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Technical service as a marketing tool for industrial goods

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BOSTON UNIVERSITY

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THESIS

Technical Service as a Marketing Tool for Industrial Goods

by

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CHAPTER I

INTRODUCTION

A. Importance and Growth of Technical Service

A technical service representative finds himself in a rather unique position. His everyday responsibilities call for him to work in his customer's plant, side by side with their technical men, fully exposed to their operations and processes. This confidence on the part of the customer binds the representative to the inseparable duty of security and, in a way, makes him a man of many allegiances. For his company he must develop and maintain technical leadership, for his customers he must furnish the highest quality service to enable them to carry on their operations quickly and efficiently, and for himself, he must retain the tact and diplomacy which will give satisfaction in a job well done. The tremendous growth of technical services in the past thirty years is a tribute both to the far-sighted, progressive management in industry, and to the technical serviceman as an individual. The technical serviceman is the bridge between the marketplace and the laboratory. Through the medium of ideas he serves both his company and its customers and, in so doing, serves himself.

The increase in the use of technical research and development has been one of the striking characteristics of American industry in the past 20-25 years. Although it

is hard to measure this growth precisely, a general indication is provided by the following figures:

The number of professional and technical persons employed in industrial research has increased from less than 10,000 in 1920 to over 95,000 in 1946, an 850% increase, while the total number of persons employed in all manufacturing in the United States increased roughly 164 per cent.*

Expenditures for industrial research grew from \$116 million in 1930 to approximately \$500 million in 1947, an increase of 330%. In the same period the total value added by manufacture increased by only 203 per cent.**

Although some of the larger concerns engage in pure or fundamental research in which the objective is to uncover new knowledge, by far the greatest industrial use of technical research is in the application of existing knowledge to development of new products and processes. Thus technical research has been responsible for many new materials, new processes, and new applications of materials and techniques. The rate of technological change is accelerating, and technical research is unquestionably the most basic force affecting the product mix of the individual company. These developments, along with the seemingly unquenchable appetite of the American consumer, have brought much prosperity during this mass-production era. These rapid changes in technological advancements have made it difficult for the management of a plant to

*39, p.23

** 40, p.10

keep abreast of the progress in manufacturing methods and machinery except by the use of the organization of the vendors. It was in this era that technical service grew and developed. The single-product, family-held, secrecy-bound factories were no more.

B. Definitions

The traditional approach when investigating a concept, whether of business or of science, is to define the concept. However, this presents a problem when it comes to technical service, for there are no adequate definitions. Whereas the nebulous area of sales promotion is referred to as the region between sales and advertising, technical service is sometimes spoken of as being somewhere between sales and engineering. It would be worthwhile at this time to define a few of the terms found in the title of this thesis as given by the Definitions Committee of the American Marketing Association:*

Services---Activities or anticipated satisfactions which are offered for sale either as such or in connection with the sale of goods.

Marketing--The performance of business activities that direct the flow of goods and services from producer to consumer or user.

Industrial Goods--Goods which are destined for use in producing other goods or rendering services as contrasted with goods destined to be sold to the ultimate consumer.

* 38, p.202 - 217

In its widest definition "Technical Service" covers all territory of a technical nature lying between the research department and the customer's plant. In this grandiose conception, technical service operates the development and customer service laboratory, services the technical needs of the production division, and aids the sales department in showing the customer how to use the products.

Such a broad interpretation is of course rare. It is much more common for the service group to serve as liaison between the technical groups and the company sales force. In some cases the service group is in the sales department and does direct sales work; in other cases it operates as a right hand to the sales department, making customer contacts at the salesmen's request and often in their presence. In still other companies the technical service men are under different management than the sales group, and operate quite independently and sometimes in conflict.

Technical service is quite often a misused term, and a myriad of names are found in industry today, for this department. Some of these are technical service, customer service, customer engineering, service department, sales engineering, technical service engineering, and others. The Celanese Corporation has a Customer Service Group

in their Fibers Division, a Technical Service Engineering Group in their Chemical Division, and an Engineering Design Group in their Plastics Division. Other terms found in industry are Engineering Service, Sales and Service group, Field Engineering group, Technical Service and Development Sections, Product Service, Sales and Systems Services, and Services Engineers.

Some of these terms are synonymous in basic functions, depending on the company and the industry. Other differ in concept or at best encompass only a fringe or overlapping of duties. The American Marketing Association Definitions Committee gives the following examples to support its definition of services which is stated above. Some of these are amusements, hotel service, electric service, transportation, the services of barber shops and beauty shops, repair and maintenance service, and the work of credit rating bureaus. Other examples are credit extension, advice and help of salespeople, and delivery by which the seller serves the convenience of his customers. In the Tennessee Eastman Company, service, for the most part a function of sales, includes direct correspondence with customers, publications, visual aids, exhibits, and, in the field, assistance of technical service representatives and photospecialists. Library services fall under the Bell Telephone Company's concept of service functions while the Avco Company offers laboratory facilities to its customers.

C. Goal and Scope of Study

This brief coverage gives an idea of the widely extended application of technical services in industry. However, the scope of this study will deal with technical services as applied to industrial goods, and the general area within which the marketer of industrial goods must make and administer policy with respect to service. Among them are co-operation with the customer in carrying on his developmental work; supplying him with information about the trade, about market conditions, and about technical developments in his industry; the making of suggestions for the improvement of his operations or the reduction of his costs; engineering service in planning and preparing specifications, installation of machines and equipment, especially when they are highly complex and technical; training the buyer's employees in the use of the product (usually machinery and equipment;) providing the repair and maintenance service; and providing help in a variety of emergency situations which develop from time to time in any sort of operation.

Despite the tremendous growth of Technical Service, there is a dearth of information found on this subject in journals, periodicals, and even less in textbooks. This project will be a modest attempt to consolidate available information on the function of technical service

in marketing industrial goods, and to investigate the use of technical service in different industries. Interviews and correspondence with executives at various levels of management in varied industries as well as the author's own experience during two years as a Technical Service Representative supplied the information on which this thesis is based.

Field interviews were conducted with representatives of the electronics, chemical, shoe, and office equipment industries as well as a distributor of electric motors and equipment. These companies are listed in the bibliography and the questionnaire used during these visits is found in the appendix. Primary information was obtained from the E. I. DuPont de Nemours and Company Inc., United Shoe Manufacturing Corporation, Raytheon Manufacturing Company, Pitney-Bowes, Inc, and several other companies. Reference is made to these interviews in the body of the thesis whenever permitted to do so by the company interviewed. Several companies did not wish to be identified, but granted permission to use the information obtained during the interview.

CHAPTER II

POLICIES AND OBJECTIVES OF TECHNICAL SERVICE

A. Why Technical Service

Many industrial products require some degree of technical service in the selling program. For products which are highly technical or for markets which require individualized application of products to technical production methods, the need may best be met by hiring salesmen with a technical education and by training them in the particular problems faced in selling the company's line. When the need for technical or less technical knowledge is required for satisfactory selling, the use of sales engineers becomes an expensive means of meeting this problem. It is very common, therefore, to have technical service staffs who are on call at the request of salesmen and customers. The size and competence of such a technical service staff can be an important resource to a company in considering product lines which could be handled successfully by the existing technical staff, or which they might handle if given suitable training. The history of this staff and its present capacity in relation to the demands made upon it are important factors in assessing its value to the company. As with most of the aspects of a manufacturing enterprise which are being considered in

this appraisal process, comparison with the technical service offered to customers by competitive concerns may prove meaningful.

An increasing demand for a product results in a great deal of competition among manufacturers of this product. This competition considerably aided the growth of product design.* Competitors became aware of the fact that only through efficient design of their product could they make it more appealing to customers. At first functional design was of prime concern but, gradually, style design grew in importance so that today these two, together with production design, are of equal importance. This development of product design in an attempt to satisfy the more sophisticated wants of the American consumer served to intensify the need for technical service staffs on the part of the manufacturer in his dealings with his customers.

B. Promotional and Protective Aspects of Service

Service work and warranties are alike in that the objectives of the manufacturer are in part promotional, in part protective.** But the protective feature differs markedly. In the use of warranties the manufacturer attempts to protect himself against unreasonable demands

* 9, p.121

** 7, p.271

on the part of the purchaser. Through provisions for service work he protects himself primarily against dissatisfaction on the part of the user and word-of-mouth advertising to the effect that the manufacturer's product is not an acceptable one and that it does not give the results which the purchaser was assured that it would give at the time of purchase. The manufacturer simply cannot afford to have his products poorly adapted to the user's needs, poorly installed, ineffectively used by operators, and frequently out of repair. From a long-range point of view a lack of effective service is equivalent to business suicide. But manufacturers have not been loath to institute the necessary service work. Their chief difficulties have appeared in its administration and in keeping service within due bounds. Because it has been used as a promotional weapon and, furthermore, because it is a costly activity, manufacturers have been prone to use it too much and without adequate payment on the part of the product user. More will be said on this later. First, it is necessary to direct our attention more specifically to the promotional aspects of service.

As a promotional weapon, the manufacturer assures the potential user that he, the manufacturer, has both the will and the way to see that the product gives the expected utility. The manufacturer emphasizes through

advertising and in conversations with the prospective buyers his extensive service organization with trained specialists, perhaps engineers, chemists, packaging experts, or designers who may be placed at the buyers call to solve their particular problems. If, for instance, a prospect should say that he could not use a product such as cellophane or metal foil for packaging material because there was no machine to handle it properly, the manufacturer of such material, through his representative, would probably say that the company's engineering specialists would aid him in finding the correct machine or in adapting his present machines to use the new material. The prospective buyer may be keenly aware of his own inability to cope with the problems which are likely to arise, particularly in connection with new technical products. He is likewise aware of the risk involved and needs assurance. A developed organization for service work and successful experiences of having worked effectively with other concerns in the past create a strong impression in the mind of the buyer. The likely result is additional confidence in the seller. At times the promotional appeal in service is so successful that the product to which the service may apply is largely removed from price competition. The buyer may be made to believe that he is getting more by way of utility even though he pays more initially for

one manufacturer's product than for another's. This may well be the fact of the matter, for he is actually purchasing what the product will do rather than so much physical material.

C. Nature of Technical Service

The above comments suggest that the service problem varies according to numerous factors. The most evident of these is the need for service depending on the nature of the product. The amount of service work is likely to vary directly with the complexity or technicality of a product. Highly technical products are likely to need all types of service. Furthermore, more service is needed if the product has to be varied to meet the buyer's requirements, that is, if it is special-order equipment rather than standardized units. Some products are more fragile and subject to abuse than others, and thus require more attention. New products with which the buyer is not familiar or products which are being changed frequently require more service work of all types. Although great care may be used, some products may reach the final consumer which contain imperfections in design and thus give trouble. Many automobile users, for instance, hesitate to purchase a model soon after it is introduced, for they fear that something has been overlooked and, as a result, that they will be subjected to inconvenience and expenses. The

introduction of products to the market for the first time enhances the problems of adaptation, installation and demonstration. Furthermore these pioneering efforts increase the likelihood of imperfections and thus result in a greater need for afterservice.

Both the type of buyer and the nature of the market affect the service problem. Large buyers, such as railroads or mining companies, may accept the responsibility for service and thus, to a certain extent, relieve the manufacturer. They are informed buyers, they purchase in large quantities, and they are likely to maintain their own repair shops. A mining company may purchase pneumatic drilling machines in lots of fifty or more, whereas a small city or company may purchase one at a time for breaking up concrete or for use in excavation. A mining company would probably carry a complete stock of service parts and would probably repair the machines in its own shops. Thus the manufacturer's service problem would be simplified. In contrast, some provision would have to be made for servicing individual machines, and this consists of making available repair stocks and possibly individuals who are trained to do the necessary work.

The contrast is even more apparent when geographical market factors are considered. The market for products which require technical service may be concentrated or

widely dispersed. If a product is sold only to one industry and that industry happens to be concentrated in one or a few areas, the servicing problem is less difficult. The mining of nonferrous metals and the production of automobiles are cases in point, although in the latter instance there is more dispersion of manufacturing activity than there was formerly. The market is widely scattered for products such as computing machines or small pneumatic tools. Small business enterprises, institutions of all sorts, and governmental units may be users of such equipment and, because of their widely dispersed locations, the service problem becomes much more complicated than when the users are more concentrated. When the market for producers' goods is so widely scattered, it takes on the characteristics of the market for consumers' goods both in sale and in service. Passenger automobiles and electric refrigerators, for instance, are usually purchased singly, the buyer is not technically informed and he is usually unable to make other than minor repairs. These conditions enhance the service problem. Standardization of products, lack of technicality or complexity in products, adaptation to demands of particular consumers, and a preponderance of informed buyers and users simplify the service problem.

D. Objectives

When we consider the objectives of Technical Service, we must consider the responsibilities of the Technical staff to the parent company and vice versa. What does the manufacturer expect from his Technical Service people, or to put it another way, why does the manufacturer need such a strong Technical Service section? The operating of a Technical Service Department requires a great expense each year. This expense would not be permitted unless the company was assured that it would receive a satisfactory return on this investment. Therefore, Technical Service must, and does, contribute to increased sales. The goal of all Technical Service work has this one goal: to promote the sale of the company's products. Some may feel that this is a different goal than first visualized for Technical Service work. We must never lose sight of the fact that Technical Service is a service unit. A service unit will aid the customer with the ultimate aim of improving the customer's operation or the consumer's acceptance of the manufacturer's products. This results in increased sales. This then is the responsibility of Technical Service personnel to management.

There is one basic policy of all technical service assistance. The manufacturer cannot guarantee the customer complete success and a profit by carrying out his recommended

procedures. All DuPont Company technical bulletins include the following statement:*

"We believe this information is the best currently available on the subject. It is offered as a possible helpful suggestion in experimentation you may care to undertake along these lines. It is subject to revision as additional knowledge and experience are gained. DuPont makes no guarantee of results and assumes no obligation or liability whatsoever in connection with this information. This publication is not a license to operate under, or intended to suggest infringement of, any existing patents."

The customers are in business to make a profit, and must also bear whatever risk is involved. They must make the decision regarding the processing of their materials.

E. Other Considerations

The question may arise as to whether the technical service group should be kept in the background relative to the salesmen, or whether it should occupy a position of parallel importance. Companies adopting the first view do it because they recognize that in the eyes of their customer, the salesman is the company. They pick salesmen with outstanding qualifications, men who can speak for their company without the necessity of referring to the home office except for an occasional interpretation of policy. Although these men still need a steady supply of technical information, it seems that their position is better maintained if their technical advisors are associated closely with them, and are not operating from a separate division of the company.

Some companies feel strongly that the technical service men should be employees of the development laboratory. This type of organization provides an opportunity for the laboratory workers to gain actual field experience and to do a better job because of their broadened perspective. An important consideration to remember here, however, is that any man when operating in the field is considered a company representative by outsiders. If an inexperienced laboratory worker is a bit naive and makes promises not consistent with company policy, he may place the sales department in an embarrassing position.

Information as to the nature of technical service work, its development in recent years, and a comprehension of the administrative problems which have emerged can be secured in a realistic way from a statement which was quoted in a bulletin of the American Management Association.* This statement was made by a manufacturer of turret lathes, a type of machine which is usually sold with special tools and attachments. It is as follows:

Free service has gone much farther than we would like, by gradual degrees and over a period of the last 10 or 12 years. It has been so gradual that until very recent years, we have hardly realized what it meant to us in expense. In order to give you a little background, I want to describe briefly the process we follow in making a sale.

* 10, pp. 6-7

First, our salesman digs up a prospect. That is to say, he finds, in a customer's plant, room for a new or better machine to do some particular job. While the salesman himself is a trained engineer capable of discussing the job intelligently from a production standpoint, and in some cases carrying it through with all of the engineering steps, nevertheless, in many cases we are obliged to send from our main office an expert production engineer who secures all of the facts concerning the present production, lays out a new tooling arrangement, recommends the proper machine, calculates the customer's new production, and then in not a few cases is obliged to figure the return to the customer on the new investment required to purchase the new equipment. In many cases in the last five years this process, which began as a simple recommendation, has evolved into an exhaustive survey of the customer's entire facilities, occupying in certain cases many days of time of a highly paid, highly trained engineer. Such "surveys," I might say, involve very considerable cost to us. They are returned to the customer in nicely bound typewritten reports covering from a few to many pages, and accompanied by blue prints of specially prepared sketches, computed data, etc.

From there on, the process of securing an order is by means of emphasis applied by the salesman to the engineering, financial, or whatever other phase of the proposition appears to make the greatest appeal to the customer. All of the above you will say is only a highly developed process of selling, but, nevertheless, you must admit it is a very extended form of service that we were not obliged to furnish if we go back in thought ten or fifteen years.

The next form of service that is bothersome to us is: having secured an order, we build up the material composed of a standard machine as a rule and specially designed tools. All of this material has to be built against a guarantee of production. In the old days, the customer would use his own judgment.....Today the entire burden of performance is thrown on us. After we have made our production tests as best we can with a small amount of material on our own test floor, the machine is shipped and installed in the customer's plant,

and followed by our demonstrator. There comes the greatest item of expense in this division of free service.

Our demonstrator is, as a rule, an unusually well trained operator and well informed shop man. He goes at our expense to the customer's plant and remains as long as it is necessary to secure the production originally guaranteed on the sales proposal. Sometimes it involves taking the customer's green operator and breaking him in, training him to become an expert turret lathe operator. Again one might say that this process is all in line with the perfect mania for service that has developed over the past few years in selling everything from groceries to locomotives. Nevertheless, it is one of the items that piles up a tremendous service charge.

The third source of service cost is the one that is most serious and the one which we feel is most unjust. In addition to the demonstrating work described above, our demonstrating crew, in many cases our salesmen, and in still further cases, service men sent out from our Works Production Department, are called upon to service our machines whenever they meet with a mishap, no matter whose fault the failure may be. All products are sold with a guarantee against faulty material and workmanship, and against the above-mentioned production estimate. Having performed all of the acts to which we have agreed in the sales transaction, it has come to be that we are called upon six months or a year later to send our man to discover what is wrong and correct the difficulty, and from six months up to a period covering several years from the time the machine is installed and in satisfactory operation, we have some of the most ridiculous cases you can imagine.

This is a realistic picture of the service problem as seen by one sales executive. Although there may be a small measure of exaggeration in its implications, still it is a reasonably faithful portrayal of the attitude of many manufacturers toward service, particularly of those who are struggling with its many problems.

CHAPTER III

CLASSIFICATION OF TECHNICAL SERVICE

A. Time Sequence

With the above discussion in mind, we shall now discuss a more formal classification of service work. The basis of this classification is the objective to be achieved. It will be observed, likewise, that it follows a definite time sequence. The classification is as follows:

Survey Work:

The objective in this instance is to determine the needs of the buyer in regard to a certain type of product. For instance, prior to the purchase of turret lathes, as discussed in the previous section, it was necessary to make a detailed study of the particular needs for such a product within the buyer's plant. As both plants and other conditions of use differ markedly, the problem of each prospective buyer must be studied carefully, and then the equipment must be adapted to solve the problems involved. Survey work is the merchandising activity for technical products. It is frequently called "sales" service, in contrast to other types, which are designated as "product" service.

Installation:

The objective of installation is to see that a product is properly placed and ready for use by the buyers. This is of particular importance for large special-order

equipment. A conveyor system furnishes an excellent example. If it is properly installed, it will operate with little difficulty over extended periods of time, but with faulty installation a system will give constant trouble. The manufacturer, frequently, prefers to sell such equipment completely installed.

Demonstration:

The objective of demonstration is to train the buyer or his employees in the use of a product. This is likely to take place after installation. Usually buyers wish to see what a product will do by way of performance prior to purchase. But demonstration to induce purchase should not be considered a part of service work unless the information given at that time contributes to more effective product use later.

After-service:

The objective of after-service is to aid the buyer if the product fails in performance. During the entire productive life of some products there is need for manufacturer and the user to keep in close contact. It is important that repair parts and expert repairmen be made available immediately when needed. Otherwise the purchaser of the industrial goods needing servicing may experience a forced cessation of production, and this interference with his operations is indeed bad public relations. There is no better or more familiar example of

this need than in the case of an automobile. Continuously available service is largely taken for granted, but it is the outgrowth of long experience and carefully formulated plans. The importance of such service is soon manifest if, through some administrative failure, it should function poorly.

From this discussion* it should be evident that service work goes much further than that provided for in warranties. Survey work precedes sale and much afterservice work is done subsequent to the termination of the time limitation stipulated in the warranty. The service work done as the direct outgrowth of the fact that users demand it under warranties is but a small part of the total. The manufacturer's need to create and maintain goodwill carries him much further by way of service than does the legal responsibility he assumes through warranties.

B. Service Related and Unrelated to the Product

There are types of services which are not universally required or which may be or appear to be readily divorced from the product. Let us examine the services which are not universally required. First comes the group of services that are of little, if any, economic value--no purchaser would pay for them knowingly--they exist because they are free, and someone else pays. Obviously all purchasers and vendors should unite to eliminate them. Second is the group of services which

practically all purchasers can perform for themselves more economically than the vendor can. But if the vendor performs them without charge, why should the purchaser weigh this question? Third, the group of services which some purchasers are in a position to perform for themselves economically, but which others are not. If the cost of this group is negligible it will not distort the average cost to include this item therein. In many cases, however, the true cost is material; consequently, there is every reason why those who receive the benefit of the service should pay for it indirectly.

Let us next turn to that type of service which may be readily divorced from the product. The first group of this division covers services in the form of studies of the prospective customer's problems, together with recommendations as to their solution. A physician would diagnose and prescribe. The medicine-product might be supplied by the physician or by a druggist. The physician collects for services regardless of results. A lawyer might take a case for a fee which would equal a certain percentage, plus expense, of the amount recovered, or he would agree to take nothing if he does not succeed. Should not the manufacturer be compensated for savings which he can demonstrate will result from his recommendations? The nature of the compensation might be securing an order for any machinery which might be

installed to effect the savings.

The second group covers services required in combining standard units into a composite equipment, or making layouts or performing other work associated with installation, or teaching operators how best to use the equipment. Such costs are seldom incidental, not always required and should be recognized as tangible service for which a reasonable bill should be rendered.

The third group are services which must be rendered by the vendor if the purchaser is to obtain the maximum benefit from his purchase. Sometimes these are incidental and are properly neglected. In many cases they are of importance and constitute a separate item for which a separate charge should be made.

C. Responsibilities of Technical Service

One of the largest chemical corporations which can afford the "luxury" of a large Technical Service Staff has assigned various and wide-spread responsibilities to this department. The following information was obtained from a personal interview with a manager of the Technical Service Department of this company. At his request the identity of the company will not be revealed but permission has been granted to use the information.*

Direct customer assistance occupies actually only one quarter of the manpower activities, with internal programs occupying the remaining time. The responsibilities of Technical Service for this chemical company are spelled out in the following ten points:

- (1) To set specifications for all products and their packages. These specifications assure uniformity, processability, and performance in the proper end uses.
- (2) Prescribe methods for determining if product meets specifications. These methods emphasize the product characteristics related to performance in the hands of the customers. All relationship to method of manufacture has been eliminated.
- (3) Technical Service establishes optimum processing conditions for our products. These conditions are developed for all products on all systems and in various blends. Technical service assists the customer when he takes on a new process or product particularly if a large continuing business rides on success with the initial shipment.
- (4) Evaluate our companies and competitive quality. In the very volatile market in which we find ourselves, a firm hand on competitive performance is essential. Direct Sales plays a major part in bringing competitive improvements and developments with samples to our attention.
- (5) Evaluate complaints and advise on claims.
- (6) Diagnose customers' problems. This area consists primarily of longer range aspects of determining areas of development which would contribute most to customers' progress. Establishing importance of improvements in mechanical quality, packaging and the like, come under this heading. Pinpointing technical problems in Merchandising programs is likewise done.

(7) Solve short-range problems.

Having diagnosed or defined customers' problems or a technical problem in a Merchandising effort, Technical Service is expected to handle those amenable to a short range approach. Those which are long-range problems are farmed out to research. In the terminology of the trade, Technical Service puts out the "small fires" while Research puts out the "large fires."

(8) Promotes new end-use technology on established products and processes.

Here the objective is to assist our customers in applying better methods of processing our products. In many cases, this technology comes from work by research. Technical Service takes these leads and proves them out on various types of commercial equipment to establish their practicability and to bring out any "bugs" in the process. We undertake the development work to overcome these "bugs" prior to broad commercial application. Our objective is, supporting Sales and Merchandising, to introduce this technology into the trade in a rapid and effective manner to broaden application of our products. One specific route to rapid and broad promotion of technology is the Technical Information Bulletin which constitutes a well-recognized contribution to our customer.

(9) Evaluate performance and uniformity of new products and solve short-range problems in their use. Where a new product comes along,

which is to go into existing end uses, we assist Merchandising in its evaluation by processing it into the end use involved. Processability and product uniformity are checked carefully and problems arising in the processing or in the end-use performance are taken on as development programs. If it is evident that major new technology will be required to use the new product, the problem is defined and turned over to research. This close tie-in with the new products work allows Technical Service to follow-through

effectively in servicing the product as it becomes commercial.

- (10) Develop leads to new end-use technology giving us a preferred position over competitors. A major objective of Technical Service is obtaining a preferred sales position for our company over competitors. The stakes here are high. Through looking broadly at the processing complexities, quality and yield headaches, and high cost items in a customer's operation, routes are indicated to economy and simplification which may be exploited through use of our product designed to meet the need.*

The above breakdown of responsibilities for Technical Service is unique for this particular company, but the area of responsibilities is present for any marketer of industrial goods. The delegation of these responsibilities-- whether to Product Design and Development groups, Research, Merchandising, Sales, Technical Service or elsewhere-- depends in part on the product or products of the company, the type and location of industry, and attitude of management.

D. Activity of Technical Service

The above discussion brought out Technical Service's relationship not only with direct customer problems but with the sales, merchandising, research and other departments in the internal organization of the company. The chemical company referred to in the above example has attempted to analyze the activity of Technical Service from the point of view of deployment of personnel.* They have

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arrived at four main categories into which the work may be divided:

1. Quality and Complaint Work

This includes definition of finished product specifications, competitive evaluations, and trade performance follow-up.

2. Field Service

Assistance to customers in first use of products or in operations on a product new to him.

3. Product Evaluation

Prove-out of product improvements, increased productivity, and cost reduction steps.

4. Development

Short range problem solving involving primarily adaption of existing technology to customer processing.

Each job taken on by Technical Service falls into one of these categories. Manpower deployment is then summarized by the category for purposes of analysis. At present the assignment of first line manpower by category of activity is as follows:

	Manpower (%)
Quality and Complaints	24
Field Service	30
Product Evaluation	22
Development	<u>24</u>
	100

An executive of this chemical company had the following to say concerning the activities of Technical Service:*

"We recognize that a level of activity on quality assessment versus earlier performance, customer expectation, and competitive level will remain an essential part of service. We realize, also, that complaints will be always with us. It is obvious, however, that the extent to which personnel can be placed in Product Evaluation and Development, as contrasted with Quality and Field Service work, will determine in a real measure the longer range vitality of the business, both domestic and foreign. Efforts are concentrated, therefore, on attaining a level of product uniformity and performance that will minimize the call for complaint follow-up, making personnel available from this category for the more productive areas. In addition, the development and publication of more effective information on processing of our products is assisting in decreasing the level of Field Service in favor of the latter two categories. We hope to continue to refine this approach as a tool for increased effectiveness in providing Technical Service to Sales.

In analyzing Technical Service activities, there are several additional comments which are characteristic of our business. In the first place, our activities have required a continuing increase in technical proficiency in specialized fields. Our representative must know as much about processing our product as the best man in the customer's organization in order to gain proper reception for his suggestions and ideas. This has resulted in commitment to specialization backed up by a training program to assist in its accomplishment. We have found, also, that with the diversity of technologies and dispersion of the textile industry, we can best provide the specialized technology from a single central location. This is especially true since our work, which, to a major extent is in the customers' mills, is backed up by our development programs on pilot equipment at our laboratories."

CHAPTER IV

ORGANIZATION AND ADMINISTRATION OF TECHNICAL SERVICE

A. Location of Technical Service Department

When a manufacturer of industrial goods needs to render considerable technical or engineering service in the course of his marketing work, a special unit of the company is usually set up to take charge of it.* There is no substantial agreement as to where such a technical service unit should be placed in the organization. In some firms it is an arm of the engineering department; in others, it belongs to the sales department; and in still others, it is a part of the development department.

There are logical reasons for each of these locations. The sales manager is likely to feel that he should have charge of the department so that the men doing technical service work will constantly be kept aware of the fact that its primary purpose is to make sales and create satisfied customers. He feels that unless the men who do this work are under his control, their outlook is liable to lack realism. On the other hand, the men who do this work must be technicians. The plant technical men must implement what they work out in the field. There is usually a fear on the part of the engineering executives that if the men who do this work are under the control of the sales

*2,p.246

department they will, in their anxiety to promote sales, promise features that cannot be delivered.

The location of the work in the development department probably represents a compromise of the issues between sales and engineering pointed out above. Its interests combine those of the other two; it is generally charged with the task of overseeing the commercial development of new products and new uses of existing products. There seems to be no spot in the organization into which this unit ideally fits and should probably be determined in each company on the basis of the nature and extent of the technical service work to be done, and the executive personalities involved.

When the work of the sort which is needed is not too complicated and does not require too much time, it is usually performed by the salesmen who in such a case are apt to be trained technicians. They may be supported by a technical service unit in the branch, or at the home office, to which they can refer problems and requests for information beyond their own ability to handle.

In many companies the technical service work is performed by a specialized group outside the sales department. This group may be an arm of the engineering department. When the work is organized in this way and the salesmen are also technically trained, some lack of

sympathy and co-operation is liable to develop between the two groups. This organization structure presumes that the salesman will call upon the technician for help when customers pose problems beyond his depth. The salesman is apt to be loath to admit the existence of such problems. The technical force, being deprived of occupation and seeking to find an excuse for its continued existence, is likely to begin making direct contacts with customers. Duplication of service and customer confusion follows as night the day.

The technical advisory work may be assigned to a separate staff unit of the sales department. This tends to avoid some, although not all, of the difficulties flowing from its location outside the sales department. When a highly decentralized form of organization, divided along customer or product lines, is used, it is probably better to assign this work to one or more technical staff assistants to the manager of each of the decentralized departments.

The location of this work in the engineering department assures that it will be done in a manner as thoroughly competent as the personnel of the engineering departments. On the other hand, not much of it may be called for under this arrangement. Its location as a separate unit of the sales department diminishes but does not erase this difficulty, especially if the organization is decentralized according to customer or product. The quality of the service may be lower but not seriously so.

When staff technicians attached to product or customer sales managers are assigned the task, its purely technical quality may suffer somewhat. However, this loss may be more than offset by a greater realism and more practical approach resulting from their closer relationship to the sales and use problems involved.

The number of people engaged in service work may in some cases be considerably greater than in sales work. The Pitney-Bowes Company, a large office equipment concern, has 50% more people in service than in sales and finds that the selection, training, and supervision problems connected with each group in its organization does not differ markedly either in kind or in complexity.* In this instance, the company performs its own service work, but in others, service work is delegated to independent dealers. Then the problems of organization and supervision become even more difficult to solve satisfactorily.

B. The RCA Service Company

The RCA Service Company, a Division of the Radio Corporation of America, exemplifies the efforts of a large corporation to assign all their service problems to a separate division, separating the service function from their other operations. Mr. E. C. Cahil, President of the

RCA Service Company, made the following observations on the functions of his organization:*

A busy housewife thinks of the RCA Service Co. in terms of the technician who fixes her automatic washer, dryer, television set or room air conditioner. A theatre owner thinks of us as the field engineer who maintains his motion picture equipment. To a laboratory scientist, it is the engineer who helps him get the most exacting performance out of his RCA Electron Microscope. And BIZMAC owners know us as the men who maintain these wonders of the business world. Beverage bottlers think of the men who maintain their automatic inspection machines. To broadcasters, we are the men who help maintain their RCA transmitters and studio equipment. Truckers, highway patrols and pipe line operators picture us as the men who maintain their RCA mobile and micro-wave communications systems. A stateside manufacturer of packaged food products may think of us as the company that keeps his automatic weight-checking machines working with hair-line accuracy. Around Cape Canaveral, Florida, RCA Service Co. means the engineers and technicians who handle ground instrumentation activities at the Air Force missile test center and its lonely island stations far out on the range.

A military man stationed in any one of 28 foreign countries may think of us primarily as Factory Service Representatives, Field Engineers and Technicians who supply installation supervision, on-the-job training and maintenance. To an Arab in far away Casablanca we are the people who gave him his first glimpse of the magic of television. And an operator aboard an ocean liner knows us as the men who repair his communications gear.

All RCA engineers, and particularly those engaged in product development, design and manufacturing, should recognize the importance and the far reaching effect of the RCA Service Company's wide range of activities. RCA Service Company personnel may be thought of as a link

between the engineer and the customer--a vital link that has reciprocal values of sizeable importance.

The activities of the RCA Service Company are divided into three Departments: Consumer Products Service, Technical Products Service, and the Government Service Department. A discussion of the functions and scope of each of these Departments follows, and is included to show the magnitude and variety of services demanded by customers of a large corporation. This information is based upon an RCA pamphlet entitled "The RCA Service Company-A vital link in Engineering."*

Consumer Products Service Department:

The principal function of the Consumer Products Service Department is the installation and service of RCA Victor television receivers. But it also has a growing appliance service business. It has a Commercial Service activity which is responsible for preparation of all RCA Victor service data (radio, "Victrola," Hi-Fi, tape recorder, as well as television), for technical liaison with RCA distributors, for field surveillance of RCA product quality, and for technical assistance to dealer and independent servicemen. And it also has a Purchasing activity which serves the entire RCA Service Company.

Backing up the service branch organization is a variety of supporting services at the home office. To mention some, there are: Engineering, which develops

better service techniques and tools and looks into recurring service problems (more about engineering contributions later); a Material Control group which sees to it that the right varieties and quantities of materials are on hand; Training which works out and administers training programs; Sales and Merchandising, to provide adequate sales programs and sales training; and Purchasing, which, as already mentioned, serves the entire RCA Service Company.

For the most part, the services of this activity are performed on behalf of the RCA Victor Television Division and the RCA Radio and "Victrola" Division. Through 20 technical representatives who travel constantly among the 85 RCA Victor domestic distributors and their dealers, it imparts on-the-spot technical training and assistance. These conduct distributor-sponsored service clinics and workshops for dealer and independent servicemen. The magnitude of the latter activity may be gauged by the fact that since the war alone, these men have conducted over 2800 meetings with total attendance of several hundred thousand. These men resolve unusual customer complaints, through direct contact, if necessary. They supply quality and performance data to the respective RCA Victor Divisions.

Still another very important function of Commercial Service is the preparation and printing of RCA Victor Service Data manuals, of which some 1700 different

editions have been edited and distributed in the post-war era alone. They are recognized as outstanding in quality of information.

Technical Products Service Department:

The Technical Products Service Department services all products not intended for use in the home or by the military. That, obviously, means it must handle a wide variety of product services.

For years its backbone has been the service of motion picture equipment. But industrial and scientific equipment services have steadily been gaining. Both remain important elements, but they will shortly be eclipsed by services for a newer product, RCA Electronic Data Processing equipment.

Technical Products field service activities are administered through eight Regional Managers. In a typical Region, there are also a Manager of Theatre and Industrial Service, a Manager of Mobile and Microwave service, and a Manager of Radiomarine Service. Four of the Regions also have a Manager of Communications Service.

Mobile and Microwave services are performed by specialized technicians, many equipped with special trucks that are in reality mobile repair shops. Also, there are mobile and microwave service branches for the many customers who can drive their vehicles to the branch for service.

Mobile and Microwave service business is highly competitive, with customers who demand maximum performance of equipment and speed of service. RCA has revamped and expanded its facilities and trained its field organization to be sure that they provide the quality of service that will give potential equipment purchasers an extra incentive to buy RCA equipment.

Television and radio transmitter and studio equipment installation and service is also handled by specialists. These men must be well qualified engineers, and they must be carefully schooled on the set-up, adjustment, and service of the apparatus. RCA's biggest problem results from the variations in the installation supervision workload which comprises by far the greater portion of this particular service.

Radiomarine services are also performed entirely by specialists. These services were performed by RCA Radiomarine, a subsidiary of RCA until 1955. The RCA Company presently employs a staff of approximately 125 technicians and has facilities at 51 coastal and inland waterway ports to repair RCA marine communications gear. RCA also has a well equipped shop in the New York area where complete overhauls can be efficiently handled.

RCA Electronic Data Processing's BIZMAC installation and service, too, is handled exclusively by specialists.

Direction of this activity is still centered in the home office.

Theatre and industrial services are performed by specialists where concentration makes it economically feasible. For example, some field engineers devote all or practically all of their time to the RCA Electron Microscope. Others may be occupied almost entirely with Beverage Inspection Machines at Coca-Cola, Pepsi-Cola, and 7-Up bottling plants. But a substantial part of RCA's industrial services are performed by field engineers who deal with a variety of industrial products in addition to theatre equipment. Thus a given field engineer might list on his service schedule Beverage Inspection Machines, RCA Metal Detectors, RCA Electron Microscopes, several types of electronic weighing machines, RCA Theatre Television, Industrial Sound Systems, RCA Industrial Television, and motion picture installations of a variety of makes and models. This type of service program obviously demands much versatility on the part of the serviceman, and presents substantial training problems to management.

Reference has been made to non-RCA product services. The principal example is found in RCA theatre service activity. Most theatre chains prefer to have a single source of service. This has required that RCA be able to accommodate all makes of motion picture and theatre television equipment.

Also, various industrial equipment manufacturers who have found it un-economical to maintain an installation and service organization of their own have availed themselves of RCA's facilities. Such companies include the Exact-Weight Scale Company (which manufactures a high speed, electronically-controlled, machine for check weighing of packaged commodities,) Howe Scale (which has an electronically-controlled device for printing weight slips at remote locations), and Cox and Stevens (manufacturer of railway and traffic scales).

Government Service Department:

The Government Service activity of RCA Service Company was started years before it was given departmental status in 1950. But its biggest growth, by far, has come about since that time.

The activity goes back to pre-war years when RCA field service engineers supplied installation supervision when required under apparatus contracts awarded to the Engineering Products Department. Such apparatus was primarily sound communications equipment for Naval vessels.

The war, of course, led the RCA Manufacturing Company, Inc., into new military electronics fields such as Search Radar, Fire Control Radar, Shoran, Loran, Sonar, Block (military airborne TV), etc. As a result, RCA Service engineers were called upon to supply installation supervision, maintenance services, and operation and maintenance

training in practically every theatre of war, as well as at shipyards and military establishments throughout the United States.

Of today's various activities in this department, the biggest and most exciting is the Missile Test Project at Patrick Air Force Base, Florida. Here, skilled personnel provide services which include the planning, engineering, operation and maintenance of all ground instrumentation for the missile test range having its launching site at Cape Canaveral. This includes manning of the down-range instrumentation stations on islands in the Caribbean and far out into the South Atlantic. Performance data for missiles under test is acquired, transmitted and reduced. Technical and fiscal information is also compiled for use by the Air Force in the procurement of equipment and materials. The RCA Service Company operates this project under a sub-contract from Pan-American Airways. It was selected on the basis that it offered the best over-all qualifications. Personnel requirements include top skills in the electrical, electronic, mechanical and optical arts, and range all the way from technicians to scientists with Ph.D.'s.

Providing services required by contracts awarded to RCA-Defense Electronic Products is still a major activity of the Government Service Department. These activities are handled by a group known as Defense Electronic Products Services.

Field representation in this activity is through Factory Service Representatives. They conduct training programs covering installation, operation and maintenance. If the occasion demands, they set up and operate service shops and depots where RCA-manufactured apparatus can be modified to meet special needs. They "feed back" much valuable information to RCA-DEP engineers.

DEP-Services also conducts reliability programs, under which it provides complete data reduction, processing and computing services requiring employment of engineers, statisticians and mathematicians.

Another program of DEP-Services is the assignment of Engineering Service Representatives to assist the design engineers of RCA-Defense Electronic Products. These are carefully selected specialists who have had extensive field experience with military electronics. Their function is to provide the field service background needed for the design of equipment having the maximum "maintainability."

RCA Service Company is a leading technical services contractor for the military. As such, it is currently supplying field engineers under contracts requiring installation supervision, maintenance engineering and training services at Army, Navy and Air Force bases throughout the United States and in twenty-eight foreign countries. These services involve as many as 500 types of airborne, shipborne and landbased equipment. Similar services

are performed for the Civil Aeronautics Administration, the International Cooperation Administration and the Atomic Energy Commission.

One of the contracts of this type provides for contractor maintenance at the more than 40 Aircraft Control and Warning sites operated by the Central Air Defense Force of the Air Defense Command. Here RCA Service engineers and technicians provide around-the-clock maintenance of the communications, radar and diesel power equipment.

Government Service instructors are currently assigned to many of the Country's leading military training centers. They are also assisting in the preparation of curricula at training centers in the United States and overseas. Training activities have included design and production of a number of types of RCA Electronic Trainers which have been sold to American schools as well as to the military.

The preparation of engineering reports, technical manuals and publications is another substantial activity, one which requires the services of substantial numbers of engineers, writers, artists, photographers and draftsmen. But the most unusual is RCA's venture into the newest field of all--Atomic Services--wherein RCA has been awarded a contract to design and construct an atomic reactor for military training purposes.

The above discussion points out the wide scope of service activities that a large corporation must face. This separate service division handling all needs of the corporation has the advantage of eliminating duplication of service efforts and equipment within divisions. Overhead expenditures are spread out among the various divisions in relation to the volume of service work handled by the service departments. However, this organization may create a problem in communication between the service division and the division being serviced. In some cases this results in delays and ensuing inconveniences to customers.

C. Effect on Channels of Distribution

The need for service is a factor of no little importance in the selection of distributive channels for a product. Because of it, the manufacturer may decide on a greater measure of directness in distribution than he otherwise would. He may eliminate the wholesaler or jobber and go direct to the retailer because he thinks that service can be more adequately controlled through more direct contact. He may go further and sell his product only through exclusive agencies, as the automobile companies do. He is then dealing with a smaller, more selected group of dealers and, as he has given them the exclusive right of sale in a certain territory, he can demand more of them by way of sales activity and provision for service. If this measure

of directness does not suffice to get the activity in selling and the adequacy of service which he feels that his product demands, he may establish his own retail outlets and thus substitute orders to company employees for persuasion of independent retailers. This has been the decision, for instance, of the Singer Sewing Machine Company, and the high order of service given to housewives by the Singer stores could not, or would not, in all likelihood, be duplicated by retailers, even if they were given exclusive agencies.

The manufacturers of industrial goods which require much servicing usually employ direct distribution. Jobbers and manufacturers' agents are relatively ineffective in service work. These middlemen usually are not equipped for service work, and, more often than not, do not have the technical ability nor the time to do an adequate job. Representative of the manufacturer are frequently called in for consultation prior to sale or for demonstration and afterservice work, even though the equipment is sold through intermediaries. If the manufacturer does such work, then it is only a short step to direct sale as well as service. A New England distributor of General Electric motors and other electrical equipment had the following to say concerning the relationship existing between the distributor and the manufacturer:*

"The day of exclusive territories are over, and as a matter of fact, you now count on the manufacturer to compete with you on certain accounts within your territory. The manufacturers many times confine themselves to OEM (original equipment manufacturers) accounts, and only new OEM accounts are allowed to the distributor. The advantages of direct sales to the purchaser on the part of the manufacturer is obvious. The promise of top-notch technical service from the big-name organization many times sways the purchasing agent to dealing with the manufacturer instead of the distributor. However, we also have access to all the technical services of the manufacturer and branch service companies assure us of this. This many times makes the difference in getting a sale or not. Hence, we, the distributors, must convince the purchasing agent that the manufacturer's salesmen are not offering anymore than we are in the point of service."

The distributor is still of much importance to the manufacturer today in order for the manufacturer to get adequate market coverage. However, the wholesaler, jobber, or any middleman must have access to service facilities to quickly satisfy customer requests.

D. Location of Service Work

The location of service work is largely conditioned by the nature of the product and the density of its use. Much work which precedes the actual selling of some industrial goods such as machinery and equipment may largely be done at the home office of the seller. After the salesman has made a preliminary survey of a buyer's needs, sales engineers at the home office may decide upon the best methods of handling the customers' work, prepare the necessary drawings,

design tools to be used in special machines, and make time studies for guidance of the buyer. For other types of equipment--for instance conveying machinery--survey work must largely be done at the plant of the buyer. It is a question of adapting a product to a given setup of physical conditions, and these must be the subject of constant study. Demonstration is likely to be at the plant of the buyer, although operators may be trained elsewhere. Installation, of necessity, is at the location of the buyer.

Service work after the sale may be done in a number of locations and by different agencies. It may be done by the producer at the factory, by the producer at regional service stations, or at the location of the user by a representative of the seller, by local dealers in the product, by local artisans, or by the buyer himself. Whether a product is repaired at the point of use or at the point of origin largely depends upon its characteristics. Some products can be returned to the factory for repair, others cannot. For instance, products such as cash registers and computing machines are easily movable, whereas engines and lathes may be set in concrete. Likewise for the former, transportation costs are not particularly high in relation to the value of the product, and the presence of highly specialized equipment and factory-trained personnel may be needed in order to make repairs satisfactorily, at

least for an overhaul job. After-service for these products, other than slight repairs, is done at the factory or at the regional service stations connected with district offices. Which of these locations is chosen depends, in turn, on density of use. If there are enough machines in use and thus a sufficient volume of repair work to be done, the manufacturer can afford practically to duplicate the factory setup for repair work at district offices. Whether the manufacturer should do the repair work through his own representatives or delegate the work to others likewise depends upon the characteristics of the product. Only skilled individuals who are trained at the factory can be used for a highly technical, special-purpose machine. The work may be delegated to others when less skill is needed. Exclusive agents may do the work or the buyer may do the work himself. The Pitney-Bowes Company, a large manufacturer of office equipment, has 350 service points in 110 branches located in 101 cities throughout the United States.* The United Shoe Manufacturing Company has a staff of 800 men located throughout the country in 48 branch offices, and service stations proportional in strength to the volume of shoe production in each area.** In both these cases, these men install, adjust, repair and check machines, instruct operators, and assist factory management in securing maximum

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**52

mechanical efficiency from each machine. This "on-the-spot" service has done much to make each of the above firms leaders in their fields.

E. Control of Service in Distributive Outlets

The control of service in distributive outlets involves, among other things, provision for adequate training in relation to the product. Obviously, a dealer or his sales or servicemen cannot demonstrate, install, or repair a product unless they know it thoroughly. Still, despite the efforts of manufacturers, it is at this point that retailers and other distributors frequently fall short of the desired proficiency. Control must also be exercised over the equipment used in service and the stock of repair parts carried. These matters cannot be left to the discretion of independent distributors. Controls must be devised to govern parts stocks, and constant supervision must be exercised to see that they are made effective. Few things are more destructive of good will than having to stop production while a machine part is procured. This is especially true if the difficulty can be traced directly to negligence on the part of the machine producer or his representatives. Inability to use an automobile or a washing machine because some dealer has failed to maintain his repair stocks has a like effect and, if it is repeated too frequently, subsequent purchases are likely to be of

another make. Control may also be exercised over service costs to equipment users. Standard costs are used for some items of repair in the automobile industry, ostensibly, at least, to protect the user. Perhaps they do serve as protection against excessively high charges; but, inasmuch as they have the approval of authority, they also protect the dealer, as they allow him to charge what is likely to be a reasonably generous amount. In other words, control over parts and service charged to the user is one means of maintaining a financially healthy group of dealers, and this is of first-rate importance to the manufacturer.* Complex, highly technical equipment are usually controlled directly by the manufacturers. An example of this would be the International Business Machine Corporation.** Data are furnished on a contract basis to industry, science and government by the Service Bureau Corporation, a wholly owned but independently operated subsidiary. These activities previously were furnished by the parent company. There are 82 branch office locations in principal United States cities, each operating punched card accounting machine systems. Seventeen of these service bureaus are also equipped with electronic data processing systems. The Corporation performs a variety of data processing services for its customers, including such applications as payroll, sales accounting, inventory control, cost distribution, statistical analysis and scientific computing.

* 7. p.284

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F. Effectiveness of Technical Service

The following are 11 check points which can be used to measure the effectiveness of a company's product service program. This 11-part yardstick includes such determinants as dollar cost, volume and variety of products and models, "in-warranty" vs. "out-of-warranty" service, quality and speed of service, and size and quality of headquarters and field staff.*

DOLLAR COST: The obvious first step is a complete cost analysis of the present service operation and cost estimates of possible alternative courses of action. Necessarily, some estimates will be rough. A thorough inspection of cost department records will prove valuable. Such indirect items as service promotional expense should be included. The end result of a complete cost study must be a management decision as to just how much service the business can afford in relation to the sales volume expected.

VOLUME AND VARIETY OF PRODUCTS AND MODELS: A standardized, low-value product such as an industrial lamp lends itself to straight replacement from regional stock. However, a warehouse replacement plan for another low value item with wide model variety might burden the service warehouse with unbearable inventory costs.

*21, p.10

IN WARRANTY VS. OUT-OF-WARRANTY SERVICE: The demands of service within the normal warranty period may be quite different from those required after the expiration of the warranty. What does the product require in the way of warranty? It is important that a company meet its ethical liability for the product, and many times, it may be compelled to do more depending on competition. However, a company should not be too liberal in its warranty settlement.

It is this type of question which must be answered before one can properly determine the organization and procedures required. The service program should be measured against its ability to handle both situations in the most logical and efficient manner.

QUALITY OF SERVICE: While high quality service is always desirable, there is an optimum point, usually measured in cost, which is the best for the individual business. Where is this point and what is the best way to achieve it as an operational fact? Large steam turbines, for example, require highly trained factory representatives for proper service. Small electric motors also can be expertly repaired at the factory, but any reputable motor repair shop can do the job nearly as well, at much less cost.

FEED-BACK OF FIELD FAILURE INFORMATION: Nothing can be of greater use to a quality control and production organization than prompt and accurate information on the volume and cause

of field failures. Proper interpretation of this data can result in greatly improved designs and manufacturing techniques. What information does a business need in this regard, and how satisfactory is it today? It is almost axiomatic that the availability of this information is directly proportional to the amount of actual control that is maintained over the service operation.

SIZE AND QUALITY OF HEADQUARTERS AND FIELD STAFF: The staff required by a service organization must fit a company's resources. If examined only from the cost angle, the size and quality of a present service staff may be much too rich for actual requirements. Long range manpower planning and training facilities must be taken into consideration. While a factory branch organization might offer superior service, perhaps utilizing independent servicing agents will do the job with much smaller investment in people required.

ACTUAL CONTROL OVER THE SERVICING OPERATION: How much control is needed to get the job done right? It is probably true that the more highly engineered a product is, the more service responsibility the manufacturer must bear. Yet it is always easy to overestimate what is believed to be a company's "unmatched knowledge." As a general rule, retain as much direct control as is economically feasible.

SPEED OF SERVICE: Service can seldom be too fast, especially in the cases of in-warranty service complaints. Most

customers expect a small amount of field failure in products. They also expect an organization to be ready to get the trouble fixed fast. But how fast? What do they think the average time lapse from product failure to completed repair or replacement should be? After answering this question, a company must decide what is the best way to meet this goal, balanced with the economic factors involved.

SERVICE FOR HETEROGENEOUS PRODUCTS AND CUSTOMERS: As a general rule, the more inclusive a service plan, the fewer problems the company will encounter. This places a large burden on the diverse product business. Many times it simply isn't possible to service all products within the same service operation. Still, a company should make a careful examination to determine whether a service plan is available which could handle two or more product lines now services separately. The same is true from a customer standpoint. Is service sufficiently broad to handle large and small customers in the same manner? And certainly a company had better establish that service allowances are equal for all customers.

SERVICE EQUAL OR BETTER THAN COMPETITION: In the majority of cases, superior service will not gain as much additional business as inferior service will lose. This is to say that while service better than competition might be

desirable, a manufacturer should be certain that it is, at the very least, equal to that offered by his competitors. This requires that a company know how its over-all product service compares to its competition, not from the company's point of view, but in the eyes of its customers. This may require a full-blown market study, but the information is as important as any a vendor can have in the marketing area.

KNOWLEDGE OF LONG-TERM TRENDS: Even though a product service plan is satisfactory now, will it fill the bill in two or three years? Are service costs increasing to the point where it will be more desirable to replace, rather than repair, in the future? Are manufacturing costs increasing to the point where repair will be more economical in the future than straight replacement? A company should present operation in the light of possible product variety growth. Can the present organization handle the service volume expected in 1965?

What are the trends in product design which will affect present service methods? It would be most costly for a manufacturer to develop and put in operation an organization for nation-wide product repair when engineers are developing a superior product which will be impossible to repair. All of this is to say that a product service program must be measured and modified, not only in the light of present requirements but also in the light of

expected future needs. The factors of quality, life expectancy, price, and competition must be evaluated in deciding "how good do we make the product?" The concept of "Final Cost" versus "First Cost"* to the customer is most important in industries such as electronics where many technical advances are being made. Product A which sells for \$120 may be reduced to \$100 per unit, by riveting the switch box to the machine instead of using standard hardware. Sales at this price may go up. However, to repair this machine, instruments must be stripped in order to reach the insides. This will result in a \$25 repair job which before the "improvement" would have been 50% less. Such costly repairs can injure market penetration in the future and hurt repeat business.

Change and complexity are the rule rather than the exception in industrial marketing today. A complete and regular audit of an organization's product service program using these check points will result in crystallizing the service problems of an individual business. This will allow the marketing organization to provide the best possible service at the least possible cost.

CHAPTER V

COSTS OF TECHNICAL SERVICES

A. Free Service - Fact or Fantasy

Service is a much abused word. It has been the butt of many gibes and jokes and, in a measure, deservedly so. There is no question that the attempt by many vendors to obtain favor by making it appear that they are giving something for nothing has been instrumental in leading to the present unfortunate situation. This has, in the eyes of some, caused the word to appear ridiculous and caused a loss of respect by the purchases for those companies which indulge in such practices.

First, it should be recognized that service must be charged for in some manner or result in a decrease in profits. If the manufacturer does not make a separate charge for service, then it is likely to appear in the supply price for the product. So-called "free service" is not actually free unless the manufacturer unwittingly fails to increase the price as he increases the service given to purchasers when he could have done so without adversely affecting volume. When service work is extended without price increase, it is more likely that competition forced such action than that the manufacturer failed to maintain his profit margins through carelessness. On the other hand, the result of additional service work might increase volume of business

to such an extent that the same price could be changed for the product and still maintain or increase profit margins. This could result through the spread of overhead costs over a greater quantity of product. Under such a condition, one might reason with some justification that the service given was free. At least, the buyer would receive the additional service without an increase in the price of the product by virtue of helping the manufacturer to increase his volume of business.

Perhaps manufacturers at times have increased service work, maintained prices, and expected an increase in business which has failed to appear, for there are many cases on record in which the responsibility for decreased profit has been attributed to the high costs of service work. Obviously, if all manufacturers in direct competition at much the same time increased the service given without a compensatory increase in the price of their products, the results might well be a decrease in profits. This would necessarily be the result unless the total volume of sales increased. Industrial machinery and equipment has a derived, rather than a direct, demand, and thus promotional work through service may increase the business of one company, but it is not likely to increase the total volume of business for all competing companies. If the individual manufacturer does not recognize the fact that higher service costs may reduce profits, he may not increase prices as such costs

are increased. In time, nevertheless, service costs are likely to appear in the supply price of product or as separate charges to service users in proportion to use.

Companies which have increased service and used it as a promotional weapon may find that the expected increases in business have not materialized and that, in the meantime, profits are being reduced because of service costs. They begin to realize that service without direct charge is one of those sales activities which get out of hand easily and that its costs may be partially overlooked. Perhaps the lack of adequate service-cost records has obscured the costs involved. Furthermore, there may be increasing evidence that potential buyers are abusing the service privilege, particularly of the survey type, by taking the plans prepared at no expense to the potential buyer and using them to solicit bids from other suppliers. Unless there is a definite understanding as to the extent of free service which will be given, buyers may likewise be unreasonable in their demands for demonstration and after-service work. In one instance a piece of apparatus had been in use for 10 years, and yet the manufacturer was asked to make certain repairs on it free of charge. A request of this sort should never get beyond the company representative to whom it is first made. He should take a positive stand and should have no difficulty in proving that the request is entirely unreasonable. When evidence of the

adverse effect of service on profits and of the abuse of service accumulated, the need for a thorough study of the service problem becomes apparent.

The following three quotations are comments made by a vice president of a paper company, on the subject of "Free Service":*

To my mind, there is no such thing as free service in selling. It is an important item of cost in sales expense and every sales manager and salesman (and, may I add, purchaser) should be impressed with the fact.

It is obligatory for the manufacturer to service his customers and enable them to use his product satisfactorily and profitably.

The weakness in the use of this service is two-fold; first, it is offered by many vendors who do not have real staff organizations and who discredit the whole engineering group by the kind of work they do; second, many buyers are entirely unethical in the way they appropriate such engineering service and pass it on to competitors for bids with little or no consideration to the manufacturer who has done a job and has made a proposition which will save the buyer money.

There are few commodities and few purchasers which do not require a certain amount of service in connection with a sale. In fact, that service which is universally required from the vendor, inherently is a part of the cost and must be covered by the sales price of all vendors. The principal difficulty is that the scope of such service is not clearly defined for a given product in the minds of the vendor and the purchaser.

B. Policies in Handling Service Charges

Various policies are followed in relation to handling service charges. In the majority of cases, however, no charge separate from that included in the product price is made for survey work. Installation and demonstration are more generally charged for separately, but there are many notable exceptions. Some products are sold installed, as the buyer insists on shifting the burden of installation entirely to the seller. Separate charges for demonstration are the exception, rather than the rule, for technical office equipment.* Subsequent to the termination of the warranty period, after-service is habitually charged for separately. There are few cases, however, in which all types of service are designated as "free" or in which all types are charged for separately. Rather, the usual situation is a mixed one. In making decisions on these charges, however, certain desirable objectives should be kept in mind. Insofar as it is possible to do so, a varying price policy should be avoided. Discrimination between buyers through the medium of service work is not at all unusual and is not productive of healthy business relations. Furthermore, it may injure a company in its competitive position in reference to other potential buyers. Another objective is to seek protection against the abuse of the service privilege on the

part of the buyer and, possibly, against the seller's own misuse of his service organization without returns either by way of promotion, development, good will, or actual funds adequate to justify the cost incurred.

There are certain guideposts which should aid the manufacturer in making his decision as to whether service should be charged for in the price of the product or separately. These will be stated in the form of questions although they might easily be re-worded into generalizations. They are as follows:*

1. Do all buyers need and use the service offered? If certain customers have their own specialists and thus do not use the service which the seller stands ready to furnish, the product which they buy should not be burdened with additional price because of service rendered to other buyers. Charging such customers for service is tantamount to a varying price policy, as these buyers are thus forced to pay for something which they neither want nor get.
2. Is service needed and used by buyers in proportion to the size of their orders? If all buyers use service in the same amount and the business which they give the seller varies widely, the result is a varying price policy. If, on the other hand, the service used varies directly with the size of the order, no discrimination between large and small buyers is likely to appear.

* 7, p. 281

3. Is it in the interest of the seller to have all buyers use the service offered? For instance, a buyer may prefer to do his own installation work. It may be the experience of the seller, however, that such work is not done properly by the buyer and that the machine performs ineffectively later. Under such conditions, the seller may prefer to install the product. The installation charge ought then to be included in the price of the product.

4. Will the cost of the service work be a negligible part of the product price? If so, there will be little discrimination, even though all buyers do not use service work. Then the administrative difficulties of charging for service separately are avoided.

5. Is the service work likely to have an important merchandising function? In certain cases, service work, particularly of the survey type, furnishes a company's executives, salesmen, and merchandising men with information which may later be utilized to meet the problems of other buyers, for designing new products, or for adaptation of old products to new uses. This is well illustrated by the experience of a concern which sells industrial cleaning materials.*

The detailed reports supplied by our men form a unique library of technical data on cleaning. It is not permitted to become a mere storehouse of data. The information is classified and edited so that it is always available, and is actively used by the technical and service departments in developing new and improved materials and methods.

In a very real sense the survey work of this company yields information which benefits numerous buyers rather than only the specific one to whom the service was originally given.

6. Is the service work needed for all the company's products?

If service work is needed for only certain products in a company's line or if it is needed in differing proportions, either it should be charged for separately or care should be taken to raise the price of only those products for which the service work is incurred. Otherwise, certain products may be made noncompetitive as to price.

7. Is the product a new one with which potential buyers have had no experience?

Service costs are of a developmental nature under such a condition. The buyer would be very loath to pay separate charges for service when uncertainty about the product weighs heavily against sale. Furthermore, service costs during the initial periods of sale in all probability would not be loaded onto the units of product then sold. As a developmental expense they would be amortized in the price of the product over a longer period.

The following generalization on this matter of service charges may be formulated. Service can more reasonably be charged for the price of the product when all buyers need and use the service offered and in direct proportion to the size of their purchases; when the settler wishes to force the use of service; when the costs of service will be a negligible part of product price if they are included

within that price; when the service work performed has an important merchandising function; when the service work is needed by all the company's products and in like proportion; and when service costs may be considered as developmental costs. To the extent that the opposite conditions prevail, there is more reason for making separate charges in proportion to use.

The application of these generalizations to types of service work should give at least presumptive evidence as to how they should be billed. For more exact determination, the service problem associated with each product would need investigation. Survey work is likely to be needed by all buyers of technical products, but not necessarily in proportion to the size of orders. It is likely to be in the interest of the seller to do such work. Furthermore, all survey work has some merchandising value, for a buyer's needs are not likely to be unique. It may likewise have some training value for company salesmen. Survey work for new products is likely to have much greater advantage of a merchandising character. Such work, particularly for manufacturing equipment when it necessitates the use of an engineering staff, is costly, and it will constitute an appreciable part of the product price, if included therein.

C. Administering Costs of Service

From the administrative point of view, the problem is a perplexing one. It is doubtful if an accurate estimate of charges for survey work could be made at the beginning of negotiations. Furthermore, the potential buyer might not be willing to have the seller go ahead with such work unless charges were determined in advance. There is always the chance that the work will not be productive, and someone must take the risk. The buyer, in the very nature of the case, must participate in this risk, for he must give assistance to those who are doing the work and, therefore, such work comes to be a joint speculative venture.* Under such conditions it is not likely to be charged for separately, but the fact that a buyer's problem may be unique and that the service may be needed by only a few buyers may make it advisable to do so.

Installation work, if needed at all, is likely to be needed by all buyers and roughly in proportion to the size of their orders. However, the cost of such work will vary between buyers because of differences in location. Both the time necessary to get to and from the buyer's location and the cost of travel may produce considerable variation in installation cost. If correct installation has much to do with effective operation of a machine, then it is in the interest of the seller to have all buyers make

* 14, p. 8

use of the installation service offered. The cost of such service may or may not be an important part of product price, if charged for therein. Work on installation will not be likely to have an important merchandising function. If the assumptions which have been made are correct, the charge for installation might well be placed in the product price if it were not for differences in location. This factor alone, however, may justify a charge separate from the product price.

Installation and demonstration are closely associated, as they are likely to be done by the same person or persons on the same trip to the buyer's location.* But for some products which may require demonstration, installation does not enter the picture. An example is office equipment. Moreover, the factors which affect the manner of charging for each differ markedly. There may be a pronounced variation among buyers as to their need for demonstration. Some may have trained operators, others may not. There is little reason to believe that the demonstration work needed would necessarily vary directly with the size of the order. The location of the buyer would produce a variation in the cost of demonstration, as it did with installation. It is not likely that demonstration cost would constitute a negligible part of the product price, if included therein, unless the work is done for very high cost installations. It is doubtful,

* 7, p. 281

likewise, if all of a company's products would require the same amount of demonstration from the standpoint of cost. Unless the conditions are such that the cost is negligible in relation to the value of the product, a good case can be made for a separate charge for demonstration or what might be more adequately described as training of a buyer's operators subsequent for sale. Either a separate charge should be made, or there should be definite limitations on the amount of free service which will be given, for otherwise the privilege is likely to be abused. After-service is likely to be needed by all buyers of technical products, but not necessarily in proportion to the amount of product in use. It is in part an outgrowth of the degree of mechanical perfection of a unit of equipment at the time of sale. During a period in which mechanical defects should appear, the buyer is protected by a warranty, and the service required is and should be in the price of the product. It is also in part an outgrowth of the manner in which the product is used. A piece of technical equipment is subject to abuse by the operator; also, one concern may use a piece of equipment almost continuously, whereas another concern may use it intermittently. Thus the need for service work is marked by variation as between product users, and the responsibility for a greater or lesser need is on the shoulders of the user rather than on those of the manufacturer. This condition

points strongly to a separate charge for each use of service. In addition, this conclusion is strengthened by the fact that the cost of the service is not likely to be a negligible part of the product price, if included therein; that after-service is not likely to have an important merchandising result; and that it is not likely to be needed proportionately for all of a company's products. Manufacturers habitually charge for after-service when the warranty period expires. A slight extension of the warranty period is given occasionally in order to hold good will when the buyer is insistent that through no fault of his own the product is not giving the expected utility. Only when the product is leased to the user is the manufacturer likely to charge for after-service in the price of the product. In fact, all service is charged for in the price for the use of the product, for the physical product itself never becomes the property of the buyer under a lease arrangement.

D. Customer Considerations

Even when conditions of product and market point clearly to separate charges for survey, installation, and demonstration, companies shrink from imposing such charges on the buyer. They are fearful of the reactions of the buyer and of what competition may do. This is particularly true of charges for survey work. Thus various compromise plans are used which are less objectionable from the promotional angle but which either recover some of the service costs or

reduce the amount of such costs. In one instance a manufacturer of conveying machinery expressed his willingness to make a preliminary survey at no cost to the potential buyer. However, after this initial work, if the buyer wished a more thorough survey with drawings and detailed plans, the buyer had to pay for these services. Sellers at times request assurance of purchase before the survey work is started; but, unless the seller is in a very strong position competitively, such a demand may seriously jeopardize the possibility of sale. A more common policy is to establish limitations on free service, with variations in proportion to the size of the order. This has the virtue of nondiscrimination, and is easily understood by the buyer. If conditions in a company's plant are such that installation presents some unusual problems, the buyer should stand the additional costs incurred by the seller in making the installations. Or if the buyer demands the services of a demonstrator over an unusually long period because his operators are less familiar with the equipment than those of most other buyers, again he should stand the additional costs incurred. If such limitations are placed on free service and the buyer is fully aware of them, that very fact will prevent abuse. His avarice is not allowed to have full play.

CHAPTER VI

REDUCING COSTS OF TECHNICAL SERVICE

A. Methods to Reduce Costs of Service

Some concerns may approach the problem of lowering costs through an attempt to reduce the product line. A simplification of products or a concentration of attention on those parts of the line which require the least by way of service may achieve this goal. If service costs are properly allocated to the different products in a line, it is conceivable that some of them might prove to be actually unprofitable and that the company would be better off without them. Arrangements with industrial engineering concerns have been proposed whereby the concern is induced to suggest a company's products to its clients. This might lessen the necessity for a company to do survey work for potential buyers. But companies want disinterested advice from concerns which sell engineering service, and tie-ups between engineering concerns and equipment makers might be productive of bias toward a maker's product when it was not the best product for the client. Survey costs have been reduced indirectly at times through a reduction in salesmen's commissions. Specialists are frequently made available to a salesman if the problems of the potential buyer are such that a greater degree of training and ability than he

possesses are needed to solve them. If the salesmen are paid on a commission basis and must call in help to make a sale, it is only reasonable that their commissions be reduced. Some, although probably not all, of the cost of the specialist's work would thus be recovered. At least such an approach might deter the salesmen from using the services of specialists when they were not needed.

More complete and detailed written instructions in regard to use and repair of a machine may reduce service costs. Finally, the service given should be reviewed periodically to ascertain if it could not be reduced without jeopardizing the position of the company. Unless costs are watched closely, service work may grow like Topsy, and unrecognized cost may result in lessened profits.

Many companies feel that the sales value of such services far outweigh any benefits that might be gained from such reductions. In the words of a machine tool manufacturer:*

"It is our belief that in the sale of capital goods it is important not to let the enthusiasm for cost reduction impair the efficiency and reputation for customer service which is required for long-term operation in the field of Machine Tool Manufacturing."

Another company believes that expenditures for the purpose of expanding service to customers are the most effective means of promoting sales.

A manufacturer of office equipment reports that

costs of customer services have risen in proportion to their increased sales volume. He goes on to say:*

To some extent, the expenses of customer service are dependent upon the efficiency of the manufacturing and shipping organization, and decreased costs will result from increased efficiency in these departments of the company. Decreased volume, however, will not necessarily result in proportionate decreases in service costs, as the nature of this business demands that special assistance be given to customers in designs, specifications etc., and this activity becomes increasingly important when the market becomes more competitive.

A wide variety of approaches are used among the companies that have adopted programs designed to reduce service costs. One executive reports that a clearer definition of service policy has resulted in reducing the amount of free service and increasing the number of cases in which service is charged to the customer. A wire company reports that by improvement of products it is reducing the need for customer services.

Examinations of the services given by competitors may also lead to savings.** One department of a chemicals company, for example, found that it was giving much more extensive service than any of its competitors. The company was able to reduce its service staff in that department and still give better service to customers than its competitors offered.

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An oil company discovered that the cost of giving burner and consulting service to fuel oil customers was prohibitively high. They transferred this type of service from a company operation to their dealers and distributors.

A manufacturer of machine tools reduced service expense by withdrawing servicemen from district offices and handling the work out of the home office. This company reports three results from adoption of the new policy. First, it has reduced the amount of free service formerly rendered. Secondly, it has transferred part of the service load to salesmen rather than to a serviceman. Thirdly, time of the servicemen is utilized to sufficiently greater advantage to more than offset the increased traveling expense in having servicemen operate out of the home office.

Some companies have established training programs to aid in solving the service problem. An oil company reports increased training of its salesmen and agents in technical aspects of the products. As a result of this training service problems can be handled on a local level. A manufacturer of instruments and controls has established a training school for the personnel of its customers' companies. This company reports:

A large factor which we feel reduces the cost of providing service to our customers is the operation at our plant of a training school to which customer companies send certain of their personnel. Men who take advantage of this

training are not subjected to a rigid "course," but instead are provided with the type of specialized training which will be of greatest assistance in servicing their particular equipment. The operation of this training school tends to reduce the service which we are called upon to provide, and often enables the customer to effect maintenance economies.*

The salesman is in a large measure responsible for the abuses connected with service with respect to equipment he sells. If he were spending his own money he would frequently use better judgment. There are many instances where a salesman has agreed to loan equipment for demonstration purposes where no demonstration was necessary as that type of equipment had years before been proven to be entirely satisfactory for similar applications. After a considerable amount of work had been performed the equipment was returned to its owner and some excuse given for not making the purchase. In the meantime very important work had been performed. Had the salesman handling the negotiation exhibited the proper courage and intelligence, he could in all probability have sold new equipment or rented that which was used gratis. In any event, he should not have agreed to the loan.

In another instance, a piece of apparatus had been in successful operation approximately 10 years, and the manufacturer was asked to make certain repairs without charge. This request should never have gone beyond the

salesman who should have taken a positive stand and had no difficulty whatsoever in proving that the request was entirely unreasonable.

Sometimes these unreasonable requests are sincere and made without due consideration of the conditions, and sometimes, they are made to see just how far the manufacturer will go. In any event, unless the salesman takes a positive stand, the individual making the request is encouraged to feel that, after all, his position may be justified. This makes it difficult for the home office to refuse the request.

B. Minimizing Field Calls

One of the big items on any technical service budget are expense items for field trips. It is inevitable that a manufacturer must send his representatives on many field calls throughout the year to all parts of the country. On these trips, a Technical Service Representative is expected to, and does, travel first-class. If speed is of the essence, he flies to his destination. The length of the trips vary from a short hop from the home office to extended week-long or longer trips. First class hotels (when available,) eating on public transportation, entertainment are other sources of expense on these trips. The Technical Serviceman, like the salesman, is expected to do a certain amount of entertaining. Often, his contacts at the customer's plant are plant managers, or other high,

responsible officials who must be catered to due to their influential positions. These expenses can get out of hand, and are quite commonly the first target when an austerity program hits the Service Department.

However, the importance of technical service calls has been well established from previous discussions. They assure the manufacturer of customer good will and repeat business. But due to the expense of field calls, it is vital that unneeded visits be eliminated, and customer requests for help be handled by other than actual plant visits if at all possible. An executive of a company manufacturing and selling scientific instruments and technical laboratory apparatus had the following comments on unneeded field trips:*

I happen to remember when we were called upon to send a man from Philadelphia to New Orleans. We received an urgent call for help, equipment had just been received and it wouldn't work. We sent a man all the way down there only to find that the man hadn't removed the packing from a point of the instrument which was perfectly in view. He had entirely overlooked it and arrived at the conclusion that the thing was broken. So he called for help, and we sent the man down there. The man was tremendously ashamed over it. He recognized it was a straight case of dumbness on his part. We could see, however, that he didn't wish the company to know about it as he felt he was going to catch it pretty stiff. So we didn't say anything about it. The cost of that trip has paid for itself a large number of times since then. We have a firm friend in that man. Such things as that episode, which I grant you is an extreme case, illustrate what I mean.

For reasons such as these, we welcome practically every request for help, no matter how ridiculous it may appear, as just one more chance to draw our clientele into closer relationship with us. Because of these reasons we consider the approximately 2 per cent of our gross sales it costs to operate our Service Department a low amount compared with the value of the results. The fact that we have found a Service Department, conducted more or less silently upon a "no-charge" basis, a paying proposition is, however, more than just the substantiation of a theory of management. It is an undeniable testimony to the intrinsic diligence, honesty and fairness of American industry.

Another top executive of a machine tool manufacturing company is not as philosophical as the above gentlemen when it comes to the subject of unnecessary field trips. He had the following to say:*

After one machine had been in operation for several years, we received a letter of complaint from a large customer to the effect that the head was leaking oil. We were obliged to send a man several hundred miles to reset a gasket and apply a coat of shellac. A year or so ago we received a frantic telephone call from an instrument maker in New York, who claimed his machine was turning taper. He had a shop full of high grade tools; his whole business is that of manufacturing scientific instruments; yet we were asked to send a man to New York. On arrival the only thing he did was to spend 15 minutes in leveling a machine that the customer had originally leveled properly, and had had in operation satisfactorily for several years.

The expectancy of free service has gone so far that our Dallas representative a year or two ago was called upon to make a trip from Tulsa to southern Texas to diagnose a difficulty with one of our machines, and upon arrival, the customer complained that he had lost several days time in operation on a most important contract,

claimed faulty workmanship in the machine, etc., etc. All our man had to do was to go to a hardware store five blocks from the customer's plant, purchase a new set of roller bearings, standard in every particular, pick up one wrench, remove two nuts, insert the new bearing, and pronounce the machine O. K. Much of this will sound ridiculous to you but such cases could be multiplied from our experience.

I have tried to give a picture of the drift that we are experiencing in the machine tool industry, for what I have described above is not only true of our turret lathe business, but of all machine tools. The competition in our industry, as in others, I presume, is mostly responsible for the continually increasing offers of free service as part of what we have to sell. In other words, we have asked for much of the trouble we are in, but now we are asking for a means to get out of it.

One technique employed by most companies is to publish bulletins, brochures, and pamphlets of all types describing in detail the use of their products. Many requests for help can be adequately handled by referring the customer to information printed in these bulletins. The salesmen in many cases carry these bulletins with them or have easy access to them. In some companies, they have regular mailing lists with their customers continuously receiving the bulletins which would be of interest to them. The Diamond Alkali Company, which sells basic chemicals to about 60 industries, maintains a Technical Service Division which supplies help and advice to users of its products. In one year this company distributed 8,000 copies of its Chlorine Handbook, 4,000 copies of its Chromium Chemical Handbook, and 8,000 copies of its Silicates Handbook

containing highly detailed technical information about the properties and uses of those chemicals. Merck and Company, maker of fine chemicals, publishes and distributes the Merck Manual, and the Merck Handbook, which are exhaustive compendiums, one on the characteristics and behavior of diseases and the other on the properties and uses of chemicals employed in the treatment of disease.

The manufacturer, however, is not assured that the customer will read the bulletins or, if he does, will properly interpret the instructions.

The use of the telephone may quite often avoid an expensive field visit. A discussion of the problem at hand between all interested parties may get to the core of the matter or may result in some experimental steps being suggested which could either delay the service call or even completely eliminate it. A Service Manager of a District office of the Pitney-Bowes Company, a large manufacturer of office equipment machinery, had this to say concerning the use of written instructions and telephone service:*

Hundreds of service calls are solved over the phone every week. We have trained our telephone operators to question the inquiring customers concerning the symptoms of their difficulties and to look for the easiest thing first. About 90% of the calls are for lubrication, cleaning and oiling of machinery and, in most cases, are due to lack of attention and proper care. The value of bulletins and pamphlets containing

detailed operating instructions is of limited use to us due to the high turnover of operators (mostly girls) operating our equipment. Also, quite often, the manuals are misplaced or lost shortly after our equipment is installed.

Quite often a phone call will bring out the fact that there is no problem or what the salesman reported as being the problem area is not that at all. There may be more than one problem involved, or some other individuals might be able to handle these calls more easily than the individual initially requested to handle the job. All of these points and many more are discussed in greater detail in the next chapter in the section on effective technical service calls. It should be emphasized that all of the above techniques not only save the expense of travelling to the customer's plant but also improve the efficiency of solving the customer's problems.

C. Leasing and Its Effect on Service

There are definite advantages to both the manufacturer and the buyer of certain type of machinery and equipment in leasing rather than selling (or buying) outright. To the manufacturer it assures a steady income from the equipment and gives easy access to a "secondary" market for materials processed with his equipment. However, the manufacturer is saddled with the burden of the capital investment and the service responsibilities that go along with the lease. This leasing policy guarantees the customer

first-class equipment in excellent running order at all times, with the responsibility and cost of technical service being borne by the manufacturer. The only expenses incurred by the customer are for parts, with the manpower being furnished by the manufacturer at no charge. The legal ownership of the machinery still resides in the manufacturer, and this implication affects the methods of rendering technical services. The leasing of machinery has been more common in the shoe industry than in any other field. The following discussion on the United Shoe Machinery Corporation will attempt to show the differences in the handling of technical service when equipment is leased rather than sold outright.*

Modern shoemaking depends on the efficient functioning of shoe machinery. To keep its shoe machinery in efficient operating condition, the Corporation has stationed over 800 trained servicemen in key locations throughout the country. Their daily activity consists of repairing, adjusting, installing, instructing, and testing. The only charge paid by the user of the machinery is for the parts used in the repair work. This, however, was changed by Government litigation against the United Shoe Machinery Corporation which we shall discuss a little later.

Fundamental to the works of these servicemen are the machine parts available from inventories in the 16 USMC Branch Offices. Each inventory reflects the locality's demand.

Its extent is based on the type of machines in use and is affected by the kind and number of shoes produced in that area. The pipeline of parts supply originates with the Beverly Factory inventory of 107,000 different parts. This substantial investment in machine parts and skilled manpower illustrates the importance the Corporation places on providing prompt and efficient service. Constant effort is made to keep service performance at high levels in all shoe manufacturing areas, and close supervision is maintained to keep inventory and personnel efficient and effective.

The leasing rather than outright sale of equipment assures the manufacturer of a ready-made market for accessory machinery, parts, and materials which may be used in the goods being produced. The policy of not billing customers for separate charges for services rendered serves the dual function of insuring customer satisfaction as well as protecting the manufacturer's market. On December 15, 1947, the Government filed a complaint against United Shoe Machinery Corporation under Section 4 of the Sherman Act. The complaints were that United Shoe had been monopolizing interstate trade and commerce in the shoe industry of the United States. United Shoe was also charged with monopolizing the distribution in interstate commerce of numerous shoe factory supplies, related supplies, and tanning machinery.

On February 18, 1953, after over five years of court sessions, the Federal District Court in Boston an-

nounced its decision, finding that the Corporation supplied over 75% of the "shoe machinery market" and thus had "market power" or "market control." This control USMC had maintained by its policy of putting out certain machines only on leases and furnishing, without separate charge, service to its customers in respect to those machines. The verdict was appealed to the Supreme Court of the United States in Washington, and on May 17, 1954, the Supreme Court, announced its decision affirming the judgment of the District Court.

Under the Final Decree in the civil action brought by the Government against the Corporation under the Sherman Act, United Shoe was required to make substantial changes in their business practices relating to shoe machinery. The court found that these practices were honestly industrial and were the sort of activities which would be engaged in by other honorable firms, but because of their dominant position in the shoe machinery trade the Court held that certain of these practices must be discontinued.

Since the organization of the United Shoe Machinery Corporation in 1899, and for many years prior thereto, it has been customary for shoe machinery manufacturers to offer the more important machines on a lease basis only. Under the terms of the Decree USMC could continue to offer machines for lease but any machines offered for lease must also be

offered for sale. Furthermore, the 10 year lease, which had been used for more than 30 years, had to be discontinued and a new form of lease adopted. The new lease was for a term of five years but the lessee would have the right to return the leased machine at any time after one year, subject to certain payments, as provided by the Decree. Repair and other services must be charged for separately, whereas under the old form of lease such services were rendered without separate charge. Under the Decree no machines can be leased under the old form of lease after December 31, 1954, and the new form of lease has been in use since that date. Under this plan a lessee would have the right to continue to hold his machines under existing leases until their normal expiration dates, and would have the option to terminate an existing lease as to any machine at any time prior to the expiration of the fixed term and purchase the machine, retain it on the new form of lease or return it.

What did all this mean to the customer with regard to technical service? It meant he had to pay \$4.50 per hour for any services furnished to him by United Shoe Machinery Corporation. The Court Decree stated that after December 31, 1954, no machine could be leased on the basis of furnishing repair and other services without separate charge. With respect to all machines shipped after that date, or any machine retained on a new form of lease upon the expiration

or termination of an existing base, such services must be charged for separately.

Needless to say, the transition to chargeable service caused shoe manufacturers to review carefully their requirements for service, with the result that USMC service staff was reduced by nearly 50% since 1955. On January 1, 1956, an annual service contract was introduced whereby a shoe manufacturer by guaranteeing to pay for a minimum of 250 hours of service a year for a particular factory is rendered service at a rate of 10% less than the rate established in the Tariff of Charges filed with the Court. Two hundred and twenty-one such contracts were in effect as of February 28, 1958, giving evidence of the value placed on USMC service by a large proportion of manufactures who are of sufficient size to take advantage of the contract terms. The response was highly gratifying and a wonderful vote of confidence indicating that the value and high standard of the service offered by the Corporation was recognized.

As older leases expire or are terminated and as new machines continue to be shipped, the number of machines on which USMC must charge for service is steadily increasing. This new source of revenue has enabled USMC to minimize the increase in charge under the new lease terms. This revision in lease rates was necessary to compensate for substantial increases in costs and expenses. Many factories at a

considerable distance from USMC Service centers have established their own service organizations because of the additional cost of travel time of United Shoe representatives. However, more than 50 domestic service locations are still in operation so that prompt efficient service can be provided in the principal shoemaking districts. A continuing educational campaign is being carried on to make the industry more aware of the value of USMC service. USMC has instituted programs of "preventive maintenance" which provide for careful inspection and adjustment so that conditions which would lead to major breakdowns or faulty work may be corrected before they cause trouble and heavy expense. This program has been well received.

The above discussion has pointed out some of the differences in the operation of technical services under a leasing system. Its implications as a force to protect market interest led the government to frown upon the arrangement of "free services" to customers. Hence, Technical Service, like any marketing tool, has its limitations in its application by management. This is especially true for dominant companies in an industry under government scrutiny.

D. Suggestions for a Service Policy

When the buyer cannot get the expected utility from a product entirely by his own efforts, it should be the policy of the seller to provide for adequate service. Adequate in this instance should connote service which avoids as much

inconvenience and annoyance for the buyer and as much interruption of work as possible. Furthermore, the work involved in service should be so arranged and administered that it is done at a reasonable cost. Still it should be recognized that ready availability of service work is much more important than low cost.* People, in general, are not averse to paying a reasonable charge, even something in addition, if they can be sure that the work is done properly and that their troubles with the product are thus over for the meantime. On the other hand, few things are more irritating to the user and more destructive of confidence than to discover, subsequent to the performance of service work, that the difficulty with the product has not been overcome. In order to protect the reputation of its products, a company should have adequacy of service with all that term suggests, as the cornerstone of its service policy.

The need for a definite policy on service should be stressed. Perhaps it is more needed for service than for many other activities of business enterprise, for service of the survey type is a promotional weapon which has customarily been used indiscriminately. The use of service for influencing the potential buyer can be employed to excess, and often is applied to products with very limited demand. The buyer, realizing the value of

*7, p.285

these added services, takes as much as he can get which is quite often more than the seller had in mind. Any activity in business which gets out of hand so easily needs careful study in order to create a definite policy and to establish procedures and controls which will put that policy into effect.

An effective service policy should also comprehend definiteness of arrangements between the seller and the buyer, even in some cases prior to survey work. All service for which no definite charges are to be made should be carefully defined as to nature and scope. If charges are to be made for portions of the service work, the buyer should be so advised, and every effort should be made to establish the fairness of such charges. By such definiteness and prior knowledge on the part of the potential buyer, the seller can be protected against unreasonable demand at least partially and against the abuse of the service privilege on the part of the buyer. The buyer likewise is protected, as he can more readily judge the value of the products and services contained in competing proposals. He needs definite information in regard to what each bidding company proposes to do in order to arrive at an intelligent decision regarding purchases. Ease of administration is another likely outgrowth of definite arrangements and an

established service policy. There must be standards for guidance of those individuals who handle service matters, for otherwise each particular arrangement or complaint will require executive attention. This is the chief virtue of a settled policy and of established procedures for putting a policy into effect.

Service should be administered and charged for in such a manner as to avoid a varying price policy. While this should be done as a matter of policy, it should be recognized that all price discrimination cannot be avoided, especially when people buy a product under dissimilar conditions and require service in varying amounts. It is not wise to attempt to remove all price discrimination, as small variations are unimportant. An attempt to do so would unnecessarily complicate the price structure and prove very difficult to handle. Still, it should be a company's policy to administer service in such a manner that varying price is at least largely removed when conditions are such that substantial variation is likely.

Policies should be based on experience as well as on deductive reasoning, and adequate records are thus highly essential if a concern is to act rationally in relation to service work. Experience resides in records and in the minds of men. The former are much more likely to be exact and uncolored by reactions to very recent experience.

Those who are responsible for service should know what proportion of service costs are incurred for different types of machines, types of customers, and the relationship between costs and the size of the order. They should also attempt to find out the effect of service work on subsequent purchases by the same buyers. Such information, if used, will aid in the pricing of products; in determining whether a separate charge for service should be made; the amount of the charge whether for survey, installation, demonstration, or after-service; the promotional advantage of service; and, perhaps, will furnish some evidence as to the aid given in merchandising work. Only through adequate records can a company know whether, in fact, a varying price policy is being followed and thus be able to reduce the extent of variance by appropriate action. In general, complete information on service costs is likely to result in more acceptable decisions on the part of management through lessening the area in which hunch and guesswork have their way.

CHAPTER VII

THE TECHNICAL SERVICEMAN

A. Training

To the technical service representative, training is a continuous thing. Even an experienced man who has been "through the mill" many, many times can learn something from a machine operator in a customer's plant on a routine call. The unexpected is common, and the good judgment and versatility of the serviceman is continuously put to the test. The academic background of the representative depends primarily on the complexity of the product he services. However, many large corporations do not hire directly for technical service work but train men in other areas of company operations before moving them into this section. Salesmen quite often make excellent servicemen due to their first-hand acquaintance with both the products and customers they will service. Laboratory men from Product Development and Research groups many times become good Technical Servicemen. They have the advantage over the salesman in having a higher degree of technical knowledge about the product, but have the disadvantage of not knowing the customers. Research men also many times have too unrealistic a view on the business world and many of their suggestions ignore the factor of costs. It is important that the

solution to a customers' problem be simple, practical and within his means whenever possible. Nothing loses a customer's confidence in a technical representative faster than ignorance of the "facts of life" and the serviceman persisting on an unpractical solution to a problem.

"On the job" training predominates over formal training in technical service. A short orientation period comprising of field trips with more experienced personnel usually precede the new serviceman's "solo" flight. A manufacturer of small machinery and office equipment gives mechanical aptitude and personality tests to prospective servicemen. Upon hiring, the new employee is acquainted with the equipment he will service by accompanying other servicemen on field calls and in training sessions at the branch office. Much time is spent in indoctrinating the new service representative with the philosophy that he should consider himself on the customer's payroll when he is working in his plant. An executive of this company had this to say:*

We have very little competition in our field but operate with the idea that it's just around the corner. Our thoughts are to the future. Many years ago, and even today, some managements looked upon service as a "necessary evil." We have always prided ourselves in quick, efficient service, and seek to render a "personal touch" in our dealings with our customers. Our philosophy is that technical service is a

protection of our investment. To our customers, our equipment is only as good as the service we can render.

Servicemen for complex machinery, or equipment must spend months and sometimes years getting acquainted with the technical aspects of their jobs. However, this does not minimize the necessity of proper indoctrination in company philosophy before their being released to their public.

B. How to Conduct an Effective Service Call

The following discussion* concerns various techniques which have been successfully employed by experienced technical service representatives in conducting effective service calls. Employing some or all of these suggestions will often result in more effective service to the customer at a much lower cost to the manufacturer.

The E. I. DuPont Company presents these points in a training program for their sales personnel. These helpful suggestions are given in the second person form to render more realism in their presentation to the Technical Service Representative.

1. PREPARATION

The first major point is to get prepared for the mill visit. If you are not completely familiar with the customer's problem, telephone him to:

A. Get Definition of Problem

You should determine what he expects will be accomplished by the mill visit. Perhaps, he has more than one problem he would like to talk about at the time of the visit. A telephone call prior to the visit will give an opportunity to be prepared on all points he would like to see demonstrated or discussed when you visit him. This statement certainly sounds very basic and elemental. However, many times plant calls have been made to customers believing that a particular problem was the one to be discussed on the visit only to find that through the channels of communication that the problem was not accurately outlined. Quite often the superintendent or manager of the mill had explained the problem to a non-technical man with whom the salesman had talked. The salesman then in turn got a story which was not as accurate as if it had been obtained directly from the manufacturing people involved. A telephone call to the manufacturing people who have experienced the difficulty or problem will quite often clarify the condition prior to a mill visit.

B. Critically Evaluate the Problem

After getting a complete and accurate definition of the problem, you will be in a much better position to

determine if a service call is necessary. Perhaps, you can give the customer the desired information over the telephone and not have to make a visit to the mill. This not only saves your expense and time of traveling to the mill but it also improves the efficiency of solving the customer's problem. During the telephone call to the customer, one should determine if any preliminary or exploratory work needs to be done prior to making a visit to the mill. Be sure to ask the mill personnel all questions you can think of to help you analyze the scope of the problem. This will give you a better understanding of what tools or equipment you should take with you if a mill visit is necessary. Sometime the mill personnel are unable to answer all of the questions because they have inadequate information. If you do not have the information that they need to answer their questions, but know that you can obtain it for them, do so. Once you have obtained this information be sure to telephone it to them as soon as possible. Quite often the mill personnel will have to call you back with information you have requested.

C. Agree on Action

In your telephone conversation with the customer, reach an agreement on the time, place, and personnel who will be involved in the actual mill visit. If the customer has to telephone you with any information prior

to your visit, agree in the initial telephone call as to when or approximately when such information will be given to you. Be sure to be available at the specified time so that the customer will not have to wait for you. Once you have gotten an accurate, or as complete a definition of the problem as is possible, agree with the customer as to what you hope to accomplish by a mill visit. If equipment such as a sling psychrometer, surface pyrometer, maximum recording thermometer or other portable equipment is needed, plan to take them with you unless the customer specifies that he has such equipment available.

The following is an example of an incident which was embarrassing, expensive, and resulted in quite a delay in servicing the customer. The Technical Service man was called by a salesman in one of his domestic sales districts to visit a yarn spinner on a particular day and to contact the mill superintendent. The Technical Service representative flew quite a distance from the home office to the mill on the prescribed day. Upon arrival at the mill at the specified time, he found that the mill superintendent was not in town and that no one knew of his expected visit. There was no one at the mill who was able to assist the Technical Service man in this particular call and he had to return home. This situation resulted from the salesman and the mill superintendent

not reaching a definite agreement that the service call would be made at the prescribed time and date. However, all of the blame is not to be put on the salesman in this particular instance, because the Technical Service representative could have saved this delay by making a telephone call to the mill superintendent.

D. Be Helpful

Remember that the quantity of the product the customer buys will depend upon your effectiveness. Therefore, be realistically optimistic and give the customer a true picture of his problems, the chances for solution, and what the solution can mean to him. Sometimes it is best to explain to the customer that you do not have a solution to his problem but that you think a mill visit will help you to determine more accurately the scope and source of his difficulty. Do not treat the customers' problems as if they were small and insignificant and can be solved in just a very short while. This will give the customer the impression that he is stupid and that you are of superior intelligence. Always give credit to the customer's ability for after all he has been a successful businessman and has a great deal more experience in his particular operation than any of us. Try to create good will with the customer and with his employees.

2. VISIT

A. Review the Problem

The next step is the plant visit. If the trip has to be cancelled for emergency reasons after the initial preparations have been completed, it is very important that the customer with whom you have talked be notified as soon as possible.

Once you are with the customer, ask him to explain the problem and give him an opportunity to vent his feelings. Encourage him to talk and ask for other problems that may be troubling him. It is entirely possible that the problem he is emphasizing is not the most serious one. Such a discussion will develop additional information that will assist the Technical Service man in solving a problem effectively and rapidly.

B. Agree on Program of Work

Mill and Technical Service representatives should discuss and agree upon the approach to the problem. This is of particular importance if laboratory work is to be required. Quite often on a visit, the necessary investigation cannot be conducted in the customer's mill for a lack of proper testing equipment. When this is the case, you should reach an agreement with the mill personnel as to what testing work is required and just what you expect that work to accomplish. Quite often

materials are received at the laboratories of the manufacturer for "complete testing." Such a request leaves the lab in a most indecisive mood because they have no idea what objective the servicemen or customers have in mind. Test results may be sent along which do not mean as much as another test would have meant. If the end-use of the material were known or what goal testing procedures were meant to accomplish, the lab would have served the customer much better. For the serviceman to take the material and send it back to the lab for testing may sound like good assistance to the customer; however, unless there is a specific result you hope to accomplish by the testing, the customer will be disappointed when the data are reported.

Quite often the solution to the problem can be determined during the visit. Be sure to give credit to the mill personnel for their cooperation and assistance. It is better for everyone concerned if you can create the impression that the mill personnel were the ones who solved the problem.

C. Closing the Call

Know where you stand. Is the mill now satisfied? Can they produce at the desired rate? Will the mill use your companies products in the future? Is any follow-up required or is anything else expected of you, the Technical Service representative or the manufacturer? Be sure that

the customer is satisfied that, (1) you have obtained the results as expected and agreed upon, or (2) that further work is needed and will be done by you.

At the time that you leave the mill, see the same people, if possible, as when you entered. Compliment them on the cooperation and give credit to their employees. Once you have accomplished as much that can be accomplished in a visit, do not prolong your stay. However, do not give the impression of being in a hurry to leave. Try to make the call mean improved sales of your company's products.

C. Tips for the Serviceman

This approach is slightly different from what we have discussed so far. This outline is a listing of check points also employed in DuPont Training Sessions which should be interesting and helpful.*

A. Preparation for Technical Service Work

1. Know your business.
2. Know your customer and his problem.
3. Plan.
4. Consider competition.
5. Set priorities--recognize emergency problems and act accordingly.

6. Be selective:
 - a. Spend your time where it will do the most good for the sale of your products.
 - b. Know when and how to say no to a request.
7. Tactfully refuse service work when return does not merit the investment of your time and effort:
 - a. Direct customer to outside consultants.
 - b. Explain why your service must be refused or limited (economic reasons).
 - c. Explain legal consideration.
 - d. Demonstrate non-practicability.
 - e. Encourage and assist customer to solve his own problem.
 - f. Do limited work for good will if potential merit it.

B. Presentation-When Contacting Customers

1. Know how to conduct yourself with your customers:
 - a. Use proper channels.
 - b. Be aware of internal pressures and politics, don't get involved.
 - c. Solve the customer's problem instead of fixing blame.
 - d. Give service based on facts-don't pretend.
 - e. Be competent--maintain psychology of success.
 - f. Don't oversell your product or your service.
 - g. Make your customer look good.
 - h. Be tactful and diplomatic
 - i. Don't over-simplify: be realistic about existing problems.
 - j. Give personalized service--convince customer of your sincere interest in his operation.
 - k. By proper selling, convince customer to follow your suggestions.
 - l. Sell operating personnel as well as management.

m. Capitalize on any luck which you may experience.

2. Avoid legal liability:

- a. Be sure customer makes decision.
- b. Put it in writing.
- c. Don't admit liability--particularly true in complaint investigations.
- d. Don't over-do expertness.
- e. Keep the customer's confidence--don't tell other people about a customer's difficulties or business.
- f. Differentiate between opinion and fact.
- g. Direct customer to competent processor.
- h. Avoid inadequate testing and inadequate test results.
- i. Properly use disclaimer type of statements.

C. Coordination and Communication - in maintaining good coordination and communication

- 1. Employ teamwork--don't do it alone.
- 2. Use proper channels within your and our organization.
- 3. Use all available services and equipment.
- 4. Develop and utilize cooperation among your customers.
- 5. Insure continuity of effort--follow up.
- 6. Strive to get the most service out of your available time.
- 7. Recognize importance of prompt action.
- 8. Be thorough and explicit.
- 9. Brief persons new to the problem.

The above discussion on the Technical Service approach to problem solving and the philosophy of Technical Service work did not reveal anything which the good serviceman did not know already. The attempt was to logically list various factors which will be of assistance to the serviceman in his future work with his customers. These ideas will assist in bringing more rapid and explicit service to the customer, at a lower cost to the manufacturer, and serve to promote and increase the sale of the manufacturers products.

D. The Security Problem (Safety and Diplomacy)*

The security objective of the Technical Service Representative is to help his company sustain competitive business superiority and keep it in a preferred position in the "Market Place."

Safeguarding the secrecy of technical information is always of prime importance to his company. Its strength lies in being leaders. Service Representatives are not only tied up with very sensitive rumor-loving industries but competitors in the industry are rapidly becoming more alert, more technical minded, and more numerous. To stay a leader is becoming more difficult.

In many sales organization, opportunities to create security leaks have grown more numerous. More of

the confidential type information must be made available to more people, and many of the marketing strategies call for precise timing and studied judgment before they can be made public. Improved planning in what we say to whom and under what circumstances is necessary. Follow-up of these practices should be made to hold our security position. We should be mindful of the fact that all leaks that occur are not apparent to us but that does not mean they are not doing damage.

The necessity for security is real and its breach can cause significant changes in the progress of a company and to each technical service representative as individuals. What are some of these possibilities?

1. Lose patent rights.
2. Lose advantage of being first.
3. Contribute to price and product confusion in the market place.
4. Create chaos, trouble, waste of time and effort that can come from a security break or perhaps damage a relationship that never can be fully repaired.
5. Lose customer faith in our good business judgment. Salesman is the Company. Customer thinks that the Company is speaking.

Good security working habits are important and can be developed by proper planning. These will soon become habit if employed in your everyday routine.

Some reminders to help improve working habits:

1. Some types of information just shouldn't be mentioned any place outside a confidential office. (Not in halls, lavatories, trains, at lunch, etc.) Similarly, answer questions directly; negative information could also be a leak.
2. Plan ahead the answer to probable questions where you can expect security problems.
3. Any contact with the press should be handled by Public Relations. Follow exactly the prescribed outline for releases and publicity. Stick to the letter of a press release. Do not try to read into it facts not stated. Stick to values to the customer.
4. Marketing plans should be treated as highly confidential information since they tell in some detail how we run our business.
5. State facts simply--do not over describe or amplify.
6. Watch for the possibility of small seemingly non-important information, really becoming a

point on a line where real damaging deductions can be made.

7. Some type of information should not be given to anyone not cleared to receive it. This includes your own co-workers, old customer friends, and newly found friends you want to impress. Don't be afraid to build friends by saying "no."
8. Skill is needed to differentiate between real leaks and well-grounded rumors. Salesmen often are baited by customers.
9. Any trips with customers to Plants and laboratories should be properly guided.
10. Security aspects should always be carefully considered preparatory to discussions with vendors.
11. All formal papers should be cleared before release in trade meetings, etc.
12. New sales people, including office personnel, should particularly watch themselves to prevent leaks. It is natural that they should want to display their newly found knowledge. Watch telephone switchboard.
13. Proper use of mail; also how one's own mail is kept secret.

14. Sales bulletins, themselves, must not be given to customers or to any outsiders. The information can, however, be disseminated as appropriate.

Confidential information can be composed of many things. For example:

1. Financial data not made public.
2. Price data, costs, pricing consideration, profitability.
3. Technical information which includes process information, technical data, new product information.
4. Manufacturing data, such as rate of operation, production plans and schedule, etc.
5. General organization information of personnel changes not made public.
6. Sales forecasts.
7. Long-range planning. (Effect on customer)
8. End-use or market penetration strategy.
9. Are you willing to sign your name to what you have said and let your associates see it?

To insure proper security measures in an organization, the following suggestions may be useful:

1. Discuss the security problem frequently at Monday morning meeting.

2. Watch for security break possibilities in running of the day's business.
3. The extra need for follow-up of new sales people should be recognized.
4. Keep exposure and temptation away from your people as much as possible by seeing that they have released material for their use and that the confidential type is kept to a minimum.

A top executive of a large company emphasized the topic of security with the following comment:

We hope that all your people will be sufficiently aware of this problem and will be able to sense the situation and deal with it. The success of company security depends upon an environment which emphasizes individual responsibility exercised at all times, by all of us. Its greatest asset has been all its people, and its guiding philosophy that there is no privilege that is not inseparably bound to a duty.*

One responsibility of every Technical Service Representative that hasn't been discussed before now, is the responsibility of the individual to himself, to his company and to the customer to work safely. The best rule is to use common sense and to anticipate all safety hazards. Here are some of the Do's and Don'ts regarding working safely:

1. Do not operate customer's machinery. The operator should maintain this responsibility.

2. Remove your coat and be sure your necktie is tucked safely inside your shirt before working around moving machinery. Do not wear floppy or loose clothes around equipment that could entangle clothes.
3. Wear safety glasses wherever there is a possibility of eye injury. Safety glasses with side shields should be worn in working with corrosive chemicals that could splash into the eyes.
4. Wear safety shoes when there is a danger of receiving foot injuries.

Anticipate all hazards and be prepared to cope with all injuries. In this manner accidents are prevented.

CHAPTER VIII

CONCLUSION

A. Future of Technical Service

The logical question to ask at this time is: What part will Technical Service play as a marketing tool in our dynamic economy? From previous discussions, it has been brought out that Technical Service has grown tremendously in a relatively short period of time, not only in the number of people involved in service work but in its wide scope of activities. All indications are that this trend will continue to pace the expansion of industry.

An example of the importance of technical service in the marketing of new products or improved old products would be the tremendous boom in the field of polyethylene. DuPont, Bakelite, Monsanto, and Dow Chemical have all stressed the importance of Technical Service in the marketing of this versatile plastic in the past several years, by opening very elaborate customer service laboratories. These labs will solve customer application and packaging problems as well as assure the potential customers that research, technical service, and development teams backed by experience in molding, extrusion, and coating fields will be available to provide competent service. DuPont's plastic sales have doubled in 8 years, accompanied by a doubling in Technical Service calls. This is merely

one example of the part that Technical Service plays in the marketing of industrial goods today. The accent is definitely on service.

The problem of how much of the budget should be spent on Technical Service is a perplexing one. The objectives and functions of Technical Services differ from one company to another even within the same industry. The allocation of costs for certain operations is ill-defined and not well established, which makes it very difficult to prophesize what percentage of sales should be assigned to the Service budget. Some companies which regard service as a valuable aid to selling and are quite willing to pay for it charge the cost either to advertising or to sales promotion. In either case the service costs are regarded as a cost of marketing. One paper company allocates charges incurred in advance of sale and after the sale to sales promotion. These costs are held each year within a reasonable sum in direct proportion to total sales. Troubles in allocating costs are not unique for many other marketing functions such as Advertising and personal selling have the same problems. It would be advantageous for trade associations in this area of Technical Service to conduct studies to attempt to define service activities and better establish Technical Service's position in the over-all Marketing budget.

The complexities of products and product application, the pressure of competition, and the buyer's increasing expectations of the fringe benefits of technical service are all contributing to the growth of this field. Another important factor is the high quality of these services which has given the customer much confidence in the judgment and opinions of the manufacturer's representatives. Many instances are known where the customer depends on servicemen's opinion whether or not new equipment is needed. This vote of confidence typifies the growth of Technical Service in this expanding economy. However, this reliance upon the manufacturer's organization to furnish new ideas and provide technical innovations may lull an industry into complacency. Many companies in the textile industry neglected to keep up their research programs and depended almost exclusively on synthetic fiber producers for technical assistance. Much to their chagrin, the day came when competitors forged ahead, and the short-sighted companies found themselves without adequate facilities or manpower for their research and development. Technical Service should be considered as a temporary help, and individual firms continue on their long-range goals.

B. Essentials of Service Work

Quality and speed are of the essence in service work, both in industrial and consumer goods. Some

manufacturers are extending their systems of factory-owned regional warehouses and service centers, relieving the dealers of holding inventory, servicing and delivery. Part of these expenses are met by trimming the markup to the dealers. This set-up insures quick service and quality to the customer, and is more economical to the manufacturer. One major manufacturer of electrical goods found that local dealer's cost of service came to 3.3% of sales volume. The centralized, factory-owned operations cost only 1.90% of the sales dollar. This "do it yourself" approach to service on the part of some large manufacturers may not be economical for smaller concerns. In these situations, it is important that the independent dealers hired to carry out in-warranty service for the manufactures are closely supervised to insure efficient and quality service. An example of the former situation is the National Cash Register Company. Its products are distributed in the United States through 500 offices. The field organization consists of more than 10,000 persons, including selling, service, and office staff. Service is provided through an organization of more than 4,000 skilled technicians operating at 500 service points.

Confidence and consideration between the manufacturer's technical service representative and the customer is another essential for effective service work.

There is nothing more aggravating than sitting in a customer's reception lobby trying to solve his problem by making suggestions and then waiting while the customer goes into his factory to try them. Such situations may be due to the customer's distrust of "outsiders" or a feeling of superiority on his part. Regardless of the reason, such behavior must be terminated by cooperative efforts by both parties for continued effective working relationship. The area of service often necessitates much "give and take" by the giver and the user, for their ideas of extent of service may often conflict. It is at this point that the manufacturer must draw the line and establish his service policy. However, in the past, it has been the area where most manufacturers have shown little courage or inclination to do so.

C. Recommendations

Technical service will remain an effective marketing tool in today's competitive industry, but its use must be tempered with much good judgment and discretion. It is much too large a business expense to use indiscriminately and haphazardly. The considerable demand for a manufacturer's technical services is in many cases his own fault. An inadequately engineered product, rushed to the market before all the "bugs" are worked out, results in the work which should have been done at the manufacturer's

factory being performed in the customer's plant. This, needless to say, is much more expensive, and may affect repeat business as well as give the manufacturer a bad reputation. Mr. Arthur Steele, manager of Technical Service for Union Carbide, had this to say on the subject:

More exhaustive application development research before products are offered for sale should be on the upswing in future years. With much of the development work already done, the customer is more willing to "give it a try." Also, it's more economical for the supplier to solve a host of service problems at once (as he does with thorough application development work,) and have only minor adjustments to cope with later.*

This is one area where much work could be done which would result in ultimately reducing the costs of technical services.

Technical services should be brought into their proper perspective by manufacturers. Customers have come to expect all kinds of services and, in many cases, their requests have been unreasonable. Managements must establish definite policies on just how far they will go in attempt to control their costs. However, any steps in this direction must receive support by the entire industry if any such program is to work. The influence of service as a force to protect market interest is also of much interest to the government. Hence progressive managements should also recognize this limitation in the application of

* 30, p. 68

Technical Service in their marketing programs.

Many firms must come to the realization that Technical Service is not a temporary stop-gap, but has grown in industry to the rank of an important marketing function. Progressive managements have realized this, but others have not. Time spent in clearly defining and establishing a service policy results in efficiency of handling customer requests for assistance. Much goodwill is created and sales are increased.

This increase in sales, is of course, a primary objective of all marketing efforts.

There are many situations where a well established Technical Service Department is used very inefficiently and provides the company with but a fraction of its potential. In many cases management, fails to realize that service is a two-way street. The customer provides a source of information through his many years of experience in a highly specialized trade which could be a valuable aid to the manufacturer in his operations. The manufacturer, through his pre-occupation in his every day efforts, does very little to encourage customer cooperation in joint ventures which would be very beneficial to both parties concerned. Hence, a wealth of information remains untapped and a pool of ideas stagnated due to shortsightedness on the part of management. Closer relationships with customers could

provide much useful information to Research and Merchandising efforts of the manufacturer.

Better Product Development Research, closer customer cooperation, better defined service policies, and increased quality and speed of service can do much to increase the efficiency of Technical Service as a Marketing Tool for Industrial Goods.

APPENDIX

QUESTIONNAIRE USED FOR PERSONAL INTERVIEWSIssues and Problems Affecting Technical ServiceA. Types of Service:

(Related to nature of product and type of customer)

1. What are the various types of Services carried on by your Technical Service Department?

Related to the product:

- a. Direct customer assistance in use of product
- b. Supplying of technical information.
- c. Installation of equipment or process in customers' plant.

Separate from Product:

- a. Detailed study of customer's problems.
 - b. Development or designing equipment or process for potential customer.
 - c. Training operators and teaching executives in proper use of equipment or processes for maximum service.
2. Would you describe a typical:
 - a. Customer request for service.
 - b. Salesman request for service.
 - c. Company development work in industry.
 3. What is the size of your Technical Service Staff and how is it organized?

4. Does the Technical Service Department operate from the home office or from branches?
5. What comprises most of your Technical Service calls?
Field Service Product evaluation
Quality & Complaint work Development
6. What proportion of service is handled by:
a) Phone b) Mail c) Customer visit.

B. Costs of Service:

1. Do you charge for your services? If so, which accounts? (large vs. small customers).
2. How are your technical service costs allocated? (manufacturing, sales, etc.)
3. Are your customers charged for services if orders are placed elsewhere?

C. Company Policy:

1. Where is your Technical Service Department located in your organization chart?
2. How has the Technical Service Department developed in the past 20 years?
3. Are there trends in your industry in product designs which will affect your present service?
4. Will your Technical Service Staff expand in the next 10 years?
5. How does your Technical Service Department compare with your competitors?
6. What are the duties of the Technical Service Department towards other departments in your organization?

D. Customer Relationship Through Technical Service:

1. What is your main source of abuse from your customers?
 - a. Customers take service with no serious intention of buying.
 - b. Customers demand too much service, especially for trivialities.
 - c. Customers take your ideas, and either develops them themselves or take them to competing firms.
2. What remedies do you employ for various customer ill - uses of your technical service?
3. Do customers contribute anything to your company through the media of technical service?

Example: Donation of time, men and equipment to work on project of mutual interest.

E. Methods of Reducing Technical Service Costs:

1. What techniques do you use to reduce technical costs?
 - a. Clearer definition of service policy.
 - b. Improving products.
 - c. Examining competitors servicing.
 - d. Transfer service to dealers and distributors.
 - e. Operate from home office instead of districts.
 - f. Training program for salesmen and customers.
 - g. Effective salesmanship.

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V. Personal Sources of Information

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47. Mr. C. B. Finley, Manager, Employment Field & Corporate Headquarters, International Business Machines Corporation
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54. Mr. Albert Allard, Sales Engineer, White Electric Motors, (Authorized GE Agents)
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