption, expressed in terms of chromic acid, is shown in Chart 3.

Chromic acid consumption increased from about 5,000 pounds in 1940,

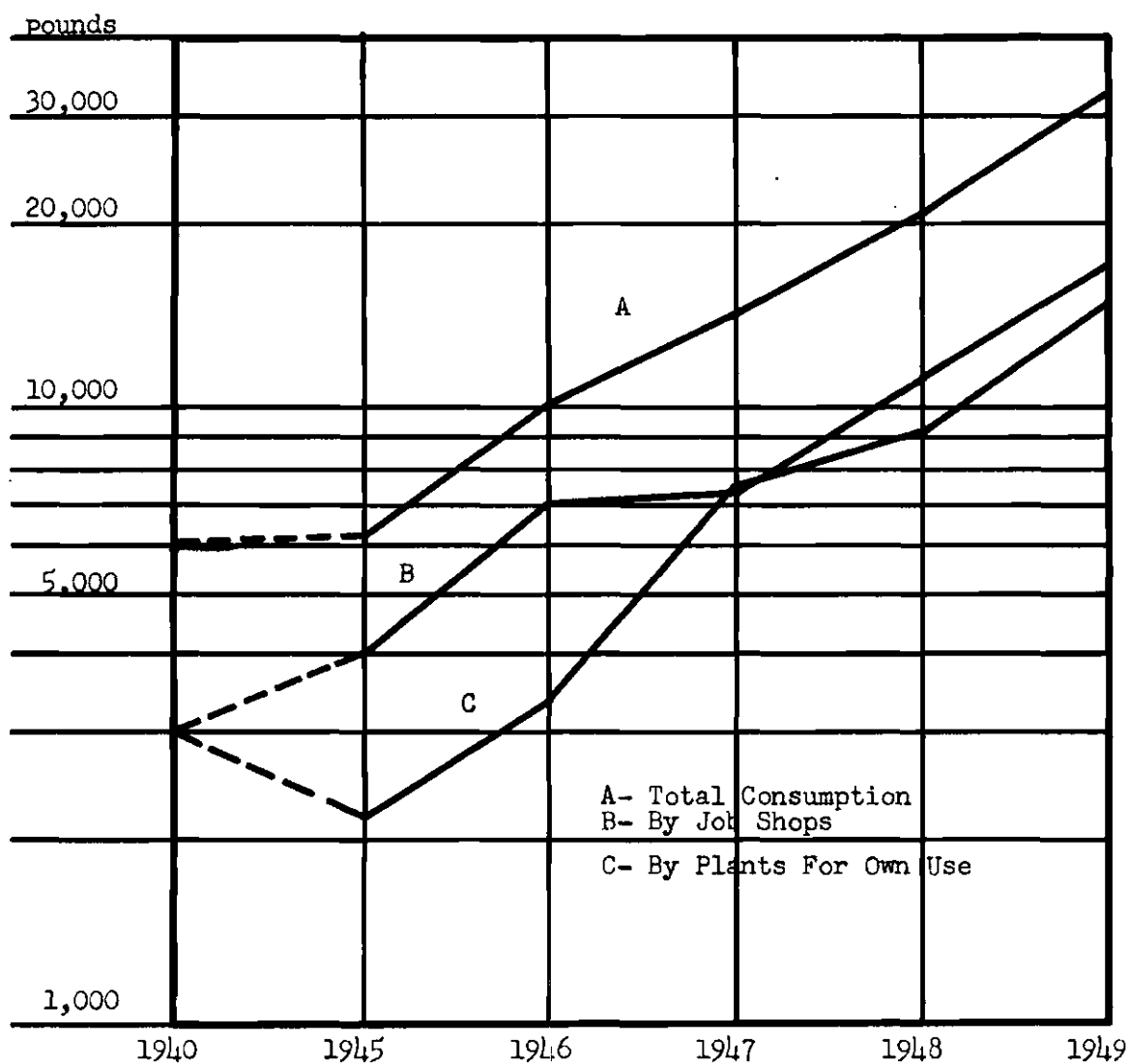


Chart 2

Pounds of Nickel Consumed by Electro-Metal Finishing Plants
in Atlanta

1949 Data - Estimates by Management

to a peak of approximately 15,000 pounds in 1945, and has decreased to an average consumption of roughly 10,000 pounds per year since. As mentioned before, nickel is used as a base plate for chrome finishes, and the graph for the consumption of nickel should follow much the same pattern as that for chromium. But since the graph, Chart 2, for nickel shows a greater increase than that for chromium, the conclusion is that the difference is due to a much greater expansion of the nickel plating business than that of chrome.

Copper

Since copper is used as a base plate on ferrous materials, preparatory to nickel and chromium finishing, data on the consumption of this element should parallel increases in nickel and chromium finishing of ferrous objects. That this parallel does exist is shown by a comparison of Chart 4 for copper consumption with Charts 2 and 3 for nickel and chrome, respectively. The total consumption of copper in the Atlanta rose from about 5,000 pounds in 1940 to over 14,000 pounds in 1948.

Cadmium

The consumption of cadmium is shown in Chart 5. There was an increase from about 5,000 pounds in 1940 to about 18,000 pounds in 1945, which was probably due to the wartime demand. A sharp decrease to 11,500 pounds occurred in 1946 and still lower in 1947, which can be attributed in part to the tight market and unavailability of the metal. However, there was another increase in 1948 to about 16,000 pounds. Estimates by management indicate a probable drop in 1949, due to the greater availability and

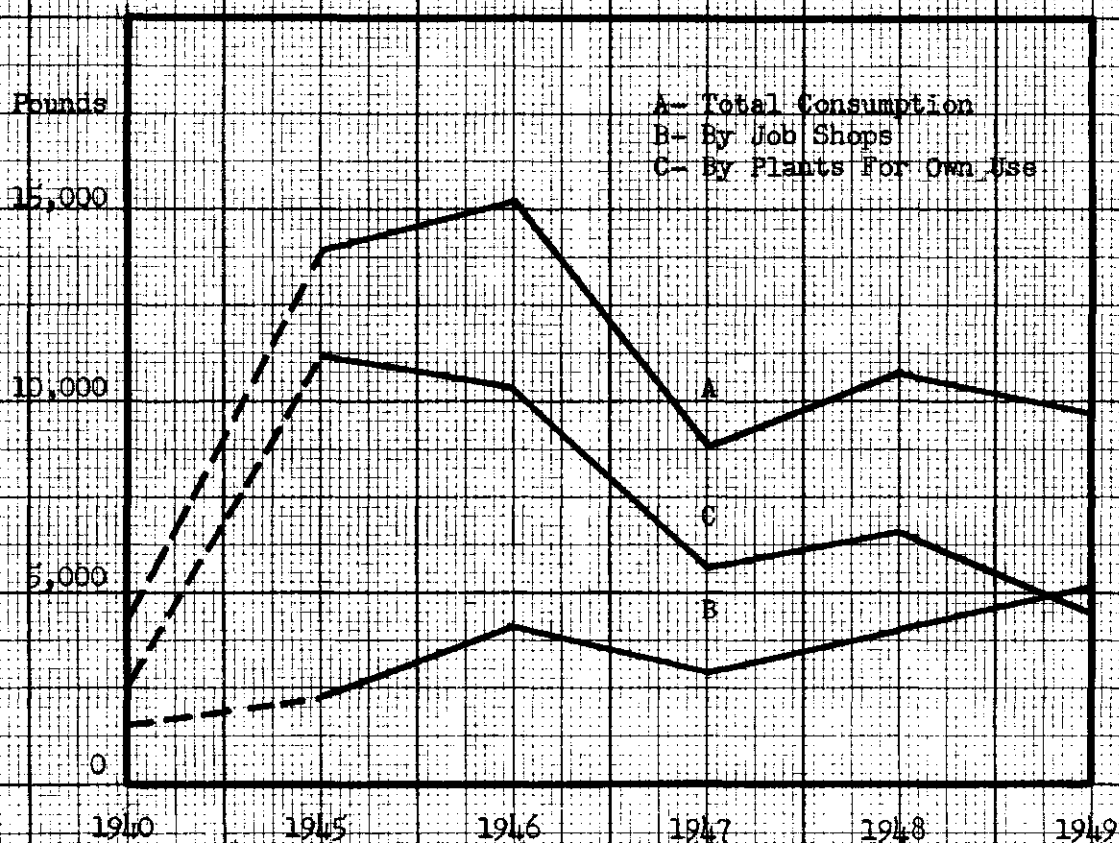


Chart 3

Pounds of Chromic Acid Consumed by Electro-Metal Finishing

Plants in Atlanta

1949 Data - Estimates by Management

Pounds
20,000

15,000

10,000

5,000

0

A- Total Consumption
B- By Job Shops
C- By Plants For Own Use

1940

1945

1946

1947

1948

1949

Chart 4

Pounds of Copper Consumed by Electro-Metal Finishing Plants
in Atlanta

1949 Data - Estimated by Management

lower price of zinc, a competitive finish, and the higher cost of cadmium.

(See Chart 6 for the increasing use of zinc during the post-war years.)

Chart 5 further shows that nearly all cadmium plating is done in plants for their own consumption. Job shops show no trend with regard to the use of this metal.

Zinc

Except in 1946, when the consumption of zinc decreased appreciably, the use of this metal expanded throughout the period studied. It is quite probable that the increased use of zinc was due to the higher price of cadmium, since cadmium and zinc finishes are competitive. (Chart 6)

Tin

There are three plants in the area which reported doing tin finishing. Two of them use the electro-deposition process, and the third uses the dipping method. The two using the plating process began operations since 1945.

The consumption of tin for plating purposes in 1948 approximated 11,000 pounds and is due largely to the demand for plating refrigerator parts and reconditioning airplane items. The estimated demand of about 5,500 pounds of tin for plating in 1949 is only about one-third of the demand in 1946.

Silver and Gold

Silver plating is primarily a specialty business. It is used for ornamental hardware (e.g., caskets) , picture frames, refinishing silver plate, electrical contact points, etc. One airline uses silver in plating

Pounds

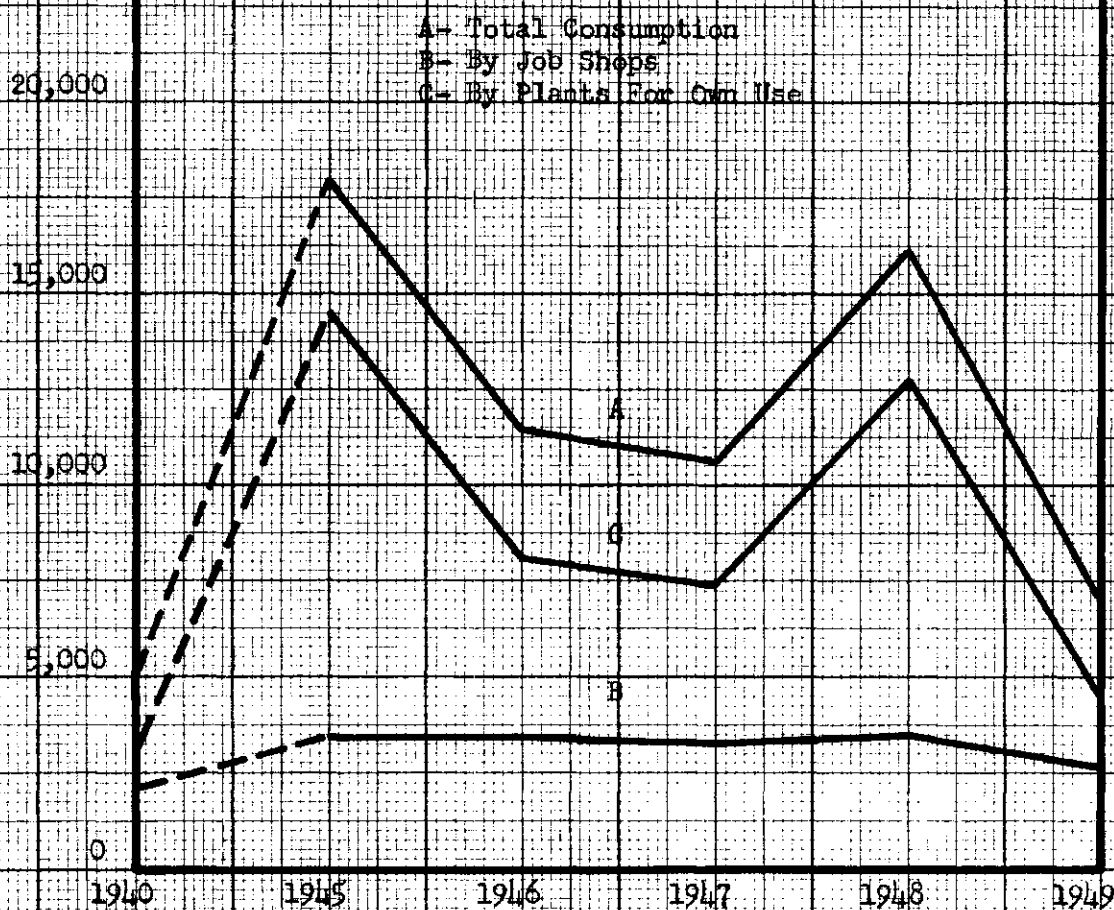


Chart 5

Pounds of Cadmium Consumed by Electro-Metal Finishing Plants
in Atlanta

1949 Data - Estimates by Management

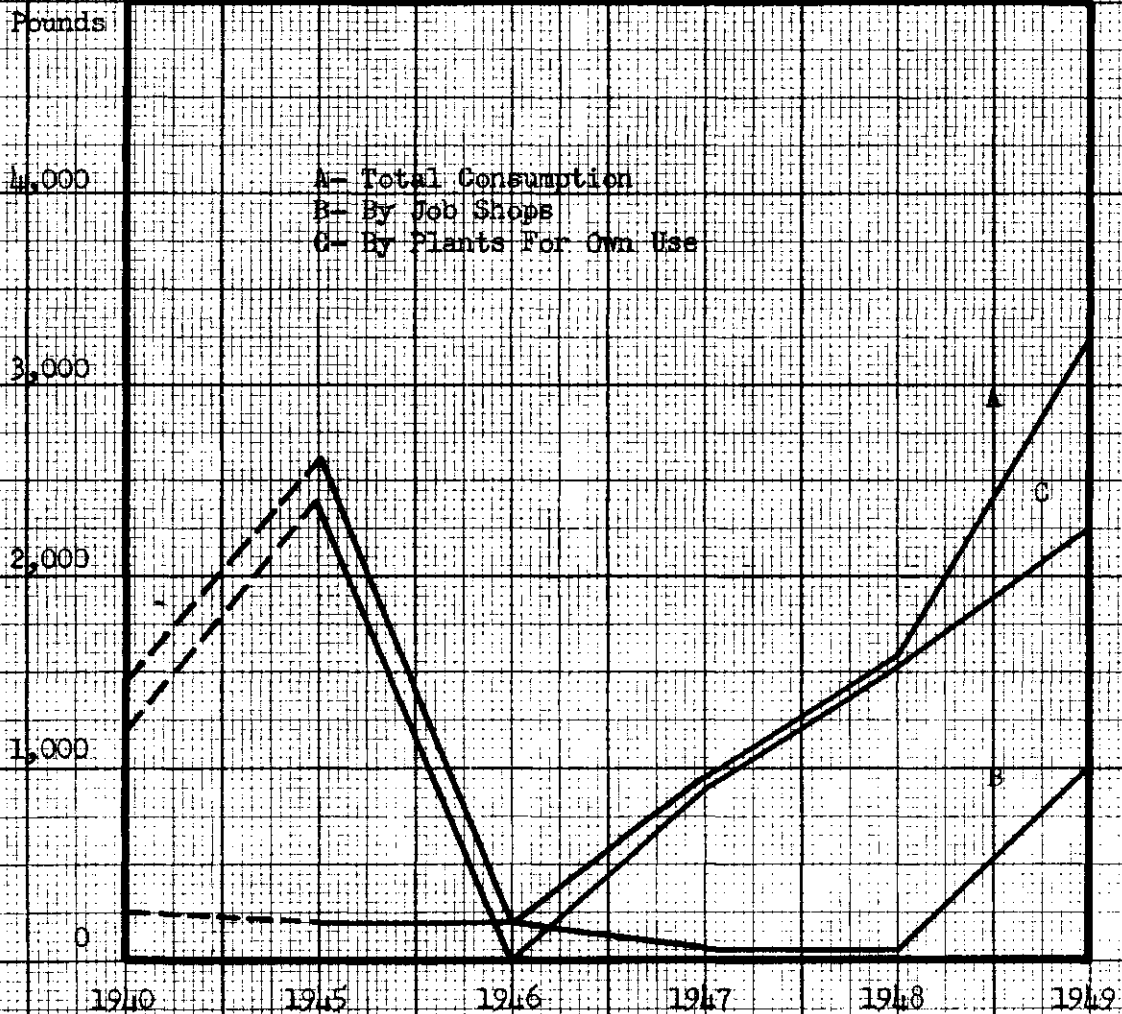


Chart 6

Pounds of Zinc Consumed by Electro-Metal Finishing Plants
in Atlanta

1949 Data - Estimates by Management

EUGENE DIETZEN CO NO. 346 B

airplane parts. The volume for the industry as a whole has shown consistent increases since 1940, in which year the consumption was only about 2,400 troy ounces. In 1946, the consumption was about 8,000 troy ounces, and in 1948, it increased further to approximately 13,000 ounces. Practically all industrial silver plating is done in the shops of two companies which plate for their own shop use.

Gold plating is of minor importance in this area. In fact, the entire consumption reported for 1948 was only about one hundred and seventy troy ounces.

Anodizing

Although anodizing is extensively used, no data could be obtained showing the amounts of electrical energy or of chromic or sulfuric acid consumed in the process. As mentioned elsewhere, it is believed that, with the increasing use of aluminum, anodizing will become an increasingly important finish from the viewpoint of both utilitarian and show purposes.

CHAPTER V

CONCLUSIONS

The market for electro-metal finishing in the Atlanta area has experienced a phenomenal expansion during the period covered by this thesis. Even omitting the volume produced by firms for their consumption, for which no accurate values could be obtained, the purchases by Atlanta firms from shops within the area plus that purchased from other cities increased from approximately \$16,000 in 1940 to slightly over \$200,000 in 1948 alone. Undoubtedly, if figures were available for production by firms for their own use, the total would have been far greater.

In considering the importance of this volume with respect to the future possibilities for expanding the plating industry in Atlanta, a deciding factor should be the fact that of the \$200,000 of business purchased in 1948, only about \$60,000, or approximately thirty percent went to Atlanta shops. The remaining seventy percent went to cities elsewhere. When the \$143,000 purchased in 1948 from other cities is augmented by the amount not bought, but done by plants for their own use, a large part of which could possibly be available for local shops if they were equipped to handle the business, the conclusion appears well justified that, even after discounting the business which local job shops could undoubtedly receive from consumers in other localities, there is ample demand for further expansion in the electro-metal finishing industry in Atlanta.

To get this business, however, the job-shop industry would have to make important changes in its present character and status. Some of these changes are brought out in representations from consumers in Chapter III.

They will have to install modernized equipment and processes for faster and top quality work in order to achieve lower costs if they are to meet competition. Modern systems of cost accounting, long overdue, must also be installed. Adequately trained personnel must be employed if local producers are to keep abreast with latest techniques and processes.

Since several consuming firms reported they were never even solicited by the job shops for business, it appears that these shops are without the technique or means to market their product, even if all other problems were solved. It will, therefore, be necessary for shops, if they are really to sell the Atlanta market and the markets of other cities which would doubtless be open to them, to institute not only more aggressive but also more progressive methods and policies in their sales promotions.

With the adoption of these proposed changes and improvements there appears little reason why the job-shop finishing industry in Atlanta should not have possibilities for important expansion.

APPENDIX

FORM A

A Survey of the Atlanta Market for Industrial Metal Finishing

Name of Company _____ Date _____
Address _____ Person Interviewed (Title) _____
Year Started _____ Product _____

Size of Plant or Metal Finishing Department						
	1940	'45	'46	'47	'48	'49
Number of employees						
Male						
Female						
Technically trained						
Man-Hours						

Is the metal finishing a part of an overall process? Yes No
Has the physical size of the plant or department changed much since 1940?
How?

Capacity of Plant or Department	1940	'45	'46	'47	'48	'49
Operated Capacity-%						
KWH Used						
Chemicals Used:	*****					
Cadmium-Lbs.						
Chromic Acid-Lbs.						
Copper-Lbs.						
Nickel-Lbs.						
Zinc-Lbs.						
Sulfuric Acid-						
Pickling-						
Cleaning-						
Other()						
Other()						

Type of Finishing and Dollar Volume of Metal Finishing (Check Types)		1940	'45	'46	'47	'48	'49
Aluminizing or							
Anodizing							
Cadmium							
Chromium							
Copper							
Nickel							
Zinc							
Other(}						
Other(

FORM B

A Survey of the Atlanta Market for Industrial Metal Finishing

Name of Company _____ Date _____
 Address _____ Person Interviewed (Title) _____
 Year Started _____ Product _____

Do you buy or have industrial metal finishing done in other plants?

Yes ___ No ___ If yes, what amount from Atlanta plants?

Type of finishing 1940 1945 1948

Anodizing or *****

Aluminizing _____

Cadmium _____

Chromium _____

Copper _____

Nickel _____

Zinc _____

Other() _____

Other() _____

Amount from plants in other states:

Type of finishing 1940 1945 1948

Anodizing or *****

Aluminizing _____

Cadmium _____

Chromium _____

Copper _____

Nickel _____

Zinc _____

Other() _____

Other() _____

State

Reason

Remarks