Production control and personnel policies and practices of the Square D plant, Cedar Rapids, Iowa

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PRODUCTION CONTROL AND PERSONNEL POLICIES AND PRACTICES
OF THE SQUARE D PLANT, CEDAR RAPIDS, IOWA

by

Lyle Edmund Kramer

Chairman
Professor Walter L. Daykin

A thesis submitted in partial fulfillment of the requirements for the degree of Master of Arts in the Department of Commerce, in the Graduate College of the State University of Iowa

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CHAPTER I

INTRODUCTION

AIM OF THESIS

The underlying purpose of this thesis is to describe as objectively as possible two phases of management in industry as they are employed by the Cedar Rapids plant of the Square D Company. These are the functions of production control and personnel management.

An attempt has been made to present a general picture of company organization and operations as a basis for further understanding of this thesis. Upon this foundation, the reader may more clearly understand the various elements, procedures, and characteristics of the personnel and production control programs. The objective is not to critically evaluate these programs as they function in the Square D plant. Rather, the purpose is to scan briefly the nature of the managerial methods and practices which have contributed in a large measure to the successful operation and sound labor-management relations of the plant thus far in its comparatively short history.

HISTORY

The life span of the Square D Company extends back to the year 1903 in the city of Detroit. It was there in a small room that seven employees labored over secondhand machinery in an effort to fill the company's first order for 1,000 electric fuses; an order which today would be val-
ued at about $50.

Under these humble conditions was born a company which has since spread to the far extremities of our nation, and into Canada, Mexico, and Europe as well. With an original roster of only a few employees, the Square D Company now is classified as a medium sized firm with a working force of over 7,000 employees who punch time clocks in twelve modern plants. From the initial $50 order of 1903, the company's sales have since increased to $78,726,607 in 1955. This growth has taken place in the electrical field which is composed primarily of large, aggressive competitors. An explanation of the present company organization is necessary to understand the historical development of the company through the years.

Four basic manufacturing divisions form the superstructure of the company as a whole. Each of these divisions is headed by a vice president who is responsible for all the manufacturing, engineering, sales, and finance of his division. The names of these divisions are as follows: the Distribution Equipment Division, at Detroit, Michigan; the Industrial Controller Division, at Milwaukee, Wisconsin; the Electric Controller Division, at Cleveland, Ohio; and the Western Division, at Los Angeles, California.

Operations of the parent organization, the Distribution Equipment Division, began in Detroit in 1903. At this time the sole product was a cartridge-type fuse which protected the circuit and helped minimize the danger of electrical fires. Business was slow in the beginning; the manufacturing backlog was sometimes as low as one or two hundred fuses.
But in 1908, the world's first safety switch was developed and patented by the young firm. It was a revolutionary unit which necessitated shutting off the power before a door would open to the fuse box. Such a device was long needed to eliminate the frequent mishaps which resulted from accidental contact with exposed electrical wires of the switchboxes of that day.

During these embryonic years, the name of the company also underwent changes. The firm was organized under the name of the McBride Company, but later adopted the more descriptive title of the Detroit Fuse and Manufacturing Company. As the reputation of the new safety switches spread, people began to ask their dealers for "the switch with the square 'D' on the cover." Thus a trade symbol stamped on the cover of the product led to the present distinctive trade name, "Square D". The Detroit Fuse and Manufacturing Company has since become the Distribution Equipment Division of the Square D Company. The Detroit plant still houses the executive offices of the company. Products turned out by this division include a large range of electrical distribution units, such as safety switches, switchboards, lighting and power panelboards, and wire-way enclosures for power lines.

Expansion of the company was marked from the beginning by the acquisition of plants already in operation by other firms. This type of growth is still used to a considerable extent today. It was in this manner that the Industrial Controller Division became a part of the Square D Company in 1929. A plant had been in operation since 1910 as an independent firm known as the Industrial Controller Company. Of
initially modest means, the Milwaukee plant originated in a converted apartment over a retail store. Through the years it experienced steady growth, and its merger with the Square D Company made it the largest single manufacturing facility of the company. Furthermore, it is now one of the most modern installations of its kind in the electrical industry. The Industrial Controller Division of Milwaukee and the Electric Controller Division of Cleveland both specialize in the production of the company's second major product line, namely, electrical control equipment. The Milwaukee plant, however, produces units of lower electrical capacity in quantities lending themselves to mass production techniques.

The third branch of the Square D organization extends back to Cleveland in 1897, where the inception of the Electric Controller and Manufacturing Company took place. The year 1955 saw the firm merge with Square D as the Electric Controller Division as it moved into a new plant in Cleveland. This division specializes in custom-built, heavy duty steel mill controls, electric magnets, and heavy industrial controls. A substantial part of production involves special engineering to meet specific customer requirements. Whereas the Industrial Controller Division produces light duty mill controls, the Electric Controller Division forms a perfect complement in its specialized heavy duty type of controls.

Operations of the fourth and final major operating unit of the company, the Western Division, are centered in Los Angeles. This branch originated in 1930, following a merger with the Diamond Electric Manufacturing Company. It is responsible for manufacturing and marketing operations in 11 western states, Alaska, and Hawaii. Western Division
products are essentially the same as those of the Milwaukee and Detroit plants, namely, electrical distribution and control units.

**SQUARE D PLANTS**

Of the 12 plants which the company presently has in operation in this country, all are basically committed to the function of manufacturing. However, a system of assigning specialized functions has been integrated into the company organization which contributes to a large extent to the success enjoyed in competition against giant companies of the industry.

In addition to the four basic divisional headquarters plants, two feeder plants are located strategically within the Distribution Equipment Division. Square D feeder plants supplement production of the major divisional units by producing selected components for incorporation in equipment completed at other locations. The largest of these plants is located at Peru, Indiana, where the company is the most important producer of plastic and porcelain insulation and structural components for a variety of electrical devices. The Cedar Rapids plant is the newest of this type, and includes special air-conditioned areas necessary for the manufacture of high quality circuit breakers.

Rounding out the organizational picture of the Square D Company are the regional assembly plants. The assignment of these plants is to construct special products, such as machine tool control centers and lighting panelboards, using component parts that have been mass-produced at the larger divisional units located in Detroit, Milwaukee, and Los
Angeles. Each regional assembly plant maintains stocks of standard devices produced by the company as a service to regional distributors and customers. Locations of these plants are chosen with regard to strategic market centers in the United States. Presently, plants of this type are located at Dallas, Texas; Seattle, Washington; San Francisco, California; Secaucus, New Jersey; and Royal Oak, Michigan.

The Square D Company has been extended to Canada, Mexico, and to Europe as well. Square D Company Canada, Limited, is a wholly-owned subsidiary with its plant in Toronto. Products manufactured there are essentially the same as those produced at Milwaukee and Detroit. Square D de Mexico is jointly owned with Mexican interests. This plant is located in Mexico City and its production, too, parallels that of Milwaukee and Detroit. Square D Limited, with headquarters in London, was formed in 1955 as a subsidiary to manufacture and market electrical control and distribution products in the British Isles and in Europe.

This, then, is the Square D Company organization and its general nature. This preliminary discussion of the company is intended to provide a basis for a fuller understanding of the production control and personnel policies of the Cedar Rapids plant in the succeeding chapters.
PART I

PRODUCTION CONTROL

POLICIES AND PRACTICES

AT SQUARE D

INTRODUCTION

Part I of this thesis undertakes to describe the place of production control in industry; and with this broad background, to present the policies and practices of the production control department at the Cedar Rapids plant.

The common purpose of an industrial plant is to maximize production and to minimize costs. The production control department in the average plant assumes a role of prime importance in furthering this objective. Through sound planning, an adequate system, and coordinated human effort this department may effect economy of time and effort which will mean increased profits. Part I therefore outlines briefly the scope, organization, and functions which production control has developed in the industrial scene today. It proceeds from this general view to a description of the Square D production control department at Cedar Rapids.

This presentation is not intended to be exhaustive or detailed; rather, it seeks to emphasize by example the importance of an adequate production control system developed in conformance with the peculiar needs of a particular plant.
CHAPTER II

SCOPE OF PRODUCTION CONTROL IN INDUSTRY

Each industrial plant, whether it be large or small, continuous process or job shop, must necessarily maintain a system whereby each factor of production is joined into a coordinated endeavor directed toward company goals and intended purposes of operation. To be effective, the industrial enterprise must adhere to predetermined systems and policies which represent the best thinking of its management in regard to mental and physical techniques of production.

Moore compares production control in a factory with the nervous system of the human body.¹ No coordinated movement of parts of the body are possible unless the muscles receive nervous impulses telling them to start activity. These impulses must be coordinated if desired movements are to eliminate the aimless and useless movement, or lack of movements, which would otherwise result. The complexity and duration of the desired movement necessitate a complex and continuous stream of nervous impulses to the body members.

Production control is analogous with the nervous system of the human body. The factory must be told which activities it is to pursue, before a wheel is turned. Without a system of control, the factory's nervous system, activity would be uncoordinated and chaotic. Orders must flow into the factory proportionate in complexity and quantity with the production tasks involved.

This, then, is the assignment of the production control department
in each industrial plant. As defined by Alford and Bangs,

"production control comprises organization, planning, checking on materials, methods, tooling, and operating times, handling of routing, scheduling, and dispatching, and coordination with inspection, so that the supply and movement of materials, operations of labor, utilization of machines, and related activities of factory departments--however subdivided--bring about the desired manufacturing results in terms of quantity, quality, time, and place."²

In short, production control is concerned with the direction of manufacturing from the time that raw materials are ready to enter the production process until they emerge as the finished product. Production control is not limited in scope to regulatory functions; rather, it serves as a stimulus to production as well. The follow-up function in particular serves to remove those causes of tie-up and waste which hamper the flow of materials along their prescribed course, and thus helps assure smooth, continuous plant operation.

Lastly, the production control department attempts to coordinate production factors in an effort to reduce costs. Regardless of the quality of the product, the selling price must be attractive if customers are to accept it. The selling price is usually directly proportionate to production costs. Furthermore, plant operation on a long-term basis demands that economy of production be given a place of utmost importance in the minds of management. No plant can hope to function long if slipshod production methods and wastes of time, materials, and equipment are evident in its operations. For these reasons, then, production control efforts must be in cooperation with those of the purchasing and accounting departments to insure the utmost efficiency in plant and production
Frederick W. Taylor is generally considered to be the "father" of production control. In his early work, he developed a functional theory of organization, whereby eight foremen were assigned specific functions in harmony with their characteristics and training. Taylor made these foremen functional rather than all-purpose foremen, and separated the clerical tasks of supervision from those demanding plant leadership. Two of these eight foremen were assigned clerical duties which correspond roughly to production control activities as they are defined today. These foremen were the instruction-card clerk and the order-of-work, or route clerk. Early production control efforts consisted of the maintenance of a master schedule with shipping dates, which were to be met by the various department supervisors who were held responsible for the work of their department.

Far removed from this simple beginning is the type of extensively developed production control department which is found in many large industrial plants today. These plants maintain large, cumbersome systems, technical charts, and complex forms and regulatory devices. This type of control, however, is not essential to the efficient operation of every plant. Many small firms divide production control functions between the engineering and production departments, and therefore eliminate the need for an individual department because of the smaller scale of operations. The size of the plant, nature of the product, and the type of processes performed in production are some of the factors determining production control methods. Furthermore, production control assumes dissimilar
characteristics in various plants because of varying purposes of operation, types of organization, and types of personnel in these plants.

In some cases, no distinction is made between production control and actual manufacturing operations, since these functions are carried on by the same body of employees. Production control may vary in nature because of the managerial philosophy of the executives. In general, management ideas may be classified in three categories:

- Conventional—managing by expediency; without intent, thought, or purpose.
- Systematic—management by imitation of the best illustrations which may be observed in other firms.
- Scientific—management which makes use of scientific research to discover conditions best adapted to doing the work involved.

Scientific management is preferable to the other types because it establishes reliable production schedules and thereby achieves a predetermined plan of accomplishment in production.

Despite the countless variations in production control methods, there are few variations in basic functions—regardless of the type of industry, production methods, plant size, or human factors represented therein.

ORGANIZATION AND PRODUCTION CONTROL

Orderly operation of an industrial plant is necessarily dependent upon a definite system of organization and authority. Work must be divided, combined, and arranged in a manner in which, through the utilization of the best equipment and machinery, the most likely channels for
efficient, orderly, and systematic effort may be realized.

"Organizational structure provides an invisible framework by which the work of various individuals is fitted into an effective team. It provides a means for assigning authority and responsibility to individuals, for communicating between experts, and for enforcing accountability."

Production planning and control is commonly performed by a production control department, under the supervision and direction of a production manager. The department, under usual conditions, receives technical aid from the engineering department after the orders are received from the sales department. Production control then translates these orders into production schedules for the most efficient processing by the plant production facilities. Because of the necessity to work closely with the various related groups, such as purchasing, sales, inspection, and time study, a great amount of administrative cooperation is essential to assure smooth plant operation.

Authority within the department is basically of a staff nature, with a degree of functional control extending over all departments of the plant which engage in or effect the production process. The trend today, especially in mass production industries, is towards decentralized planning and control. Under this system, shop foremen assume a large amount of responsibility, and a central planning and control department functions as a coordinator of the independent plant control units into a unified effort.

The typical production control department consists of various groups of employees, each group being assigned a sub-function. Normally, these sub-functions consist of routing, scheduling, dispatching, and follow-up.
Small plants, however, frequently place one employee in charge of several of these sub-functions because of the limited amount of control assigned to each sub-function.

Just as there are various determinants of the nature which the production control department assumes in any plant, so there are several factors which bear upon the specific type of organizational structure to be used in that department. The type of manufacturing operations carried on in the plant determine the necessity of the various functions of production control and the extent of their development. Training and philosophy of top company officials are very influential in determining the type of organizational system which will be employed. Primarily, however, the development of departmental organization, its extent and detail, and the degree to which production is predicted, established, and controlled are matters which are left to the discretion of company executives, and are not to be established according to any set methods.

Standardization of terminology in the area of production control has not as yet been realized. Production control functions are performed by groups bearing different titles, such as a "production department," a "production control department," a "planning" or a "production planning department." These variations in titles and terminology throughout the area of production control are undoubtedly linked with the varied nature of the functions performed by the department in each plant, but nevertheless they are the cause of much confusion.
FUNCTIONS OF PRODUCTION CONTROL

The primary functions of production control fall into five general categories; namely, planning, routing, scheduling, dispatching, and follow-up.

Production planning is a general term referring to a proposed scheme or procedure of action in handling production problems, as developed by the top level executives of a given plant. Planning involves decision making through careful study of known production data and of sales forecasts. This function is carried on by the top production executives, working in conjunction with the other departments related to production.

Generally, the functions of production planning include the following:

1. preparing production forecasts
2. preparing master schedules
3. preparing procurement schedules
4. preparing department or area schedules
5. preparing personnel schedules
6. establishing stockroom procedures
7. preparing authorizations for production
8. establishing finished-goods inventory controls
9. preparing alternative plans of action

Routing is a technical operation and as such it is frequently performed by the engineering department of a plant. The production control aspect of routing "includes the planning of where and by whom work shall be done, the determination of the path that work shall follow, and the
necessary sequence of operations. Routing assumes its greatest importance upon the introduction of a new product, or as it is employed in a job company producing according to individual orders. The routing procedure for a new product or part may be broken down into seven activities, which are also applicable to the job order plant. These activities are as follows:

1. analyze the article to determine what to make and what to purchase
2. analyze the article to determine what materials are needed
3. determine the manufacturing operations and their sequence
4. determine the lot sizes
5. determine the scrap factors—the anticipated normal amount of scrap in producing the order
6. analyze the cost of the article
7. organize the manufacturing forms

In the continuous process plant, routing is of little importance because of the repetitive nature of the manufacturing operations. Once the product has been properly routed through the necessary channels of production, there is little need for a routing section of production control. For this reason, also, the routing function of a continuous process company is often performed by another section of production control, or by the engineering department.

Scheduling is that phase of production control which rates the work in the order of its priority and then provides for its release to the plant at the proper time and in the correct sequence. This control function is necessary in the industrial plant because it deals directly
with the timing of production and is essential if delivery dates are to be met adequately. Scheduling establishes a relationship between the quantity of production and the time element; and in so doing, usually employs a system of graphs, visual aids, and specialized forms. Such a form is the master schedule.

The master schedule depicts the over-all production of the plant and the amount of each product scheduled to be completed on either a daily, weekly, or monthly basis. As orders are received, they are scheduled on the master schedule with due consideration of the plant capacity, as it is determined by the engineering department. Upon completion of the master schedule, the scheduling function consists of determining the order of work in which each task will be performed at each workplace.

Dispatching is the function whereby the manufacturing process is initiated as authority is granted to start the production materials along the paths determined by routing and in accordance with the time as established by scheduling. It seeks to maintain a smooth flow of work in the plant in the interest of maximum efficiency in regard to human effort and machine time. The duties of dispatching stations located at strategic points on the manufacturing floor may be summarized as follows:

1. the assignment of work to the machines or workplaces

2. the authority to prepare, assemble, and issue to their point of usage the necessary materials, tools, fixtures, and gauges

3. the issuance of the orders and production forms necessary to the performance of work and to the reporting of production, payroll, and cost data

4. the responsibility for controlling the progress of material at each operation; for making the necessary adjustments to
schedules and work assignments as conditions change or as unpredictable emergencies occur

5. the authority to move work from one operation to the next

6. the liaison function linking the plans of routing and scheduling offices with the performance of the manufacturing divisions

In short, the dispatch clerk is the link between paper work and actual production, and his task is one of promoting coordination and efficiency in the plant area. As such, his duties tie in closely with those of the other sections of production control.

Follow-up or expediting is that branch of production control procedure which regulates the progress of materials and parts through the production process. It is a function designed to assure delivery of orders as promised, by seeking out errors made in routing, scheduling, and dispatching, and in seeing that the foreman carries out the plans assigned to him. Moreover, follow-up seeks to bridge the gaps which hamper efficiency and smooth plant operation. It strives to bring into actuality the plans as conceived by management through the elimination of those undesirable details which obstruct the desired execution of those plans.

Follow-up is essential for purchased materials, work-in-process, and for assembly of products. The expeditor should be alert for these common causes of delay:

1. errors in planning
2. lack of materials, tools, and equipment
3. equipment breakdowns
4. excessive rejections
5. out-of-balance in-process inventories

These, then, are the basic functions of production control in industry. Of equal importance with the assignment of these tasks to a specific group of employees or a department is the necessity of matching human abilities with the functions assigned. It is, after all, the human element which determines to a large extent the effectiveness of any organization.
FOOTNOTES


CHAPTER III

PRODUCTION CONTROL AT SQUARE D

No standard system of production control is in existence today which assures success in equal measure for each subscriber to its techniques. As Alford and Beatty state,

"The highest efficiency in production is obtained by producing the required quantity of product, of the required quality, at the required time, by the best and cheapest method."\(^1\)

Each firm, then, must design a system of production control which is best adjusted to its peculiar needs in consideration of the type of product, classification of manufacturing, and size of the plant, as well as the training and abilities of its employees.

The Square D plant of Cedar Rapids is a small plant engaged in the manufacture of lightweight, small products on a continuous process, intermittent production, and job shop basis. A large percentage of its employees began work with little experience, but have since acquired a degree of skill commensurate with the demands of their tasks. In consideration of these facts, management at Square D has developed a unique system of production control which is simple in design and in function, and which involves a minimum of clerical procedure.

Before launching into a discussion of production control at Square D, an analysis of the organizational structure of the production department as a whole will be presented, with particular consideration of the production control department which is a part of that segment of management.

In complete charge of the entire production phase of the plant is
the production manager, whose function is that of exercising full authority as senior executive over the various departments contributing to production. He reports only to the plant manager. His assignment includes consultation with the departmental executives, assisting in the solution of major problems, breaking down the basic company policies into directive regulations, and establishing basic procedures in the divisions which will contribute to the efficiency of the group as a working entity.

The next executive level includes the heads of the purchasing department, shipping and receiving department, production control department, and the order department. These individuals are specialists in their line and assume the responsibility for the performance of the assigned functions of their departments, and supervise the personnel of these units.

The purchasing department is logically concerned with the procurement of materials and equipment, both of a productive and routine office nature. It seeks to insure receipt of the purchased goods when they are needed and in sufficient quantity to maintain a smooth flow of work through cooperation with the materials control section of the production control department.

The Square D version of purchasing entails the location and selection of sources of supply, the purchasing of all merchandise, parts, and supplies which are obtained from vendors and from sister plants producing component parts. In addition, this department is responsible for office services, including telephone, switchboard, teletype, telegraph, mail delivery, and reception of visitors. The purchasing department is
headed by a purchasing agent, and consists of a buyer, a receptionist, two clerk typists, and a junior clerk typist.

The receiving and shipping department consists of the stockroom, receiving, shipping, order-filling or warehouse, and transportation sections. The head of this department must train and direct the activities of the movement, as well as the shipping and receiving clerk. Furthermore, he is charged with the direction of men under his supervision to work in the production or maintenance departments as required. In outline form, the various sections of the receiving and shipping department perform the following duties:

A. Stockroom:
1. count and record issues of stock
2. store incoming stock
3. make periodic inventory checks

B. Receiving:
1. count and receive all incoming materials
2. prepare receiving memos
3. unload delivery trucks
4. assist shipping section at peak work load

C. Shipping:
1. crate and pack outgoing shipments
2. load trucks
3. schedule carriers for pickups of shipments
4. assist receiving section at peak load

D. Order-filling, or warehouse:
1. store incoming warehouse stock
2. fill merchandise orders as received from order department
3. assist shipping and receiving sections as required

E. Transportation:
1. operate power lift truck per schedule and requests
2. assist in order-filling section

The order department seeks to maintain a proper quantity of manu-
factured parts on hand at all times, and therefore exercises considerable control over the job shop portion of the plant. Although not a part of production control, it may be described as the production control department for the job shop, since it is concerned with the production of all parts needed in manufacturing which are not purchased from vendors or sister Square D plants. The order department requisitions raw materials through the purchasing department, just as is the practice of the production control department. Briefly, its functions are as follows:

1. maintains merchandise order log of progress
2. maintains special order log of progress
3. "explodes" bill of materials
4. schedules job shop work
5. prepares reports of operations
6. directs traffic routing
7. reviews Kardex file and reorders parts and raw materials
8. reviews lists of parts not on hand and locates substitutes
9. expedites parts that cannot be substituted

The production control department, last of the four primary departments comprising the production department, will be considered in greater detail than the other departments at this time. Four functional sections comprise the structure of production control at Square D. These are:

1. new product planning and coordination section
2. scheduling section
3. materials control section
4. office-plant coordination section

It is readily seen that such a division of functions is not in conformance with the five basic functions of production control as enumerated in Chapter II. Discussion of the nature of manufacturing operations and the assignments of these four sections will indicate and perhaps justify the production control arrangement at Square D.

Manufacturing at the Cedar Rapids plant is not limited to any one specific method or type. Rather, the following three types of operations are carried on in varying degrees in the production area:

1. Job shop--manufactures parts to order as directed by the order department

2. Continuous process--continuous production as it is employed in the assembly areas

3. Intermittent production--production which is carried on sporadically as needs demand

Job shop functions are directed by the order department, which is located in the production department, but not in the production control organization as such. Intermittent production is carried on by employees whose customary function consists basically of machine operation or assembly in the job shop or continuous process areas. By process of elimination, then, continuous process manufacturing assumes a predominant role in plant operations at Square D.

Continuous process, multi-product manufacturing is characterized by continuous production in large volume, with a small variety of products being made. It is commonly referred to today as "mass production". Because of the repetitive nature of operations, few job in-
structions are necessary, subsequent to the initial operating instructions at the beginning of the job. Raw materials inventories and inventories of goods-in-process are low in relation to value of the products completed. In addition, materials flow swiftly through the plant and therefore alertness on the part of the materials control and purchasing departments is essential if raw materials and manufactured parts are to be available when needed for final assembly.

Because continuous process production maintains a fairly constant rate of output from one day to the next without a change of product, production control in daily operations is limited in scope. Managerial decisions, especially in production planning, are not required in as great number as in other types of production. Reports and records need not be extensive, and daily instructions to the workers regarding the task at hand assume a reduced magnitude.

These are the characteristics of "flow control", that type of production control which is employed in continuous process industries. This type most nearly approaches the system used by the Cedar Rapids plant in its continuous process operations. All the usual functions of production control are present, although the time and frequency in which they are carried on may conceal their existence. Many of these "hidden" functions were performed at the time that the plant was laid out and the various machines positioned in the plant. Layout, then, absorbs a large portion of the routing function in the continuous process industry. Once a proper arrangement of machines and equipment is determined, production control activities are limited to planning of new product installations,
determination of rates of production on the basis of orders or sales ex-
pectations, and receiving reports on production as it is completed. Flow
control, therefore, is concerned with seeing that incoming materials,
production, and outgoing rates match.

Having thus established a basis for understanding the nature of the
manufacturing carried on at Square D, and the resultant general type of
production control required, a closer examination of the functions of
the four sections comprising production control at the Cedar Rapids
plant will follow in the hope that it will now hold greater signifi-
cance.

As outlined in the organizational chart of the production depart-
ment, the new product planning and coordination section performs the
following activities:

1. prepares production and shipping reports
2. prepares parts "blow-ups" for the new items being trans-
ferred to Cedar Rapids from other plants
3. reviews for additional manufacturing supplies and tool crib
requirements
4. follows plant activities on shop production order procedure

The tasks of this section involve a quantity of clerical work,
and require familiarity with plant operations and procedures. As its
name indicates, the efforts of this section are directed towards co-
ordination of the planning functions of the production department with
actual operations in any possible manner.

The materials control section is primarily interested in maintain-
ing adequate records of parts and materials ordered, on hand, and con-
sumed in daily production. In performing this task, a Kardex file is em-
ployed to record the daily balance of materials and parts on hand. Suc-
cess of this phase of production control hinges upon the cooperation of
stores clerks and the accuracy of their records and materials inven-
tories. The production manager at Square D lists the following objec-
tives of production control to be gained through the effective use of
the materials control processes:

1. control of all tool crib items on the Kardex record--including hand tools, fixtures, jigs, and manufactured supplies
2. control of inventory, reordering, physical minimums of inflammable paints, thinners, lacquers, and janitorial supplies
3. put all general hardware items, as nuts, bolts, screws, and washers, on a physical minimum basis

Other activities of the materials control section include auditing
of the Kardex postings, regulation of purchased parts and raw materials
on the basis of Kardex information, and expediting the purchasing de-
partment for required deliveries. The Kardex system is set up so that
one month's supply of all materials is always on hand to meet unex-
pected developments in production or in procurement.

The stores clerk of each shift maintains a record of the type and
quantity of each part issued during daily operations. This report is
submitted to the materials control section each morning following the
day in which these items were issued and recorded. As ordered parts
and raw stock are received by the shipping and receiving section, a form
indicating the quantity, name, and number of these items is sent to the
office for distribution to the purchasing and accounting departments,
and the materials control section as well. Finally, a means of recording
the quantity of parts manufactured in the plant must be established.

At Square D a manufactured parts list is submitted by the departmental foremen to the materials control section to be recorded in the Kardex file, upon completion of a manufacturing operation. The materials control section issues check-lists to the stores clerks for the purpose of inventory of the stock on hand at regular intervals. The purpose of these intermittent inventories is to substantiate or correct the balances on hand as indicated in the Kardex file.

The office-plant coordination section has two basic assignments. First, it temporarily follows the parts and materials of all new products along the paths of production, in an attempt to coordinate the efforts of all the departments engaged in the production process. The purpose of this activity is to effectuate a smooth plan of operation through the elimination of delays, wastes, and "hitches" which hinder the progress of the materials through production channels. Secondly, the office-plant coordination section assists the shipping and receiving supervisor in the training of movemen. This section, as well as the scheduling section, cooperates in the follow-up of all products, and thus eliminates the need for a separate section to perform this function. Furthermore, the office-plant coordination section performs part of the dispatching function in conjunction with scheduling, so another common function of production control is divided without the need for a special section.

The fourth segment of the production control department at Square D is the scheduling section. Simply stated, its operations are princi-
pally aimed at scheduling production to meet required delivery dates. Its operations include the following:

1. direct all scheduling activities
2. initiate all shop production orders
3. issue 90 day schedules of required parts and materials
4. operate Sched-U-graph board
5. schedule outside processing of parts with firms in Cedar Rapids and elsewhere

The functions, procedures, and forms employed by the scheduling section are purposely given greater consideration than other areas of production control at Square D. The author feels that this section, as well as the materials control section, are the basic elements of the department and are therefore worthy of a closer examination. In order to describe the scheduling procedures in the most understandable fashion, a narrative approach is used in relating scheduling techniques in their logical sequence.

The Cedar Rapids plant receives two kinds of orders. One is the interplant order, which may request products, parts, or assemblies needed by a sister plant in the Square D family. Such orders are common because of the specialized functions and the consequent interdependency of the various plants comprising the complete Square D organization. The other type of order originates in the Detroit plant, and is based upon customer orders and sales prospects for the future. This type of order shall be considered in detail, because of its direct effect upon production. The other type is filled from supplies in stock,
and consequently has slight effect upon production control operations.

The direct customer order is sent from Detroit to the appropriate plant within the division which specializes in production of the desired product. An order for each separate type of product desired is received from the headquarters plant each month, and is a consolidation of sales requirements and predictions for future needs. It is sent to the proper plant 90 days in advance of the requested delivery date to allow ample time in scheduling and in producing the goods.

The order lists the name and address of the customer, date on which the shipment is requested, part numbers and quantity, and a brief description of the products ordered. It is forwarded to the scheduling section upon its arrival at the plant, where steps are taken to schedule additional production in the quantity ordered.

Assembly and sub-assembly requirements for the order are determined through the use of a two page "explosion sheet". This form is essentially a breakdown of an assembly and the component sub-assemblies of a circuit breaker into their various manufactured and purchased parts. It is a means of determining the required quantities of each component making up the ordered product so that the necessary measures might be taken to assure their presence at the manufacturing area when they are required. If an order calls for several different types of circuit breakers, a separate "explosion sheet" must be prepared for each type. However, all breakers of one type but of varying amperage may be posted to the same sheet.

Page one of the "explosion sheet" is concerned with assemblies and
page two contains a breakdown of sub-assemblies into their component parts. Each page is divided into halves; the left half listing the component manufactured parts and the right side of the page dealing with component purchased parts. Above each "exploded" list of component parts is a horizontal listing of product order numbers for each of the five variations in amperage at which the breakers are manufactured. If the breaker of any given amperage contains a particular component, it is so indicated by a number "1" in the vertical column below that breaker number.

The scheduling clerk must make use of information taken from the order in completing the "explosion sheet". The quantity of each variety of a particular type of breaker is posted above the product order number of that type of breaker. By adding the quantity of products ordered which contain a particular component part, the scheduling clerk arrives at the total number of parts of that type which will be required to fill the order. These totals are entered in the vertical column at the center of the page, and this information forms the basis for further action by the scheduling department in assuring prompt production of the goods ordered. That part of the "explosion sheet" concerned with a breakdown of assemblies and sub-assemblies into their component purchased parts is not completed at this time. Rather, it is filled in by the materials control section which requisitions the needed parts from the purchasing department. This action is taken subsequent to the completion of the previously mentioned steps by the scheduling section.
Through this process the scheduling clerk has determined the required quantities of each type of assembly, sub-assembly, and manufactured part. The next task, therefore, is to initiate manufacture of these component parts. In performing this task, Square D employs a form known as a shop production order, or SPO, which represents the key process in the production control system at the Cedar Rapids plant.

The shop production order is a combination of a bill of materials and a routing sheet whose primary function is to grant authority to begin production of the part listed thereon. The shop production order form is originally drawn up by the industrial engineering department, at which time standard information such as part name, number, rawstock number, dimensions and tolerances of rawstock are filled in the bill of materials part of the form. The routing section is also partly prepared by the engineering department. It includes a list of operations to be performed on the materials enumerated in the bill of materials, the machine group where these operations are to be performed, and the number of the tools to be used in each operation. The engineering department has prepared a master copy of each shop production order used in the production of all the manufactured parts at Square D. Copies are reproduced and furnished to the scheduling section, where they begin their actual useful function in the plant.

The scheduling clerk must insert three items of information on each shop production order before it is distributed in the plant. First, he must fill in an order number, which for filing purposes is consecutive. Secondly, the order quantity of the part must be posted on the
shop production order on the basis of the requirements as determined on
the "explosion sheet". Having thus completed the shop production order,
which is prepared in four copies, distribution is made to the industrial
engineering department, to the proper manufacturing area, to the stock-
room, and the final copy is retained by the scheduling section. The
engineering copy is used in the determination of costs involved in pro-
duction on the basis of set-up time, standard hours required, and other
information of this type. The stockroom uses its copy in issuing raw
stock needed in the production of the order. The scheduling section
maintains a file of the copies which it retains. The copy of the shop
production order sent to the manufacturing area plays the leading role
in the production control plan. As previously mentioned, it grants
authority to begin production and lists the operations, tools, and
machines to be used in the production of the part.

The production manager at Square D believes that the shop produc-
tion order procedure forms a very essential part of the production con-
trol process. Of primary importance is the fact that it enables the
plant to keep a minimum of raw materials and finished goods on hand at
any one time. The shop production order serves as a valve by which it
is possible to control the continuous process manufacturing and job shop
production of the factory. This is true because it gears production to
the demand for the product based on orders received from the Detroit
headquarters. The system results in savings in storage and handling
of both the rawstock and finished goods. It enables the materials con-
trol section to maintain an adequate, but not excessive, supply of the
required materials on hand by notifying the purchasing department of its needs well in advance of the designated production date. A basic premise of the scheduling procedure is this: shop production orders may not be released to the shop for production until the parts needed for production are on hand or in route. This applies especially to those parts produced in the job shop.

Furthermore, the shop production order system provides for economy of machine operation. Although only that quantity of parts actually needed for production is ordered, this quantity is based on an engineering formula of the most economic production rate. The Square D plan attempts to maintain an adequate supply of semi-finished parts in preference to large quantities of sub-assemblies.

Since orders are received 90 days in advance of the delivery date, sufficient time is available to schedule production in an economical manner. The production control department at Square D aims to have a two week bank of manufactured parts on hand ahead of all sub-assembly operations. Similarly, a two week bank of sub-assemblies is maintained ahead of final assembly. In the case of more expensive components, this quantity is modified downward to reduce the value of inventory on hand. By this means, then, production of needed manufactured parts and sub-assemblies is ordered in the appropriate manufacturing department. Purchased parts are also ordered in advance by the materials control section on the basis of the "explosion sheet" described previously.

Upon completion of production operations on the items ordered on the shop production order, the departmental leadman or foreman must
count those parts and obtain the inspector's approval of the quality. If the parts prove to be satisfactory, both the foreman and the inspector sign an inspection tag which contains the part number, name of the part, quantity, and date of acceptance. This inspection tag serves a three-fold purpose. It grants credit for accounting and pay purposes to the particular production area making the part. Furthermore, it becomes a move ticket once it is signed. Lastly, the inspection tag serves as a basis for the preparation of a daily inslip, or record of daily production in all production areas of the plant.

The foremen at Square D submit the original copy of the inspection tag to the industrial engineering department, and the duplicate is affixed to the parts container as a move ticket. The industrial engineering department consolidates all the inspection tags received in one day into an inslip, which is a form indicating the date, part number, and quantity of each part produced on a daily basis. A copy of this form is submitted to the scheduling section where its information is posted on the back of the respective shop production order to which it applies as a daily record of progress of production on that order. The inslip also provides the needed information for maintaining a graphic record of production progress on the Sched-U-graph, which will be described later in this chapter.

Since the scheduling section is concerned with the coordination of production with promised delivery dates, a system must be employed which will assure that the required component parts will be at the sub-assembly and final assembly areas when needed. Square D has devised a form
for the purpose of checking machine capacities to determine whether they are adequate to complete the scheduled production within the one month period allotted to each production order. Whereas the "explosion sheet" tells what to manufacture, as well as the quantity, this form tells how much time is required in production of the same parts in the plant area. This form, bearing no special name, has been developed by the industrial engineering department and lists the following information for each component part produced in the plant:

1. part number of each manufactured part
2. machine number producing each respective part
3. set-up time for production of each part
4. operating time in minutes per unit of each part

Blanks are provided in which the scheduling clerk may insert the quantity of any part scheduled on a machine. Machines and presses are listed by type in columns to the right of the afore-mentioned information. An asterisk in a column beneath the name of a machine or press indicates that a particular component part is produced on that type of machine.

The first procedure of the scheduling clerk is to insert the quantity scheduled in the proper square corresponding to a part. This information is gained from the "explosion sheet" mentioned previously. It is then necessary to compute the number of hours of machine time required to fill the order for each assembly or manufactured part. This computation is performed through the use of the following formula:

STANDARD OPERATING TIME X QUANTITY SCHEDULED + SET-UP TIME EQUALS
TIME IN HOURS TO PRODUCE THE REQUIRED PARTS OF EACH TYPE.

Set-up time is presently being replaced by a percentage figure of thirty, which indicates the calculated actual machine running time, when 100% represents a full three shift workday. For the sake of accuracy, the schedule clerk adds 5% to the quantity scheduled to cover rejects and spoilage during the manufacturing operations. The figure thus obtained is posted in the column bearing an asterisk on the special form, indicating the time required to turn out the desired quantity. This computing process must be repeated for the various types of parts in the order as they are listed on the "explosion sheet". By this process the scheduling section accumulates the total number of hours that each type of machine will be in use in the production of the order for a period of one month.

The Cedar Rapids plant operates three 8 hour shifts, and on this basis each machine is calculated to have a potential of $21\frac{1}{2}$ production hours per day, after subtracting a total of 1 hour for rest periods, and $1\frac{1}{2}$ hours for lunch periods. The number of machines of one type in the plant is multiplied by $21\frac{1}{2}$ hours to obtain the total available machine hours per day for that machine group. This quantity, when multiplied by 20, the number of manufacturing days in the average month, provides the available monthly production time in hours for that machine group.

By comparing the available production time with the actual time required for the production of each part, the scheduling section may determine the adequacy of the machine capacity in meeting the promised
delivery date. Should the scheduled work load prove to be in excess of machine capacity, efforts are made to obtain additional equipment, or to adjust the delivery date with the permission of the customer.

Another important function of the scheduling section consists of preparing the daily schedule sheet. This form serves the purpose of breaking down the monthly production requirements into daily work loads for use as a guide by the leadmen of the production lines. An individual daily schedule sheet is prepared for each production line. On the basis of a 5 day week, 20 working days are available in the average month. Each page of the daily schedule sheet is subdivided into five columns, corresponding to one work week. Four of these pages constitute the work load scheduled for one manufacturing month, or twenty days.

The scheduling clerk is required to insert the days of the month in the upper part of each column, just as they appear on a calendar. Next, it is necessary to determine the daily work load required to produce the scheduled quantity of the product ordered. The total number of manufacturing days has been set at twenty. The total number of required units divided by twenty results in the daily production rate. This figure, together with the product number, is posted in the space provided beneath the date of each work day. A daily schedule sheet must be prepared for each individual production line, since it is prepared by product.

Following the posting of the necessary information, the daily schedule sheet is reproduced in three copies and receives the following distribution:
one copy to industrial engineering department
one copy to proper production line
one copy to scheduling file

The daily schedule sheet is distributed to the leadman of the production line 15 days prior to the initiation of the production of that order. As the daily work load is met by a production line, the leadman crosses off the quantity listed and marks "completed" in the column representing that work day. If for some reason the required quantity is not produced in that day, the leadman draws a line through the scheduled quantity and inserts the deficient amount below. An attempt is then made to produce the daily scheduled amount and the shortage during the succeeding work day.

This form, as was mentioned, serves as a visual guide and record for supervisors of the production lines, since it indicates progress on the scheduled work load as does the Sched-U-graph in the administrative offices.

A Sched-U-graph is a type of Gantt chart developed by the Remington Rand Company which, through the use of a series of horizontal time scales, visually portrays the amount of work scheduled ahead in days and quarter-days for each type of part or group of machines. A left-hand vertical column lists the name of the part or machine group on which the work is scheduled. An operation record card must be prepared for each shop production order issued by the schedule clerk. The operation record card is furnished by the Remington Rand Company in two sizes; a five inch length for scheduling a maximum of one week, and a
ten inch card for a two week period or less. Along the upper edge of
the five inch card is printed a time scale composed of 5 main divisions
with 4 subdivisions in each. These divisions represent the 5 work days
of a work week and the subdivisions are quarters of each day.

These cards are printed with a horizontal colored bar extending
along the lower edge. The color of the bar may signify an assembly,
type of manufactured part, or machine group. The operation record
card is cut to a length in accordance with the number of days which
the operation will consume, as determined by the form used in comput-
ing time which was mentioned previously. It is then inserted in its
proper location on the Sched-U-graph board, thereby extending the
length of the bar and providing a visual representation of the work
scheduled for future operations.

The production control department at Square D has modified the
Sched-U-graph to meet its peculiar needs. The board has been divided
into three main groups. The lower section of the board is concerned
with the parts manufactured at the Cedar Rapids plant in the job shop.
At the left edge of the board appear the names of each press group upon
which these parts are produced. To the right of this listing are placed
the corresponding operation record cards indicating the scheduled load
and progress on the presses. The central third of the board lists the
names of the brazing groups which perform the sub-assembly functions,
together with the operation record cards for these groups. The upper
third of the Sched-U-graph deals with the final assembly of the product.
The left hand column of this section lists the names and part numbers of
all the products made in the plant, and the corresponding cards indicate the quantity scheduled and the progress of this final assembly process. The Square D Sched-U-graph therefore indicates the scheduled work load and the progress of that work for all three stages of production.

In completing the operation record card, the scheduling clerk supplies the part number, shop production order number, quantity to be manufactured, machine group which will perform the operation, shift number, and the due date. The card is then cut to the length corresponding to the amount of machine time required in its production. This is done by consulting the machine time computations performed previously in the scheduling process. This figure, which represents total machine hours required, is divided by $21\frac{1}{2}$ or a multiple of that figure, depending upon the number of machines in that machine group. The resulting figure represents the total number of days in which the machines will be engaged in production of the scheduled load. After the length of the card is adjusted properly, it is inserted in the Sched-U-graph as a graphic picture of the additional work load.

A small red celluloid clip is placed upon the lower edge of each row of operation record cards, indicating the current progress of production in relation to the total scheduled work of each type performed at the plant. A large marker string is extended vertically across the board to indicate the current manufacturing day. The location of the celluloid clips in relation to the vertical cord on each row of operation machine cards indicates the relative progress of production on each part or assembly in the three stages of production. If the clip appears be-
hind the cord, it is evident that production is lagging behind schedule, and if it is ahead of the cord, production is ahead of the anticipated rate. Since only 20 working days are scheduled each month, it is possible that in certain months a day or two will not be scheduled. If this occurs, these extra days are used to bring any lagging production area up to schedule before the assumption of another month of scheduled production.

The value of the Sched-U-graph lies in its pictorial presentation of the current status of production operations. The busy executive, and all production control employees as well, may tell at a glance what areas of production require follow-up or expediting if the delivery dates of each order are to be met. It is a basic policy of the production control department at Square D that each member of the department examine the Sched-U-graph daily before beginning work, in order that all employees might be familiar with the current situation in the plant.

These, then, are the principal functions of the production control department at Square D in Cedar Rapids. The system employed is designed to meet the peculiar needs of the plant in the light of the nature of manufacturing activities, size of the plant, and the available personnel. As is characteristic of all production control systems, this program is dynamic to meet the demands of changing methods, products, and equipment. For this reason, the temporary authenticity of such a review as this is emphasized here.
FOOTNOTES


3. Ibid.

4. Ibid.

5. Ibid.


7. H. Brunner, Interview between author and, May 1, 1956.

8. Ibid.

9. Ibid.


INTRODUCTION

It has been mentioned previously that each industrial firm is interested in the maximization of production and minimization of costs. Part I described the production control department at Square D and attempted to indicate how, through the effective use of sound system and individual effort, this basic objective is furthered in that department.

Part II concentrates on that phase of management which deals primarily with the human factor; namely, the personnel department. Surely the employee plays an essential part in the determination of the level of production attained and of costs connected with that production. If morale is low among the employee group, production is sure to suffer. Similarly, poor health or inadequate training effect the quantity and quality of the work performed. It is evident, then, that management must take heed of the importance of the worker in the determination of efficient and economical production. This function today is commonly assigned to a specialized department whose task it is to deal with the wants, needs, and problems of the employee.

Part II presents a brief picture of the manner in which the Square D plant of Cedar Rapids approaches the area of personnel administration.
In addition to an enumeration of the various phases of the personnel program at Square D, this paper presents the basic features of the labor-management contract embodying those areas of agreement which are essential to harmonious relations in the industrial plant. Thus, Part II is concerned with another important factor in the maximization of production and the minimization of costs—the human factor.
CHAPTER IV

ACQUISITION AND INDUCTION OF NEW EMPLOYEES

The concept of a skilled artisan pursuing his trade in a small shop has all but disappeared from the American scene. In his stead have risen sprawling, massive plants into which raw materials flow with a steady monotony; and from which stream the miracles of modern production which have helped our nation achieve the standard of living which it enjoys today.

The casual observer does not capture the complete picture as he views this scene, however. There is indeed a more complex organization within those walls than simply one which is engaged in conversion of raw materials into finished products. Modern industry has come to appreciate the complexities of the social organization which is equally as important as an integrated and technical system of production. For many years management has emphasized technological development and progress, but has long failed to understand the importance of the human element in the efficient operation of a business. But today, probably because it has been compelled to do so, industry has awakened to the fact that the greatest variant in efficiency among plants within any industry is the human factor.\(^1\)

Because a social organization exists in every industrial plant, the efficient operation of a plant will hinge to an appreciable degree upon the ability of its employees to get along with one another, to attain satisfaction of their personal aspirations and needs, and upon
the effective removal of fears and dissatisfactions.

As the realization of the human impact upon plant operation has spread, an appreciation of the need for development of the area of human relations in industry has arisen. This movement has resulted in the establishment of a new field known commonly as Industrial Relations, and has brought about the personnel department which is almost universally found in industrial plants today. The personnel department represents a distinct milestone of progress when one considers the common practice of yesterday in which human problems were dealt with by production executives who were preoccupied with their own business problems.

Today a separate department of management, specially trained in most cases to cope with the problems of industrial relations, devotes full time to this area. By virtue of its functions, the personnel department of most industrial firms assumes a staff function in a system of line and staff managerial authority. It serves in an advisory capacity to other areas of management, and as such it seeks a non-partisanship role which is essential to the successful dissolution of labor-management problems and inter-employee differences as well.

It is not to be assumed that the evolution of the industrial relations aspect of management has reached its ultimate degree of development today. This is far from the case, for with the recurring presence of labor disputes, changing labor laws, growing intricacies of collective bargaining, plus the growing strength of labor unions, the future is bound to place new demands upon the skills and training of the average personnel staff.
The Square D Company recognizes the importance of human relations to the efficiency of its plant operation. It has undertaken, during its short history at Cedar Rapids, to set up a broad, dynamic personnel program which will meet the day-to-day problems of plant operation with success. However, the program is not as yet fully developed. Although all possible areas of personnel work have not been entered at the time of this writing, plans for the future at Square D point to a program of broad scope.

In approaching a survey of the personnel department of the Square D plant, it is appropriate to examine the basic policy of the company. All personnel functions are designed to interpret, apply, enforce, and develop this policy.

"It is the policy of this company to provide desirable working conditions in all departments and to insure each individual employee careful consideration and fair treatment."^2

In recognition of this company policy, the labor-management agreement sets forth the following pledge:^3

The union and the employees recognize the high quality of the products manufactured and sold by the company, the good will created thereby, and the importance of maintaining the confidence of the consumer.

The company and the union acknowledge that harmony, cooperation, and sincere understanding in their relationships with each other are essential to the welfare and progress of the parties hereto.

With the full acknowledgment of these facts, the company and the union pledge themselves to fair and understanding dealings with each other; to mutual cooperation in the improvement of workmanship and quality of products; to the elimination of waste and conservation of materials; to the furtherance of technological rem-
edy and manufacturing methods; to the prevention of accidents; to a concerted effort in combating absenteeism; to the elimination of artificial restrictions on production; to the cleanliness of the plant and the protection of company and employee property.

This pledge exemplifies the spirit which is essential to sound labor-management relations, and Square D feels that such an attitude of mutual respect and combined effort is basic to its present success and to its success in the future.

SIZE AND GROWTH OF THE LABOR FORCE

The Cedar Rapids plant was formally placed in operation on September 10, 1955. On that date, approximately 160 employees were on the payroll; of which number 110 were hourly workers in the plant, and 50 were salaried employees. Salaried employees include foremen as well as executive and administrative personnel. Personnel records indicate that the labor force currently stands at a total of 500, with 112 being classified as hourly workers, and 86 employees representing the salaried group. This growth in the labor force is attributable to the increased demands for workers as new machines and equipment are added to the plant, and new positions arise in the office as well. It is expected that the plant will, upon reaching its maturity at a presently indeterminable date, employ approximately 700 employees.

Recent months have shown a fairly constant employee termination and acquisition rate. Employees leave Square D at a rate of about 15 per month, including both salaried and hourly employees. On the basis of the consistency of this figure, the personnel staff feels that this num-


ber is normal and takes into account this factor when planning future labor requirements. Labor needs are predictable because of the constant termination rate and because of the gradual addition of manufacturing equipment and facilities. Presently, an average of 50 additions are made each month to the work force. In view of the separation rate of fifteen per month, a net gain of 35 employees is currently being realized.

Personnel statistics indicate that the current male-female ratio is 61%-39% with the female group in the majority. The employment of large numbers of female workers is due to the basic nature of the product manufactured and assembled in the Cedar Rapids plant. Operations consist mainly of assembling small, lightweight parts into various types of circuit breakers and other small products. For this reason, female workers are best suited for many of the plant jobs because of the economy realized and their ability to endure monotonous work.

Male workers are located largely in the job shop area, shipping and receiving department, in the line supervisory positions, janitorial work, and in the office force. Female employees comprise the entire assembly section of the plant with the exception of line executives and inspectors. In addition, female employees operate machines in the job shop and sub-assembly areas of the plant, and represent a large portion of the office force as well.

ORGANIZATION OF THE PERSONNEL DEPARTMENT

The size of the personnel department is of necessity related to
the size of the plant and the scope of its operations or functions. The number of employees needed to perform the assignments of this organization is made evident by actual operations, and will vary from plant to plant.

The personnel staff at the Square D plant consists of the personnel manager, assistant personnel manager, secretary, personnel clerk, and a nurse. Activities are not delegated to individuals specifically, with the exception of the personnel manager. It is his duty to direct and supervise the personnel department. He conducts employment interviews, visits college campuses for the purpose of recruiting trained personnel, serves as chairman of the job evaluation committee, and personally conducts an extensive educational and training program. In addition, he is confronted with daily problems brought to him by supervisors, executives, and employees.

The nurse is considered a part of the personnel department at Square D. In addition to her own duties of caring for minor injuries, she frequently assists other members of the personnel staff when they are confronted with excessive quantities of work.

Thus far the present organization of the personnel department at Square D has proven satisfactory. In view of the growing labor force and the planned expansion of the scope of the personnel program, however, it appears likely that the staff will also be enlarged.

**Sources of Labor Supply**

Essential to the successful acquisition of an employee force is
an adequate source of labor and an effective means of attracting workers from that source. Since it is a primary function of the personnel department to procure workers as needed by the company, definite means must be developed which will assure the quantity and quality of employees that the nature of the firm demands. These sources, which are often categorized as inside and outside sources, include the following:

1. workers presently employed
2. persons recommended by present employees
3. former employees
4. unsolicited applicants
5. labor unions
6. employment agencies
7. schools and colleges
8. labor scouts
9. advertising in newspapers
10. trade magazines
11. other companies

Promotion and transfer of presently employed workers is one of the primary sources of labor used by Square D in filling vacancies or new jobs. This method is favored because of the desirable effect it has upon worker morale. Workers are better satisfied and more efficient when they know that they will be given preferential consideration over outside applicants. Initially, a plant supervisor in need of additional help submits, with approval of the department head, a requisition form to the personnel office indicating the type of worker required. There-
upon a notice of the opening, including job title, rate, shift, department, and foreman's name, is posted on the company bulletin boards for a period of 48 hours. During this time, applications are accepted from any employee who wishes to bid. Candidates are considered on the basis of their ability, merit, and seniority. Seniority is used as a determining factor only when ability and qualifications of several workers are equal. If an employee's bid is rejected and if he so desires, he may make an appeal through the grievance procedure. When no bidder is considered to be qualified for the opening, the job is filled from the outside.

New employees are frequently hired by Square D upon recommendation by present employees. A source of lesser importance is that composed of previous employees. Workers frequently quit because of illness or some type of temporary difficulty, and are usually readily accepted for reemployment.

Each day a number of unsolicited applicants present themselves at the personnel office in search of employment. This source is generally more than adequate for the needs of unskilled labor at Square D. However, no applicant is turned away without consideration. All prospective employees are asked to complete a short application form which is maintained in a file for future reference in the event that an opening arises for which they are qualified. In such a case, the qualified applicant is notified of the opening and requested to appear at the office if he is still interested in the Square D Company.

Labor unions have assumed minor importance as a general source of
labor supply; union hiring halls are most important in the building and maritime trades, and other intermittently operating industries.

Employment agencies, both public and private, are used by Square D in recruiting employees. The personnel manager at Square D also conducts interviews each year at schools and colleges in an effort to fill line and staff positions. Labor scouts are not employed as such.

Advertising in newspapers is a reliable means of attracting job applicants. In filling available positions, advertisements are placed in local, regional, and big city newspapers, depending upon the nature of the vacancies.

With the full knowledge of these companies, the personnel manager frequently draws upon other personnel offices in the locality in his search for workers. This means is usually undertaken when the company is in need of skilled and/or experienced workers.

THE SELECTION PROCEDURE

Once the personnel department has aroused interest in its job openings through the various media described previously, its task is one of screening the job applicants in an effort to match human abilities, interests, and training with the demands as set forth in previously established job specifications. A selection procedure, then, is "the sequence of functions adopted in a given case for the purpose of ascertaining whether or not candidates possess the qualifications called for by a specific job."9

In performing this function, each personnel office adheres to near-
standard procedures with small variations as their particular needs may dictate. The extent and complexity of the selection procedure, however, is usually determined by the education and skill required of the employees of the firm in performing their work. The training of personnel executives and their personal evaluations of the merits of the various techniques involved in selection are also of some influence in determining the nature of the selection procedure.

The method employed by the Square D Company in filling job vacancies from internal sources was described previously in the section entitled "Sources of Labor Supply." As was seen, all jobs will not be filled from internal sources, because present employees may not possess the qualifications or they may not bid on the job. In that event, consideration must be given to those prospective employees who are available through outside sources. It is with these individuals that the selection procedure is concerned.

When a job applicant arrives at the personnel office at Square D, he is asked several brief questions regarding his present status, location, and type of employment desired. He is then directed to complete a short screening application form. This form provides basic information about the applicant, such as a physical description, age, education, training, military status, and work experience. This application is reviewed by a member of the personnel staff in consideration of his essential qualifications for the job opening. If his qualifications appear adequate, the applicant is asked to fill in a formal application blank, which requests more detailed and specific information
in regard to his background, training, experience, and type of work desired.

The next step in processing job candidates consists of the administration of a battery of tests. The testing program employed by Square D consists of three general categories: intelligence quotient tests, aptitude tests, and performance tests. The intelligence quotient test is administered to all prospective employees irregardless of the job sought. The purpose of this test is to determine the general intelligence of a worker, since there is a close correlation between intelligence, adaptability, and learning ability.

Aptitude tests, however, seek to determine the knowledge of an applicant in one of four areas. These areas include mechanical work, in work for men; assembly work for women; clerical skill; machine skill; and blueprint reading. The type of aptitude test which any applicant receives is dependent upon his previous training and his work experience, as well as his job preference. These tests are designed to reveal the inborn and acquired abilities of an individual to perform work in a particular field.

Finally, the testing program for job applicants includes a performance test. This is a practical test, the purpose of which is to discover the degree of skill possessed by the applicant in a particular type of work at Square D. The use of the tests of this nature is limited to those applicants whose work includes typing.

The personnel manager feels that the value of an extensive testing program is limited. Underlying this attitude is the fact that a
highly developed testing plan is inadvertently expensive to administer. Another limiting factor in the use of a wide variety of tests is that in many cases the reliability and validity of the results obtained cannot be proven. The ability of a test to accurately predict future performance is also a subject of debate.

Having completed the application blanks and the testing procedure, the applicant is now ready for an interview with the personnel manager. If possible, the interview is conducted immediately, or later in the same day.

The personnel department at Square D emphasizes courtesy to all applicants, both in the course of the selection procedure and in the employment interview. An understanding attitude is taken toward the uneasy feeling which each applicant possesses as he performs the necessary, though distasteful, task of presenting his qualifications before a prospective employer or representative of an employer. For this reason, the interview is conducted in the privacy of the personnel manager's office and every effort is put forth to place the interviewee at ease in a relaxed atmosphere. An air of informality is usually created by the initial casual remarks and comments preceding the actual interview. Such topics as sports, home town, and other areas of likely interest are mentioned.

The employment interview is a basic tool in the selection procedure. Considerably more than ninety percent of all selection for employment is made on the basis of a personal interview. It is, therefore, probably the most important single part of the whole selection
system. The personal interview presents an opportunity for face-to-face observation and personal appraisal of individual merits. Many personnel executives, as is the case with the personnel manager at Square D, place stock in their intuition when evaluating a prospective employee. Not only does the interviewer gain information to be used in formulating a conclusion, but the interviewee also may benefit if the highlights of the company are presented adequately to him. This is an excellent time to sell the applicant on the company if he so desires.

During the course of the interview, the qualifications of the prospective employee at Square D receive careful consideration. Test results are examined carefully in view of the position to be filled. The formal application is analyzed with particular emphasis upon training and previous experience. Information from all the available sources, not the least important of which is the verbal conversation of the interview itself, is evaluated and formulated into a judgment of the applicant's total fitness for the job.

Intelligence and character are primary personality traits sought by Square D in its prospective employees. However, consideration is also given to appearance, mental alertness, capacity for development, and interest. In some cases, training received in military service is of value in the job of an individual. The amount of importance placed on each of these factors by the interviewer is determined by the demands of the particular job sought.

An interviewer's rating scale is frequently employed by the personnel manager at Square D in sizing up the interviewee. This form pro-
vides a means of rating the employment prospect on the above mentioned factors through the use of short statements expressing varying degrees of each trait.

Upon termination of this segment of the interview, the applicant is usually introduced to the supervisor of the department in which he would work if hired. The recommendation of the supervisor is of great importance in determining the final acceptance of the worker. If the supervisor is not satisfied with the applicant's qualifications, his unfavorable reply is sufficient to eliminate that individual as a prospect for that particular job. Such a system is especially valuable in that it eliminates potential difficulties which would occur had the step not been taken.

The interviewee is again conducted to the personnel office and a brief discussion of the plant, job salary, and perhaps a job offer are tendered at this point. If the applicant is conditionally accepted, pending a reference check and a physical examination, he is advised of such a decision. Arrangements are made for a physical examination with a company doctor as soon as possible. A reporting date is set, and the interview is terminated.

Subsequently, the references submitted by the applicant on his application form are checked. If the individuals listed are located in Cedar Rapids or nearby, the personal reference check is conducted by phone. In all other cases a letter is sent to the reference on the same day that the interview is conducted. Satisfactory reports from the personal references and from the company doctor upon completion of the
physical examination confirm the acceptance of the applicant, and his name is added to the payroll.

The personnel office at Square D maintains a file in which all records of each employee are kept. Included in this file for future possible reference are the following:

1. screening application
2. formal application
3. tests and test scores
4. physical examination report
5. reference replies
6. personnel memos
7. absentee reports
8. miscellaneous information

Such a file provides ready information concerning each employee when the need for such information arises.

THE EMPLOYEE INDUCTION PROCESS

The first few days on a new job are especially difficult as the recently hired employee struggles to adjust to a new environment and to new faces about him. Because of the sensitivity of the new worker to all that occurs in this new situation, good or bad relations between the employee and the company begin at this time. Initial impressions are characteristically lasting and difficult to erase. For this reason, it is essential that every member of the work force make a determined effort to welcome the new employee and to make him feel that he is one of
the group. It is the purpose of the employee induction process to aid in the adjustment of the new worker to his job, his surroundings, and his associates. Of equal importance, however, is the objective of providing the employee with accurate and useful information about the company, the employee services it offers, and the personnel policies that will affect him as well as all other employees. Most successful employee induction plans in use today include four objectives:

1. give the new employee a feeling of confidence in himself
2. make sure that he has complete knowledge of the conditions of his employment
3. give him an understanding of the importance of observing safety rules
4. give him a feeling of pride in "his" company, "his" shop, or "his" store

As is the common practice throughout industry, the induction process at Square D is conducted by the personnel department. The personnel manager at the Cedar Rapids plant feels that it is essential that the new employee be told the truth about hours of work, rate of pay, automatic wage increases, working conditions, union membership, and employee benefits. These important items are explained to the inductee upon his arrival at the plant for the first time. In addition, he is given a copy of the Square D "Factory Rules and Regulations", a pocket-sized copy of the union agreement, and a booklet which explains the group insurance plan offered by the company to those who wish to join. These booklets provide the basis for understanding the nature of the company, and questions are encouraged at this point.
Complementing the initial briefing which is given the employee upon his employment is a monthly group orientation program. Each new employee is required to attend a series of three sessions, which range in length from one to two hours. These orientation meetings are designed to acquaint the latest additions to the work force with the various company products, company background, history, and policies, as well as its rules and regulations. The program is repeated on a monthly basis so that all new employees may be subjected to it as early as possible in their work at Square D.

It is felt by the company that a probable result of such a program is a stimulation of morale and interest among workers. Workers naturally take more pride in their jobs when they realize the importance of their personal contribution to the overall scheme of production. An educational program extends beyond morale in its beneficial effects in that accidents are reduced, waste is lessened, and the quality of the product is improved.

In summary, personnel efforts at Square D are designed to attract from the widest possible range of sources those individuals who are best qualified and most likely to fit into the company organization. Once these workers indicate their desire for employment, it is the goal of the personnel department to conduct effective selection and induction techniques for the benefit of both the employer and employee.
FOOTNOTES

4. T. Fulrath, Interview between author and, April 17, 1956.
5. Ibid.
6. Ibid.
7. Ibid.
10. T. Fulrath, Interview between author and, April 6, 1956.
11. Ibid.
13. T. Fulrath, Interview between author and, April 6, 1956.
CHAPTER V

SUPERVISION, RATE SETTING, AND EMPLOYEE PARTICIPATION PROGRAMS

SUPERVISORY TRAINING

Square D realizes the key position held by line supervisors in influencing attitudes and morale among the employee group. In recognition of the need to develop high-calibre supervisors, therefore, the company has instituted a plan of supervisory training. The primary objective of such a training course is to enlist the support and cooperation of each supervisor and foreman in carrying out company and personnel policies. It is through these individuals working in daily contact with the bulk of the labor force that such policies and objectives are effectuated. Because they are representatives of management to the average worker, supervisors may be largely responsible for the molding of opinions and attitudes essential to the success of a personnel program. To perform this mission adequately, then, it is important that the supervisor be skillfully selected and well trained in the principles of handling people.

The supervisory training program at Square D is at present conducted on a semi-annual basis by the personnel manager. The plan consists of five informal conferences wherein free discussion is intermingled with the guiding lecture of the personnel manager. The following principles of good employee relations are recommended to every supervisor at Square D for day-to-day usage:\(^1\)
1. get acquainted—be friendly and promote willingness, morale, loyalty, and a cooperative team spirit

2. deal with people as individuals—know the personality, interests, ambitions, state of mind, feelings, health, and condition of each worker

3. let each person know how he's getting along—praise his strong points, point out areas which could be improved

4. give credit when it is due—show sincere appreciation for work well done, but reserve praise for deserving occasions

5. tell people in advance about changes which will affect them—explain why if possible. Promote acceptance of these changes

6. make the best use of each person's ability—look for latent talents; never stand in the way of promotions

7. reprimand—never "bawl out." Be considerate of the worker's feelings. Plan the time and place for such action and be sure it is deserved

8. be fair and impartial—play no favorites

9. be a leader, not a driver—set a good example, be energetic, enthusiastic; build morale and discipline simultaneously

10. develop the employee's pride in his work and in the company

Line and other executives are in positions from which personnel relations cannot be removed; what help they can receive from the personnel department should supplement their efforts, not supplant them. The personnel manager at Square D feels that the functions of his office are best supplemented by individuals who possess these five qualifications:

1. knowledge of the work under his supervision

2. knowledge of his authority and responsibility

3. skill in improving methods of work

4. skill in instructing workers how to do a job
5. skill in promoting good employee relations

The development of these qualities is the goal of the supervisor's training program at Square D.

JOB EVALUATION

Today the average worker is the recipient of an assortment of fringe benefits which were undreamed of several years past. All these benefits are calculated to provide economic and physical security; and in a large measure they do perform that function. However attractive and beneficial these items may be, the fact remains that the worker's base wage still is foremost in his interests. It is yet the amount of cash which an employee takes home on payday which determines his living standards and limits his ability to partake of the luxuries of life.

Wages, then, form the core of the worker's attitudes towards his job, his employer, and his fellow workers. If given the slightest provocation in the form of a wage discrepancy in relation to wages paid others for similar work, the employee can justifiably be expected to feel dissatisfied until the situation is corrected. Such a dissatisfaction on the part of one employee is seldom confined to the one individual; a disgruntled worker is bound to transmit his feelings to others with the effect being large scale destruction of morale and loyalty to the company.

It is evident, in view of the basic importance of earnings to every wage earner, that the task of determining wages and salary scales is one of the most difficult problems of management. The system of arbitrarily
setting wage scales as was used in past years is no longer adequate, neither is it defensible, since unions have grown in strength and in bargaining ability. Today, the need for a formalized, systematic wage plan is recognized throughout industry; and this widespread feeling has resulted in the development of a number of basic types of job evaluation plans. A common feature of every type of plan is the elimination of personal bias and the use of scientific methods and procedures whenever possible. Although their approach to the problem of determining a just wage plan may vary, all plans are basically similar in that they make use of common job factors as determining yardsticks of value.

Job evaluation is essentially a process of measurement. It is a plan or system whereby, on the basis of a previously established job description, the values of jobs in consideration of certain arbitrarily designed yardsticks or work characteristics are determined. These yardsticks are given numerical values which, when they are totaled and converted into a monetary value, represent the estimated value of the job in relation to other jobs. The idea of job evaluation has been adequately described as a method of "informed guessing" at an equitable distribution of wage levels for any group of jobs. It is important that job evaluation be concerned with the requirements of the job itself, rather than the degree to which an individual meets these requirements.

Most wage measurement plans conform to a general plan, which includes these steps:

1. establish organizational authority
2. determine jobs to be evaluated
3. make a job analysis
4. evaluate the jobs
5. prepare wage and salary classifications

Job analysis is a necessary prerequisite to job evaluation. It is a critical evaluation of the operations, duties, and relationships of jobs in a plant, and serves as a source of information upon which an effective job evaluation plan may be built.

A discussion of the various systems of job evaluation will not be presented here. However, the most popular plan in use today, the point system, will be outlined because it is also the plan in use by the Square D Company. It consists of seven basic steps:

1. establish and define a list of factors common to all jobs that are being covered
2. construct a measuring yardstick for each factor
3. from the job description, prepare a schedule showing quantitatively to what degree each job possesses the various factors enumerated above
4. apply the yardstick to convert the qualitative descriptions to quantitative units
5. sum up for each job the readings obtained for the individual factors
6. rank the jobs in accordance with the scores obtained in the foregoing steps
7. determine the dollar value to be assigned to relative positions in the job ranking

A "measuring yardstick" refers to a point schedule of value which is assigned to each gradation of every factor. It is a range of points which usually varies with the nature of the factors being considered.
In the Square D plan of job evaluation under the point system, the following factors are rated:

1. physical effort
   a. endurance
   b. strength

2. hazards
   a. accidents
   b. health

3. job conditions
   a. discomfort
   b. clothing spoilage

4. supervision received and responsibility for assigning work

5. responsibility for safety of others

6. responsibility for equipment and materials

7. knowledge of equipment and tools

8. knowledge of methods

9. knowledge of materials

10. schooling

11. judgment and initiative

12. mental capability

13. physical skill
   a. dexterity
   b. precision

The above factors are not to be misconstrued as factors to be rated in any individual on a particular job. Rather, they refer to the requirements of the job itself. They represent factors which are found in varying degrees among the jobs at Square D. It is the task of the job evaluation committee to determine the importance of each of these factors in the jobs evaluated, on the basis of observation and study of the job.
under consideration. The job evaluation committee at the Square D plant consists of the plant superintendent, the chief industrial engineer, and the personnel manager. It is their task to review each job, place a numerical and monetary value on it, and to submit their results to the unions for approval. All wage scales are negotiated with the unions before they become a part of the personnel program. As such they stand for a period of two years, at which time the agreement expires and negotiations are renewed if so desired.

A job evaluation plan does not contribute its maximum value in a firm unless provision is made to keep the various wage ratings up to date. Because job content changes and new jobs come into being intermittently, especially in a young plant such as Square D, the program must be of a dynamic, flexible nature. The job evaluation committee at Square D meets periodically to consider such changes and additions to the total job structure. The frequency of these special meetings is determined by their need. The results of these meetings are subject to union approval as in the former case.

Thus an orderly, systematized plan of wage determination forms a basic part of the personnel program at Square D. The personnel manager asserts that the plan has provided a fair and equitable wage pattern and has resulted in a minimum of dissatisfaction on the part of the employees. It has established a firm foundation for the wage system and furnishes a standard aid in handling wage problems. Not the least of the attributes of the job evaluation program is the assistance it provides in convincing employees that a conscientious effort has been
put forth to establish an equitable and fair value on their labors.

MERIT RATING

Employee merit rating may be defined as an orderly, systematic and carefully considered analysis and evaluation of a person's services, based both on observation over a considerable period of time and on a study of all objective records of performance and behavior. 9

Rating employees is one of the oldest and most universal practices of management in industry. Management has long sought to establish a relative worth of each employee in relation to another. Early attempts at merit rating, however, were often indefinite and inconsistent. With the advent of the scientific approach to managerial problems came a closer scrutiny of merit rating, and formal plans have since been developed. The degree of success of any merit rating plan is closely dependent upon the care which management exercises in its design and control.

Merit ratings are used as a record of progress for apprentices and regular employees; as a guide in making promotions, transfers, or demotions; as a guide in making lists for bonus distribution, for seniority consideration, and for rates of pay; as an instrument for discovering hidden genius; and as a source of information that makes conferences with employees helpful. 10

Merit rating encourages greater care in observation of each worker by supervisors and managerial executives, since they are made aware of the necessity of assessing the effectiveness of employees at periodic
intervals. Consequently, the possibility of exceptional ability being noticed and rewarded is increased. Such a plan assumes its greatest importance as a firm grows in size and the ability of one or a few individuals to maintain adequate knowledge of individual characteristics is diminished.

The assignment of merit rating should not be given to supervisors until they have received adequate instructions and indoctrination in the purposes and objectives underlying the plan. If the actual administrators of a merit rating system are not convinced of its worthiness, satisfactory results are not likely to be achieved. The raters must be completely familiar with the process if the plan is to achieve its purpose. The procedures and techniques to be adopted in merit rating are best explained by means of one or more preliminary conferences at which time the plan is discussed in detail and any questions in the minds of the supervisors are answered.

The merit rating function at Square D is performed by the supervisors and foremen in the various departments of the plant. Before undertaking the actual rating of his workers, the supervisor is advised of the serious responsibility involved in such an action, in view of the effect which his decisions will have upon job placement, training, promotion, transfer, termination, grievances, work assignment, salary adjustment, and development of the employee. He is encouraged to give each employee his most careful and thoughtful attention. He is asked to be fair, impartial, and objective. His ratings should be based on facts and the long-run quality of each worker's efforts. Bias and favor-
itism are to be avoided, and he is to be a strict judge. He is impressed with the importance of giving favorable answers to rating questions only when they are merited.

Personal feelings toward the worker, when allowed to influence the rating given him, tend to make themselves evident when the rating is checked against standards developed from previous ratings of workers on the same type of job. Furthermore, the supervisor is encouraged to rate the employee, and not the importance of his job. He is instructed to disregard such items as length of service, age, education, and similar factors not directly related to job importance. These instructions are delivered to the supervisors at a special conference before the actual job of rating is begun. Every effort is made to assure an adequate understanding of the principles underlying the plan and the intricacies of the system itself.

The actual rating function at the Square D plant is performed by answering a series of sixty questions comprising a performance rating chart. The rating chart is designed to set up common standards of judgment which all supervisors can apply uniformly in an organized procedure. It may be described as a "check list" type of rating form. The rater is merely required to check "yes" or "no" for each of the sixty questions which are carefully designed to provide a comprehensive picture of worker performance.

Upon completion of the answering of the questions by the supervisor, the chart is submitted to the personnel office for grading. Grading of merit rating forms consists of checking results against previously es-
established standards for each type of work rated. Individual traits considered essential to a particular job are weighted by means of a scoring stencil, which is used in conjunction with the questions answered by the supervisor. For instance, all questions relating to production are labelled with a small "p" on the scoring stencil, and upon examining the frequency of favorable replies to these questions, the grader marks a score on the back of the form in a column labeled "production." In this column are three squares marked "below average," "average," and "above average." Each of these three classifications bears a numerical range of points, and it is left to the discretion of the grader to determine what value is inserted on the basis of the answers given by the supervisor originally. By way of explanation, the below average square bears a numerical range of 0-7; average scores fall between 8-21; and above average scores are assigned a range of 22-27.

Five basic performance traits are thus evaluated through the use of a scoring stencil or key which identifies the nature of each question. The traits which are considered are production, quality, job knowledge, personal-work habits, and over-all performance. The scores given to each of these five categories are totaled and checked against previous ratings which are kept on file. Such a comparison serves to indicate the comparative effectiveness of the worker over a period of time. Furthermore, this score provides a means whereby workers are evaluated in comparison with each other.

After the merit rating form is graded by the personnel office, it is returned to the supervisor with whom it originated. The supervisor
discusses the rating with the employee, and suggestions are tendered as to how the worker may improve in his work.

It is believed by the personnel department that such a system of merit rating possesses farther reaching values than that of simply deciding who should be promoted, demoted, or receive an increase in pay. It creates interest and thought about each employee as an individual. Such personal attention results in the uncovering of weaknesses or exceptional abilities, and may lead to suggestions of improvement or a promotion, whichever the case may be. In either case, the employee stands to benefit from such action.

Furthermore, it is felt that work may be more intelligently assigned on the basis of such an analysis of performance on the job. Merit rating acts as a prod in that workers are aware of the fact that their efforts are being observed. They are likely to exert greater effort, strive for improvement, and take greater interest in their job.

DISCIPLINARY ACTION

It is the aim of every personnel department, by means of careful employee selection, training, and good personnel practices, to reduce grievances and dissatisfaction between employer and employee to a minimum. Doubtless, a sound personnel program is of utmost importance in lessening day-to-day friction within a plant.

Nevertheless, the ideal situation in which no dissatisfaction exists in this relationship has never been attained. Irregardless of the care exercised in selection and training, the patience and skill devoted
to correction, there are still cases in which stronger steps must be taken. For this reason, every company must maintain some plan of disciplinary action in the form of penalties which are designed to counteract undesirable actions on the part of employees. Because of the danger in unwarranted or indiscretionary use of penalties, however, management must be fully aware of each situation before action is taken. This means that the underlying problem or irritation must be uncovered, and complete, detailed information of the case must be available for consideration. Instances of carelessness and rules infractions should be dealt with initially by the issuance of a warning that any repetition of the undesirable conduct will necessitate penalization.

Disciplinary measures should be fair and impersonal if they are to be effective. A penalty, if justified, should be commensurate with the severity of the infraction and should be applied without delay so that the act and the penalty are fully associated in the mind of the transgressor.

A follow-up of each case is of value for the determination of the effect of the penalty. By studying employee performance and attitudes, adjustments may be made and future action in cases of a similar nature may be more adequately handled.

Disciplinary action, of necessity, begins with the line supervisor, since it is he who is most intimately aware of most employee situations. Because of his close association with the worker, he is in the best position to administer disciplinary action without arousing animosity and resentment. The supervisor must possess a clear understanding of his
authority and responsibility; but at the same time, he must temper his actions with a sense of fair play. Since he is representative of all of management to the employee group, his treatment of infractions of company rules is also representative of the fairness of the company as a whole.

The personnel department of Square D holds that two requirements are essential to a good disciplinary system; namely, it should be fair and it should be firm. Consistency is another necessity if grievances are to be avoided or kept at a minimum. It must be remembered that any disciplinary steps taken will serve as precedents for any given type of violation or infraction in the eyes of other employees. Any deviation from the precedent in subsequent cases will give rise to justifiable objections, and management will be hard pressed to explain such action.

It is also the opinion of the personnel manager at Square D that disciplinary action should benefit employer and employee alike. The employee profits from fewer accidents when a firm disciplinary plan is enforced. Greater harmony and cooperation is created when discipline guides the actions of each employee alike. A sound program contributes to the efficiency of the group as a whole. Morale usually reflects the desirable effects of a sound disciplinary policy, and further benefits such as fewer grievances, lower labor turnover, and greater worker efficiency often result from an intelligent policy.

The disciplinary procedure at Square D is composed of four basic steps: The first step in treating an infraction of rules involves a talk with the guilty individual by the supervisor. The matter is dis-
cussed in a friendly manner in an effort to discover and remove the cause of the infraction. In many cases, rules are broken because of unavoidable circumstances and do not represent an attitude of wanton disobedience on the part of the employee. Square D has found that the majority of disciplinary cases are settled by this basic step of discussing the infraction. Cases for which this remedy is applied are minor in nature; such as tardiness, excessive talking on the job, and stretching the break periods.

The second remedy in handling a disciplinary case involves the issuance of a formal warning notice by the personnel office. It is also a corrective measure taken against minor offenses, and is frequently used when an infraction is repeated after a verbal warning. It is a polite warning requesting closer conformance to company rules, and nothing more. However, the formality of such a warning has a definite psychological effect in preventing a recurrence of the act.

The third type of disciplinary action is the formal reprimand. It is a written formal notice prepared by the personnel office, and is issued in instances where an employee has committed a serious disobedience of rules, or has willfully or repeatedly disregarded company policy. The personnel manager at Square D indicates that the necessity of issuing this type of disciplinary notice has not yet arisen.

Also untried because of lack of necessity to date is the fourth type of disciplinary action; namely, suspension or discharge. This measure is applied in cases when the employee's behavior is so extreme that it warrants no consideration or leniency. Examples of this type
would be striking a supervisor, malicious destruction of company prop-
erty, drinking on company property, and similar acts.

The personnel office issues formal printed notices in disciplinary
actions involving warnings, reprimands, and discharges or suspensions.
These notices must be signed by the plant superintendent and the per-
sonnel manager as a prevention of indiscriminatory issuance. These
three types of written notices are prepared in four copies, and a copy
is given to the union steward, the union business agent, the guilty em-
ployee, and one is kept in the personnel office. The wide distribution
of each formal notice of disciplinary action is felt to be a deterrent
to willful violations of rules. In all cases, however, due considera-
tion is given to the worker. All notices are delivered with a minimum
of fanfare in an effort to avoid public embarrassment of the employee.
The personnel manager emphasizes that it is not the number of rules in-
fractions which determines the severity of disciplinary action, but
rather it is the nature of the unwarranted action upon which the disci-
plinary action is based.15

The need for disciplinary action at Square D has been slight during
the short history of the Cedar Rapids plant. The fact that employer-
employee relations have thus far been characterized by exceptional co-
operation and harmony is credited in the main to the care exercised in
employee selection.16 Personnel executives at the Cedar Rapids plant
are convinced that the emphasis placed upon character and personality
in the selection of workers has created an unusually favorable atmosp-
phere within the social organization of Square D.
HEALTH AND SAFETY

Health and safety are closely related factors which bear heavily upon the performance of the worker on the job and upon the happiness he experiences in his home and community. Because they are so important to the worker, these factors must consequently be of major concern to management. It is recognized that high accident and illness rates are detrimental to employee morale. This low morale generally affects the efficiency of employees and prevents management from maximizing production and minimizing costs. The firm which conducts an active program of worker health and safety is gaining good will as a by-product, since workers are given proof of management's interest in them as individuals.

A sound personnel program of health and safety must rest upon safe, health-protecting working conditions in the plant. Having thus demonstrated its concern for the welfare of the employees, management may successfully stress prevention through careful work habits. An extensive education plan emphasizing the part of each employee in maintaining good health and in building a good safety record is a succeeding step. Each firm which is plagued with industrial accidents or illnesses should conduct a thorough analysis of specific situations, as well as accident and health records, if causes are to be determined and future occurrences prevented.

Another method of promoting health and safety is through the careful screening and selection of applicants for employment. Following this's
approach to the health and safety problem, management must take steps to perpetuate these high physical standards through the aid of frequent medical examinations. Many firms today employ a physician whose function is basically that of conducting initial and periodic physical examinations for employees at company expense. Moreover, a full-time nurse is commonplace in nearly every plant. It is customarily her assignment to treat minor cuts and bruises, as well as to administer first aid to accident victims on the job.

Health services and safety programs are under the direction of the personnel department as a common practice today. The degree of development of this phase of personnel management is in variance according to the needs of the industry and of the size of the firm. Many large firms are equipped with medical dispensaries and a staff of trained medical personnel who are committed to the treatment of company cases. In contrast to this extensive medical setup is that common in smaller industrial plants across the country, in which a nurse is employed to treat the day-to-day minor injuries and to maintain health and safety records.

Regardless of the physical health facilities which a firm may furnish its workers, certain elements of a health and safety program are feasible for every company and each employee. These include provisions to enforce minimum employment requirements, the maintenance of good working conditions, encouragement for each worker to live and work sensibly, and the provision of extra services which will facilitate its program. The pre-employment medical examination, special tests for work involving health risks, and good placement of workers are examples of
what management may do to further its cause. Supplemental provisions for sanitation, adequate ventilation and lighting, and a carefully selected menu in the cafeteria are also beneficial.

The health and safety program at Square D is under the supervision of the personnel department. A pre-employment physical examination is required of all employees. This aspect of the program is conducted by three medical doctors who are located in downtown Cedar Rapids offices, and who by agreement with the company handle such tasks without charge to the employees. The company requires that an employee submit to another physical examination after a prolonged period of absence in order that any changes in physical condition which may jeopardize the functioning of the employee may be discovered. Furthermore, any employee may be required to report for re-examination at any time the company feels it necessary.

A full-time registered nurse is employed by the Square D plant. It is her primary assignment to treat all cases involving minor injuries and also emergency cases. In addition, the nurse maintains complete health and accident records, including employee attendance, daily calls and the nature of each call, and reasons for the calls. She submits monthly reports to the personnel manager on the basis of the information gathered from her records. She is also given the responsibility of administering the group insurance plan and of maintaining records of this function. As a sideline to her regular duties, she assists in the handling of routine personnel work when her time allows. Such activities include the checking of references and filing.
The plant dispensary and nurse's offices are located immediately adjacent to the personnel office, as is the case in many plants today.

Such is the provision made by Square D for the treatment of injuries. Of equal or greater importance is the positive approach to the problem; that is, the prevention of accidents and industrial illnesses. Because accidents and illness mean added costs in the form of medical treatment, insurance payments, lost time, idle equipment, reduced output and efficiency, and increased labor turnover, emphasis in this area seems particularly important from the standpoint of the employer and the employee alike. Accidents mean reduced wages and physical pain to the disabled worker. His family shares in the adverse effects of his misfortune through a reduction of family income. Thus the unfortunate occurrence of an industrial accident has widespread repercussions.

The outstanding lesson to be drawn from a study of the progress of safety accomplishment is undoubtedly that the present accident rate is almost wholly needless. This waste... can be largely eliminated if only we can bring about the application of informed, safety-minded common sense to the day-to-day work in the multitude of establishments that constitute American industry.

Safety is basically a mental awareness which ideally is applied by the worker in all aspects of his work and his associations with other workers. Because safety is rooted in the mind, then, safety education is logically a sound approach to the problem. By carefully analyzing accident records and by studying each accident situation, the cause of each accident may possibly be discovered and the situation remedied.

Studies reveal that accidents may be classified in three main groups:
1. those due to mechanical causes, unguarded machinery, defective equipment, and the like

2. those due to physiological causes, such as over-fatigue and nervous strain

3. those due to mental causes, inexperience, carelessness, emotional disturbances, and ignorance

A progressive safety program takes into account the various types of accidents and makes full use of such educational devices as safety contests, publicity programs, employee education, and supervisory training. Motion pictures emphasizing safety are an effective means of conveying an idea. Moreover, the employee induction process is the most advantageous time to begin development of safe work habits, since the worker is most receptive to ideas at this time.

Square D policy is centered in the maintenance of desirable working conditions. In pursuit of this end, management is aided by the new plant and equipment which have been carefully planned and set up for maximum safety and convenience. Modern fluorescent lighting, air conditioning, humidity control, and proper ventilation are some of the features of the plant which are conducive to good health and accident reduction. The safety program at Square D represents a joint union-management effort for their mutual benefit. A safety committee is utilized as a basis for the plan, and is composed of the following membership:

one representative of the personnel department
one maintenance foreman
one production foreman (rotates each month)
two union employees

This committee is charged with the task of adopting safety rules, conducting investigations of accidents and safety hazards, and of making
recommendations of improvement in the plant. In addition, the safety committee makes a complete safety inspection of the plant once a month. Employees are encouraged to report unsafe conditions to their foreman or directly to the committee, so that they might be corrected before injuries occur.

An important part of the safety program at Square D is the training of supervisors, mentioned previously. During the course of the supervisory training lectures, the role of the supervisor in teaching workers to be safety conscious is stressed. Emphasis is placed upon the fact that it is the individual employee who plays a significant part in the success of any safety program, so it is the duty of the supervisor to see that the employee appreciates the importance of the element of safety consciousness. Future plans include a special safety course for plant foremen, apart from the general supervisor's training program now used by the company.

The monthly orientation meetings for new employees form another phase of the safety program. At these meetings, safety films are presented and safety talks by the personnel manager are delivered in an effort to impart a sense of importance to this factor at the outset of the employee's service with the company.

The Square D Company has set up a series of shop safety rules which are designed to guide the worker's conduct while on the job or while he is in the plant. These rules and regulations are outlined in detail in a handbook entitled "Factory Rules and Regulations," which is distributed to each new employee during the induction process.
Although the Square D plant at Cedar Rapids is still young, it has established a fine safety record. A tribute to its provisions for safety is the fact that only one reportable accident has occurred during its eight months of operation. However, the company is not resting on its laurels, but is building its safety program in an effort to continue accident prevention as the plant grows and as more employees report to work each day.

RECREATION

Recent studies indicate that more than a third of all industrial firms maintain some type of recreational program. The presence and degree of development of a program of this nature is largely dependent upon company policy and its consideration of basic objectives, morale, and environmental factors in the plant. The scope of the recreational programs varies widely in accordance with the availability of community programs and facilities and with the differences in composition of the work force. Generally, the smaller the community and the greater the proportion of the community population employed by a firm, the more successful the recreational program of that firm is likely to be.

Such an undertaking is of two-fold importance if the plan is successfully established in a firm and is receiving the support of the employees. First, it makes for a well-rounded life for the participating employees; and secondly, it contributes to the wellbeing of the worker and hence to his ability to perform adequately on the job.

It is desirable that employees provide the incentive in planning
and administering the program. Employees take a greater interest in the program when it is free from control and domination by management, and it is much more likely to be a success under these circumstances. Some plants provide a recreational director as a member of the personnel department who meets with employee committees and cooperates in the development and maintenance of the program. In many firms, formal clubs are set up with voluntary membership and management by the employees themselves. Financial contributions from the company are the principle means of support, with a nominal monthly fee from each member acting as a supplement.

Most popular of the various types of recreational activities are the indoor and outdoor sports and games.\textsuperscript{21} The trend at present is towards a diversified program which encourages more general participation than is the case of the highly competitive sports. Management usually subsidizes these recreational programs by direct contributions as well as through the provision of a recreational director.

The recreational program at Square D is still in its developmental stages. The city recreational facilities of Cedar Rapids are very adequate, and therefore it seems unlikely that the program will ever be extensively developed. At present, however, the program includes men's bowling, women's bowling, girls' basketball, and men's golf. These phases of the program are almost entirely dependent upon the initiative of the employees. However, the company furnishes the uniforms and equipment in these sports, and underwrites the organizational expenses. The participants finance any remaining expenses themselves. Square D ath-
letic teams compete against other groups of organized industrial workers in the Cedar Rapids Industrial League.

It is felt by some employees that the present program should be expanded to include a wider variety of recreational activities so that a greater number of workers might participate. Plans of expansion of the program by the personnel department are awaiting company appraisal of the need and of its appropriation of additional funds to cover the necessary expenditures. It is likely that additional personnel will be required to administer such an expanded recreational plan.

EMPLOYEE SERVICES

Employee services cover a wide area of endeavor, but are generally designed to help the worker in his personal problems. Included in the scope of employee services are benefits and assistance which affect the worker's life on the job, off the job, and in the community. Employee services encompass health and safety, which have been mentioned previously under a separate caption. Other services of this type are lockers, rest rooms, lunch rooms, educational services, insurance, pensions, and recreation, also mentioned elsewhere.

Resistance to the spread of employee services has arisen from employers and employees alike. Both sides frequently contend that services of this type constitute a welfare plan. In addition, the average worker dislikes anything which resembles charity. Others object to employee services on the ground that such activities unnecessarily invade the private lives of employees. Recent years, however, have seen the
acceptance of employee services as collective bargaining has grown in use throughout industry. This change of heart is partly attributable to the fact that such matters are placed on a business basis and are "earned" at the bargaining table, rather than simply given to the employees by the company.

The conditions surrounding each individual plant dictate the need and desirability of incorporating any specific type of service into the personnel program. A common type of employee service is financial aid, in the form of credit unions, cooperative purchasing plans, savings and loan facilities, employee savings associations, and company housing. Some companies offer a broad insurance plan, including life insurance, health insurance, and private pension plans. Larger companies which have developed varied types of undertakings for the benefit of the employees frequently find eager acceptance of service plans. Included by these larger firms in their programs are plant publications, transportation of employees, legal aid, and counselling.

Employee services at Square D are few at this early stage of development. Foremost in the plan, however, is the group insurance plan which is discussed fully in Chapter VI. This type of service has become increasingly popular in recent years because many employees are not able to provide adequate insurance protection on their own because of the prohibitive expense. The Square D plan of group insurance is advantageous because of its moderate cost to the employee and its broad coverage for both the employee and his dependents. Included therein are sickness and accident coverage, hospital and surgical expenses, and similar coverage
for dependents of the employee.

In recent years, especially since World War II, restaurants or cafeterias have become popular in industrial plants. Many companies provide such facilities which are operated at cost or even at a loss. Such losses are usually offset by increased production, less absenteeism, and improved employee health. A balanced diet thus provided is very beneficial to both the company and to the worker.

Square D does not at the present time have a cafeteria in operation, but future plans call for one to be in use by midyear of 1956. This cafeteria will be operated by a private contractor for a profit, and employees will be allowed to make use of these facilities or to continue under their present arrangements for their meals. The space which will eventually be utilized for the cafeteria is presently functioning as an employees' lunch room, and is used by those workers who bring sack lunches to work.

In summary, the Square D personnel program covers a wide range of endeavor, although it is still in the process of development. Employee selection and induction methods are designed to provide adequate workers who might best serve themselves and the company. Supervisory training, job evaluation, merit rating, and disciplinary action at Square D form an important part of the program. Provisions for employee health and safety, recreation, and for employee services round out the present coverage of the personnel program with additional features likely to be added in the near future.
FOOTNOTES

1. "Employee Relations I," personnel guide, p. 3.
7. T. Fulrath, Interview between author and, April 4, 1956.
8. Ibid, April 6, 1956.
12. T. Fulrath, Interview between author and, April 10, 1956.
14. Ibid.
15. Ibid.
16. Ibid.
CHAPTER VI

THE COLLECTIVE BARGAINING AGREEMENT

Recent labor history reflects a rapid growth of unionism and a parallel rise in the significance of collective bargaining as a means of achieving gains for union members. The end product of collective bargaining is the agreement or labor contract, which sums up the provisions agreed upon in the bargaining sessions and outlines a method by which future disagreements may be dissolved. Because collective bargaining covers nearly every aspect of employer-employee relations, it is logically the concern of the personnel department. It is commonly the task of the personnel manager to play a major role in the formation of a mutually satisfactory agreement.

No standard form of agreement exists to which each firm adheres as it negotiates a contract with union representatives. The variations in size and nature of both the company and the unions demand that each contract reflect the individuality of the particular labor-management situation. Notwithstanding these differences, however, there are certain basic demands which are nearly universally represented in all agreements. Such issues as management prerogatives, wages, hours, seniority, and similar factors assume a basic importance in every relationship between labor and management.

A union agreement is simply the predetermination of the most common controversial issues in labor-management relations and of a general method to be followed in resolving disagreements that may arise over these or other issues. Once these points
are agreed upon and reduced to writing, the likelihood of misunderstandings that reach the work stoppage stage is greatly reduced.1

Employees of the Square D Company of Cedar Rapids are organized in two unions; namely, the International Association of Machinists and the International Brotherhood of Electrical Workers. The agreements between these two unions are nearly identical, with the only differences being in minor references to each union and its constituency. Subsequent remarks will be directed towards the contract, although two contracts are in actual existence.

The current agreement between Square D and the unions was made effective on August 18, 1954, and will continue in full force for a two year period ending August 18, 1956. It is to continue thereafter as though it were extended for a yearly period in writing unless, at least 60 days before the expiration date or any automatic extension of the yearly period following, written notice is given by either party of a desire to cancel or change the agreement. Each party is given an unlimited opportunity to make proposals during negotiations prior to the final agreement. Both parties agree that neither shall be obligated to bargain collectively during the term of the contract on any subject omitted from or presently a part of the existing agreement.

UNION RECOGNITION AND MANAGEMENT PREROGATIVES

Article I of the agreement provides for union recognition, and states that the union shall be the sole collective bargaining agency in respect to rates of pay, wages, hours of employment, and other con-
ditions of employment. The bargaining units consist of all hourly paid employees of the plant. Specifically excluded from the bargaining unit are office employees, guards, plant protection employees, office clerks, timekeepers, administrative employees, foremen, supervisors, and all persons occupying higher executive positions in the company.

Article II recognizes and agrees to deal with a shop committee in all matters affecting labor-management relations. The committee consists of three employees, including the chairman, who are elected by the union from its constituency. It is to meet with company representatives at bimonthly intervals, or in cases of special emergency.

Company prerogatives are listed in Article III of the agreement:

The management of the company and the direction of the working forces, including the right to determine the products to be manufactured, the number, size, and location of the plants, and the extent to which they shall be operated or shut down, the schedules of production, production standards and methods, processes and means of manufacturing, and the determination of the skill, ability, and other qualifications of employees are vested solely and exclusively in the company. In addition, the company reserves the right to establish and enforce rules pertaining to safety, conduct, and plant operations, and to employ, promote, transfer, discipline, and discharge employees for good cause, subject only to the limitations contained in this agreement.

Any employee who is dissatisfied with a production standard may request a check study of that standard. In the event that the study indicates that the standard is improper, revision is undertaken accordingly. Any further dispute on the matter must be channeled through the grievance procedure.
WORKDAY AND WORKWEEK

The normal workday is confined to eight hours, including rest periods, but exclusive of the lunch period. The normal weekly work schedule consists of five consecutive working days, Monday through Friday. However, no guarantee of any minimum number of hours of work is implied, nor is a limitation placed on the number of hours which may be worked. The hours of each of the three shifts are decided by mutual agreement outside the scope of the contract by the company and the union. Certain employees, as boiler firemen and watchmen, are excluded from a regular schedule of working hours or days because of the nature and demands of their jobs.

OVERTIME

Article V provides for one and one-half times the regular rate of pay for all work in excess of the normal eight-hour day or for all time worked in excess of forty hours per week. Payment of both daily and weekly overtime for the same hours is prohibited. Also, no employee may be paid for work performed on Saturday, Sunday, or a holiday if premium pay is already payable for that day.

All work performed on Saturday is compensated at one and one-half the regular rate, and double pay is granted for any effort expended on Sunday. An exception to this rule is made for those employees engaged in special or continuous operations, as exemplified by the boiler firemen and the watchmen. Work performed on a regular night shift begun
on Sunday is also excluded from the premium pay provisions of the agreement.

Days not worked during the regular workweek for reasons within the control of the company only are considered as days worked in the computation of overtime.

Seniority and ability are the bases upon which the company decides who shall work overtime when such work is required. Overtime assignments are rotated within a group or department so that each employee will be given his chance to work overtime. Any employee refusing such an assignment or who fails to report is placed on the bottom of the list, and must again await his turn.

HOLIDAYS

The following days are recognized and observed as holidays by Article VI of the agreement:

- New Year's Day
- Labor Day
- Memorial Day
- Thanksgiving Day
- Independence Day
- Christmas Day

Regular employees are paid their regular scheduled hours not in excess of eight hours at their usual rate of pay. If the named holidays should fall on a Sunday, that day which is officially observed as the holiday in Iowa is considered the holiday for purposes of computing the workers' pay.

All employees are eligible for holiday pay if they work their full regularly scheduled hours on the workdays immediately preceding and following the holiday. Employees who have been laid off are not eli-
gible for holiday pay during their layoff period. However, regular employees on leave of absence due to illness or injury which is legally compensable receive pay for only the first holiday which occurs during the first thirty days of this leave. All other employees on leave do not receive holiday pay. If an employee is on vacation, he may receive holiday pay to which he is otherwise entitled.

Employees are not required to work on a recognized holiday, but any time spent on the job during a holiday period is compensated at twice the normal rate of pay. This double-time pay replaces the holiday pay which the worker would have received if he had not worked.

PROBATION PERIOD—REGULAR EMPLOYEES

According to Article VII, a new employee is on probation for a period of thirty working days. If he is retained beyond this period, seniority of the worker is retroactive to the date of employment. This probationary period may be extended by consent of both the company and the union. During this period, the company has the right of discharge, and the union has no jurisdiction over the worker.

EMERGENCY AND CALL-REPORT DUTY

An employee who upon reporting to work on his regular shift, and without prior notice not to report, is entitled to two hours of work in the plant or an alternative of two hours pay on a straight-time day rate. The provision does not apply, however, if the lack of work is attributable to an act of God, utility failure, labor dispute, or other
causes beyond the control of the company.

In case of an emergency, an employee may be called back to work after his regular shift is terminated and after he has left the plant. In such an instance, the employee is paid a minimum of three hours' pay on a straight day rate, or time and one-half for the actual hours worked if that amount is greater.

SENIORITY AND LAYOFF

Article IX of the agreement provides that seniority of all employees begins with the first day of his last regular employment after completion of the probationary period. If it becomes necessary to reduce the working force, seniority with consideration to skill and ability prevails in selecting workers to continue on the job. Layoff is performed by job classification within each department. The employee with the least plant seniority within his classification and department is laid off first.

An employee with experience as a regular worker in another job classification in the same or lower wage grade in his department may replace the worker with the least seniority in such a job in the event of a layoff. Similarly, he may replace a worker with the least seniority in another department, in a similar or lower pay grade, providing that he has had experience in that job. He is to receive a rate of pay based on his previous time worked on that job.

If an employee with seniority is about to be laid off and cannot perform the work as described above, he is allowed to transfer and re-
place another worker with lesser plant seniority in the same or lower pay grade if he can handle the job efficiently. The employee may refuse the transfer, accept a layoff, and retain his seniority if he so chooses.

Any employee laid off who has more seniority than those workers left on duty is entitled to immediate recall and full pay as well for all scheduled time which he lost during the layoff. A qualification to this right of the worker requires any complaint to be made in writing within two workdays after receipt of the notice of layoff. Should the employee fail to file his complaint before the two-day period has expired, subsequent claims are ineffective and will not be subject to action through the grievance procedure.

The company gives all employees two working days' notice prior to any temporary layoff which is within its control. On the day prior to giving the notice of layoff, the company must submit to the union a list of all employees affected by the layoff. The company and the union strive to cooperate in reducing the work force as fairly and orderly as possible, according to the terms of the agreement.

The company reserves the right to retain key personnel, such as boilermen and watchmen, because of the essential nature of their jobs. Workmen are recalled in reverse order to which they were laid off. A notice of recall is sent to the employee by telegram, registered mail, or by return receipt; it is addressed to his last known address and is sent five days prior to the date on which he is to return to duty. If the recalled employee fails to present himself, his absence is classi-
fied as a voluntary quit, unless a valid excuse is presented.

Occasionally, an employee is promoted to a salaried position. In such a case, he may continue to accrue plant seniority. If he returns to the bargaining unit at a later date, he is placed according to seniority provisions mentioned previously.

In terms of the agreement, the following reasons are considered sufficient cause for loss of seniority:

1. quit
2. discharge
3. absence for three working days without proper cause or notification of the personnel department
4. misrepresentation of reasons for taking leave of absence, overstaying such a leave, or accepting other employment while on leave
5. layoff in excess of two years

The company retains the right in Article IX of the agreement to employ temporary or part-time employees for sixty days or less at any time except during layoff periods. Furthermore, it is agreed that the company shall furnish a current seniority list every ninety days for union use. No unqualified or unnecessary worker, as determined by the company, must be employed.

BULLETIN BOARD

It is the responsibility of the personnel department to maintain one or more bulletin boards in the plant. A bulletin board may be used by the union to post notices of meetings and other legitimate items of
interest to its members. Article X of the agreement forbids the use of
the board for political purposes, propaganda, or any other purpose
which might injure the company or its employees. General distribution
of posters and pamphlets, advertising or political matter, or litera-
ture of a similar nature is prohibited upon company property unless it
is approved by the personnel manager. Disciplinary action is taken
against any offender of these rules.

NEW JOBS AND VACANCIES

The company strives to retain all employees in their assigned jobs
to the greatest possible extent. However, in cases of emergency, lack
of work, absence of other employees, or similar instances, the company
may at its own discretion temporarily transfer employees from one class-
ification, group, or department to another.

Article XI stipulates that, in the event of a job opening in the
plant, a notice of that opening bearing the job title, rate, shift, de-
partment, and foreman is posted on the bulletin boards for a period of
forty-eight hours. During this time, any employee is allowed to bid on
the opening.

The company makes every effort to fill these jobs from the group of
qualified applicants who bid on the opening. Prime determinants of the
successful applicant are ability, merit, and seniority. Upon selection
of one of the bidders for the job, his name and seniority date are
posted on the bulletin board. However, if no bidders from the plant
are found to be qualified, the job may be filled by a new employee from
outside the plant.

Seniority is the deciding factor in filling such a job only when the abilities and qualifications of several employees are equal. If an employee's bid for the opening is rejected, he may make an appeal through the grievance procedure within two days after the opening has been filled.

If a new job arises or an existing job is changed materially while the present contract is in force, the two parties have agreed to negotiate a pay rate or range for the job. A temporary pay rate may be assigned to the job pending a forthcoming agreement, and any final decisions in regard to the rate are made retroactive to the date of hire or change in the job content.

**LEAVE OF ABSENCE**

Every employee who is absent from work for more than three consecutive workdays is required to obtain a written leave of absence. The procedure for obtaining such a leave is outlined in Article XII of the agreement. The employee must make a request in writing to the personnel department, listing in detail the employee's reasons for his request. If an employee is absent after the expiration of a leave or accepts employment elsewhere during his leave, he is classified as a voluntary quit. He may be reinstated, however, if he presents satisfactory evidence within three days that the absence was beyond his control.

An employee may receive a leave of absence for personal illness or injury if satisfactory medical evidence is presented from a registered
physician. Such a leave may extend to a maximum of ninety calendar days, during which time seniority continues to accumulate. It is the company's prerogative to request a registered physician's statement as evidence of continuing illness in cases of leaves exceeding forty-five calendar days. A maximum of twelve months is granted as a leave of absence with accumulating seniority when satisfactory medical evidence of continuing illness is produced to the satisfaction of the company.

The Square D Company reserves the right to require an examination by its own physician at company expense prior to the granting or extension of the leave, or prior to the employee's return to work.

A maternity leave of absence is mandatory for any employee who becomes pregnant. The employee is required to file an affidavit from her doctor in arranging a leave of this nature. Ordinarily, a maternity leave of absence is of four months' duration; upon recommendation of the company physician, however, a two month extension may be granted.

A leave of absence with accumulating seniority may be granted for the necessary period of disability in the event of any sickness or injury which is compensable under the Workmen's Compensation Law of Iowa.

Should an employee be placed in a full-time union position, he is entitled to a leave of absence of two years' maximum duration with accumulating seniority. This period is subject to extension at the discretion of the company and the union. Any other reason for obtaining a leave of absence must be approved at the discretion of the company. In such cases, seniority shall not accumulate.
FOOTNOTES

CHAPTER VII

THE COLLECTIVE BARGAINING AGREEMENT (Continued)

Article XIII of the agreement provides the following definition of a grievance:

The term "grievance" shall mean any dispute between the company and the union or between the company and any employee concerning the effect, interpretation, or application of this agreement.

Negotiations have led to a five-step procedure for the settlement of any complaints which may arise. Step one consists of presentation of the complaint by the employee to the foreman. The employee may do this with the help or in the presence of the department steward. The foreman must give an answer in two workdays. Failure on the part of the employee to present the complaint to the foreman within forty-eight hours after the complaint originates is considered waiver of that complaint and it is given no further consideration.

Use of step two is contingent upon the failure of the preceding step in reaching a satisfactory settlement of the complaint. It is now reduced to writing in triplicate by the foreman and department steward, listing complete details of the complaint. Included therein are the time at which the complaint was originally presented to the foreman, the time that it was reduced to writing, and the time it was signed by the foreman, employee, and department steward. Copies of the complaint are distributed to the chief steward, the plant superintendent, and the personnel director. The chief steward and plant superintendent, or their representatives, meet within forty-eight hours
in an effort to arrive at a satisfactory adjustment to the complaint. If a decision is reached, it must be reduced to writing, dated, signed, and posted.

Step three of the grievance procedure involves referral of the grievance to the business manager of the union, who in turn takes it up with a company representative. If no settlement of the grievance is reached at this meeting, the company must state its decision within five workdays subsequent to the conclusion of the meeting. The grievance then moves to the next step in the grievance procedure.

In step four, either the business manager of the union or the plant manager notifies the union international headquarters. An international representative is sent to meet with designated company representatives in an effort to reach a satisfactory adjustment of the grievance.

At the request of the union or of the company, the grievance is submitted to a board of arbitration as the fifth and final step. This request must be submitted within one week of the conclusion of the meeting comprising step four. The board of arbitration is composed of a representative selected by the union and one selected by the company, as well as a third member who is selected by mutual agreement between the company and the union-designated board representatives. The individual who is selected in this manner serves as the board chairman, because of his impartiality.

The newly formed arbitration board is entrusted with the authority to rule on all disputes connected with the agreement, whether it be its
effect, interpretation, or its application. A hearing of the dispute is held immediately, and its decision rests upon the voice of the majority of the body. Such a decision is final and binding on both the union and management.

The contract prevents any authorization, order, sanction, or support of a strike, slowdown, work stoppage, picketing, boycott, or other interference with plant operations as long as the company recognizes and abides by the grievance settlements, arbitration board decisions, and the contract. The company, in turn, has promised to refrain from lockouts during such time as the contract is in effect. The shop committee, chief stewards, and department stewards are given the responsibility of encouraging employees to settle all grievances through the grievance procedure without interference with plant production.

DISCHARGES

The union-management agreement at Square D states that "no employee shall be discharged or disciplined without good and sufficient cause." Article XIV further states that a discharged employee may be granted an interview with the steward in his department prior to leaving the plant upon discharge. In the event of disagreement with regard to the justifiability of any disciplinary action or discharge, the matter is handled through the established grievance procedure.

VACATIONS

Square D employees earn vacation pay according to a prescribed scale
which is designated in Article XV of the union-management agreement.

During the first calendar year of employment, the employee earns:

1. Twenty hours of vacation pay if he completes 1,000 hours of work or more

2. Four additional hours of vacation pay, up to an over-all maximum of forty hours' pay, for each additional 200 hours of work completed

Employees who qualify for vacation pay may draw it in the ensuing calendar year and may also take one day off for each full eight hours of vacation pay earned, subject to the conditions enumerated below.

The following schedule indicates the employee's eligibility for vacation time and vacation pay for his third year and succeeding years of employment:

<table>
<thead>
<tr>
<th>Years of service as of January 1st of vacation year</th>
<th>Days of vacation</th>
<th>If employee actually worked 840 hours during preceding calendar year (hours of pay)</th>
<th>If employee actually worked 1,560 hours during preceding year (hours of pay)</th>
</tr>
</thead>
<tbody>
<tr>
<td>One or more, but less than three</td>
<td>5</td>
<td>20</td>
<td>40</td>
</tr>
<tr>
<td>Three only</td>
<td>7</td>
<td>30</td>
<td>60</td>
</tr>
<tr>
<td>Four or more, but less than fifteen</td>
<td>10</td>
<td>40</td>
<td>80</td>
</tr>
<tr>
<td>Fifteen or more</td>
<td>15</td>
<td>60</td>
<td>120</td>
</tr>
</tbody>
</table>

All vacation pay is paid on the basis of each employee's straight-time day rate, including shift premium, which was paid during the last quarter of the prior calendar year. Eligibility for vacation pay requires that the worker be on the company payroll as of January 1st of the vacation year.
A contract clause stipulates that a vacation must be taken if earned, unless otherwise mutually agreed upon by the worker and the company. Eligibility for vacation pay is not destroyed if the employee is on the payroll as of January 1st of the vacation year and subsequently quits, is laid off, or is discharged. The vacation schedule for the employees of each department is prepared by the departmental foreman on the basis of seniority and consideration of continued efficient production in the absence of each vacationing employee.

**PAY PERIOD**

Pay checks are distributed on Friday of each workweek. Each pay check represents payment for work performed during the previous week. Should the payday fall on a holiday, the pay checks are distributed to the employee body on the preceding workday.

**CLASSIFICATION—WAGE RATES**

All job classifications, labor grades, and wage rates and ranges are determined through negotiations. Shift differentials are also a subject for negotiation by labor and management. If either party should desire a modification of the wage rates and classifications, notice must be given in writing sixty days prior to the date of contract expiration. If no agreement is reached at the end of the sixty-day period, the limitations on the union right to strike and the company privilege to perform a lockout as previously outlined are removed until a new agreement is reached between the two parties. Actual wage
rates and ranges are drawn up in a separate paper and as such are con-
sidered to be confidential matter by the company.

CHECK-OFF

Provision is made in Article XVIII for the company to deduct union
dues and initiation fees from the wages of the employee, once he has be-
come a union member. Initiation fees are taken from the employee's
first pay check subsequent to receipt of authorization to make such de-
ductions. Union dues are deducted from the first pay check following
authorization of the deduction, and from the first pay check of each
month thereafter. The money from these deductions is forwarded to the
financial secretary of the union on or before the fifth day of the month
following the month in which the deductions were made.

GROUP INSURANCE PLAN

Article XIX of the collective bargaining agreement outlines the
basic features of the group insurance plan which is available to all
Square D employees. The plan in force is underwritten by the Aetna
Life Insurance Company of Hartford, Connecticut. It is a cooperative
type to which participating employees make a monthly contribution ac-
cording to the following schedule:

<table>
<thead>
<tr>
<th></th>
<th>Per Month</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employee only</td>
<td>$2.00</td>
</tr>
<tr>
<td>Employee and one</td>
<td></td>
</tr>
<tr>
<td>eligible dependent</td>
<td>$2.50</td>
</tr>
<tr>
<td>Employee and two or</td>
<td></td>
</tr>
<tr>
<td>more eligible dependents</td>
<td>$3.00</td>
</tr>
</tbody>
</table>
Upon his approval, the worker's contribution to the plan is automatically deducted from his pay check each month. The Square D Company pays the entire balance of the cost of the program. Any new employee may make application when he is inducted into the company, and the insurance will become effective upon the completion of two months of continuous service. Each insured employee receives a certificate showing the amount of insurance in force, and the benefits to which he is entitled. Provisions of the plan fall into two categories; those available for employees only and those offered to both the employee and his dependents:

For employees only:
- group life insurance
- sickness and accident benefits

For employees and dependents:
- hospital benefits
- surgical fee benefits

Both male and female employees receive $1,000 coverage under the group life insurance provisions. Life insurance is payable in the event of the employee's death from any cause, at any time or place, while he is insured. Payment to the designated beneficiary may be in a lump sum or in installments. The covered employee is entitled to change his beneficiary at will by signing a card provided for that purpose.

Special provision is made for any employee who becomes totally and permanently disabled while insured and before the age of sixty. His life insurance will remain in force as long as he remains so disabled, if proof of disability is provided each year. The injured employee must file proof of his disability within three months following a nine-month
period of total disability, at which time his contributions cease.

The life insurance policy ordinarily lapses upon termination of employment. However, should an ex-employee die within one month of his separation from the company, his beneficiaries are entitled to payment of the death benefit.

The weekly sickness and accident benefit is payable while the employee is disabled and prevented from working as a result of a non-occupational accident or disease for which benefits are not payable under the Workmen's Compensation Law. Male employees receive a payment of $22.50 per week, and female workers, $15.00 per week. These benefits commence on the eighth day of disability resulting from disease. Benefits are payable for a maximum period of thirteen weeks for any one disability. Payments are made for as many separate and distinct periods of disability as may occur. The employee need not be confined to his home, but must be under the care of a doctor during the period of disability.

Hospital benefits for employees are payable at the maximum rate of $8.00 per day while they are confined to a hospital and under the care of a doctor as a result of a non-occupational accident or a disease not compensable under the Workmen's Compensation Law. This sum is offered to cover hospital room and board, and is payable for one continuous period of disability to a maximum of 31 times the daily benefit rate. In addition, the plan pays for all other hospital charges up to an aggregate total for any one disability of fifteen times the daily benefit rate. Maternity benefits are payable in accordance with actual hospital charges up to a maximum of ten times the daily rate, or $8.00,
for any one pregnancy.

Surgical benefits for employees are paid for any operation resulting from a non-occupational accident or disease for which benefits are not payable under a Workmen's Compensation Law. The maximum amount of payment varies with the operation, but payments equal the charges if less than the maximum. If several operations are required, payment is made for each up to a maximum of $200 for all operations in one continuous period of disability. The location at which the operation is performed is immaterial. If the employee is confined to a hospital, he is entitled to hospital benefits in addition to the surgical benefits.

Hospital benefits are also available for dependents of employees at Square D. The dependents of male workers include the wife and unmarried children between the ages of 1½ days and 19 years. For female employees, dependents include only the unmarried children between the same ages as shown above. Maximum payments and duration of eligibility, as well as conditions of payment, are identical with those hospital benefits available for employees. Emergency treatment, if it is to be covered by the insurance plan, must be given within 2½ hours of the accident.

Surgical benefits for dependents are regulated by the same stipulations which cover surgical payments for employees, and are payable in identical maximum amounts.

All claims under the group insurance plan must be reported immediately following the occurrence of the condition under which benefits are payable. Sickness and accident benefits are paid weekly and include
payment for fractional weeks. All other benefits are paid immediately upon receipt of proof by the insurance company.

No medical examination is required if application is made promptly upon eligibility. However, if the employee delays his application beyond one month following the date of eligibility he must furnish satisfactory evidence of his insurability at personal expense.

This, in abbreviated form, is the labor-management contract at the Square D plant in Cedar Rapids. Because the plant is young, its labor disputes have been of a minor nature thus far. Consequently, most of its contract clauses are untried and untested by the discussions arising around an arbitration table. The company hopes, through the furtherance of sound personnel policies and practices, to reduce the possibility of future disputes and the resultant need for a more lengthy and complicated contract.
CHAPTER VIII

SUMMARY AND CONCLUSIONS

The purpose of this thesis has been to present an objective description of the production control and personnel management programs of the Square D plant in Cedar Rapids. It is felt that all phases of management are important contributors to the successful operation of any industrial plant. However, certain areas of management, because of their inherent nature and their assigned functions, are more likely to determine the degree of success achieved by the organization as a whole. Production control represents an important basic function in industry, and personnel management directly influences this and all other functions of an industrial plant. For these reasons the production control and personnel areas of management were chosen as the subjects for this thesis. Information used in the construction of this paper was gathered from actual experience as an employee of the Square D Company, from interviews with personnel and production control executives, and from company literature.

The Square D Company believes that only through the pursuit of dynamic policies and the use of up-to-date methods in management and actual plant operations can any firm hope to survive the pressures of our present highly competitive business world. Therefore, every effort is made to adjust modern methods and ideas to the peculiarities of the plant and to originate any methods or courses of action which are necessary for the improvement of existing conditions.
The company has adopted an organizational structure which, through the use of specialized divisions, feeder plants, and regional assembly plants, provides maximum efficiency in production and sales across the nation and in foreign countries as well.

Production control is customarily thought of as being a composite of five basic functions. These functions are planning, routing, scheduling, dispatching, and follow-up. However, the importance of each of these functions is determined by the characteristics of the plant, its products, and its employees. Moreover, some of these functions are "hidden" in that they are performed during the course of the initial plant layout.

The Cedar Rapids plant employs a system of production control designed to meet its peculiar needs. The production control department is a segment of the production department, and is composed of four sections. These sections are scheduling, new product planning and coordination, materials control, and office-plant coordination. Emphasis is placed upon constant vigil, follow-up, and upon the individual in the production control department. Foremen, supervisors, and the plant superintendent meet each week to discuss production problems, reasons for behind-schedule operation, and to offer suggestions for improvement. Each supervisor is charged with the task of follow-up or expediting the work in his department.

The materials control and scheduling sections play important roles in the production control plan. Materials control centers its functions around the maintenance of a Kardex file of inventories on hand and on
order. The scheduling section employs "explosion sheets," daily schedule sheets, shop production orders, and a Sched-U-graph board in the coordination of production with specific delivery dates.

Personnel functions at Square D are varied, but as yet are still in the process of initial development. Of basic importance is the acquisition of new employees as the need arises. The majority of plant vacancies are filled from the large number of daily applicants who present themselves at the personnel office. Advertising by a variety of means serves to attract transient labor when vacancies occur.

Selection of an applicant as a new employee consists of formal application, testing, formal interview, and a physical examination. Induction is considered important because of the durability of initial impressions. This process begins on the first day of work for the new employee. He is given company literature, rules and regulations, a copy of the labor-management agreement, and a booklet explaining the group insurance plan. He is then taken to the department in which he shall work and introduced to his fellow workers.

Supervisory training is an essential part of the Square D personnel program in view of the strategic position of the supervisor and his potential influence upon his subordinates. Semiannual supervisory conferences are held for the purpose of instructing, informing, and discussing supervisory problems.

The job evaluation plan in use has proven successful as is evidenced by union and office employee acceptance of wage relationships. Merit rating has also been favorably received by the employees and is
used as a basis for promotion, demotion, wage increases, and as an instrument to create greater awareness of employee ability.

The disciplinary procedure consists of four basic steps. These are a verbal discussion and warning, a formal warning notice, a formal reprimand, and suspension or discharge. Repetition of a rule infraction does not determine which level of disciplinary action will be taken. Rather, it is the nature of the unwarranted act which is the deciding factor.

Worker health originates with the initial employment examination. A full-time company nurse administers first aid and emergency treatment when required. Safety is emphasized in the orientation lectures, in safety films, and through the use of safety posters. A safety committee is in charge of investigating accidents and safety hazards, and also is asked to recommend improvements.

The Square D recreation plan is a recently undertaken field of endeavor, and as such is not extensively developed at the time of this writing. It includes men's and women's bowling, girls' basketball, and men's golf. Employee services at the Cedar Rapids plant are likewise limited in scope. Presently, they consist of a privately operated cafeteria and a group insurance plan with coverage for both the employee and his dependents.

Two unions represent the employees at Square D; the agreements, however, are identical in essential content. Definite spheres of control are reserved for management in the agreement. The normal workday and workweek are listed as eight hours and forty hours respectively, with
compensation at time and one-half for excesses over these figures. Six holidays are observed by the company. Double the normal rate of pay constitutes the payment for any necessary work on a holiday.

Union membership is preceded by a thirty-day probationary period. Seniority begins upon the completion of this period, and is used to determine who should be laid off if such action becomes necessary. The personnel department maintains a bulletin board for the purpose of posting company and union information. Job vacancies are listed on the bulletin board, and present employees are given an opportunity to bid on these openings before they are filled by workers from outside sources.

An employee is granted a leave of absence upon presentation of a satisfactory reason or acceptable medical evidence. Provision is made for maternity leaves as well. Square D has established a five-step grievance procedure, the use of each step being dependent upon the failure of the preceding one. These steps are as follows: formal presentation of a complaint, reduction of the complaint to writing and presentation to the personnel manager, referral to the union business manager and company representatives, notification of international union headquarters, and finally, submission of the grievance to a board of arbitration.

A definite schedule of vacation eligibility is in use at Square D. All job classifications, wage rates, and labor grades are determined through negotiation.

These then, are the principle points in summary form which hold the most significance in the personnel and production control departments at
the Square D plant of Cedar Rapids, Iowa.
APPENDIX

1. Customer's order form
2. "Explosion sheet"
3. Shop production order
4. Form for checking machine capacities against scheduled load
5. Daily schedule sheet
6. Initial informal application form (personnel)
7. Formal application form
1. Customer's order form
<table>
<thead>
<tr>
<th>Quant.</th>
<th>Description</th>
<th>Unit Price</th>
<th>Multi</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>991115-Z - QB BREAKER</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16000</td>
<td>991120-Z - QB BREAKER</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1000</td>
<td>991130-Z - QB BREAKER</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>500</td>
<td>991140-Z - QB BREAKER</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
2. "Explosion Sheet"
3. Shop production order
**BILL OF MATERIAL**

<table>
<thead>
<tr>
<th>PART NO. OR UNIT WT</th>
<th>WT.</th>
<th>SCRAP ALLOW</th>
<th>PRICE PER UNIT MEASURE</th>
<th>UNIT RAW COST</th>
<th>OTHER COSTS</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>K-145508 MA Contact</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>K-199196 Blade Pin</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>918990 Flux</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MANUFACTURED</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>K-157448 Blade</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**USED ON**

- L-115942
- L-115943
- L-115944
- L-115945
- L-115946
- L-115947

**ROUTEING**

<table>
<thead>
<tr>
<th>GR.</th>
<th>MACHINE</th>
<th>TOOL</th>
<th>SCHEDULE</th>
<th>OPERATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>BR</td>
<td>SA-1548-3</td>
<td>Rivet Pin to Blade</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>&amp; 4B</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BR</td>
<td>B-1139-4E-3</td>
<td>Weld Contact to Blade (pin latch surface of Blade in Flux)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>KSKT-1952-2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>KSKT-1943</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>KSKT-2401</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>G-71082</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>G-1014</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BR</td>
<td>D-7580-4B</td>
<td>Grind latch end of Blade</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AT</td>
<td>G-1014</td>
<td>Inspect</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ST</td>
<td>Store</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**STD ORDER QTY**

<table>
<thead>
<tr>
<th>GROUP</th>
<th>TOTAL S.U. HRS.</th>
<th>UNIT S.U. HRS.</th>
<th>UNIT OPE. TIME</th>
<th>TOTAL UNIT HRS.</th>
<th>LABOR RATE</th>
<th>LABOR AMT.</th>
<th>BURDEN RATE</th>
<th>BURDEN AMT.</th>
</tr>
</thead>
<tbody>
<tr>
<td>BR</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**COMPLETION DATE**

| TOTAL L | M | B | T |
|---------|---|---|---|---|
4. Form for checking machine capacities against scheduled load
<table>
<thead>
<tr>
<th>ASSY. NO.</th>
<th>OPERATING &amp; S.U. TIME</th>
<th>SCHEDULE</th>
<th>G-1 - 00</th>
<th>G-2 - HVY. IND.</th>
<th>G-3 - LT. IND.</th>
</tr>
</thead>
<tbody>
<tr>
<td>111679</td>
<td>.00605</td>
<td></td>
<td></td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>111784</td>
<td>.00565</td>
<td></td>
<td></td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>111821</td>
<td>.01518</td>
<td></td>
<td></td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>111823-A</td>
<td>.00828</td>
<td></td>
<td></td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>111824</td>
<td>.00506</td>
<td></td>
<td></td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>111873</td>
<td>.00342</td>
<td></td>
<td></td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>111873-P</td>
<td>.00342</td>
<td></td>
<td></td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>111874</td>
<td>.00342</td>
<td></td>
<td></td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>111877</td>
<td>.00342</td>
<td></td>
<td></td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>111979</td>
<td>.01269</td>
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<td></td>
<td>*</td>
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<td>112067</td>
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<td></td>
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<td>112068</td>
<td>.00335</td>
<td></td>
<td></td>
<td>*</td>
<td></td>
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<tr>
<td>112184</td>
<td>.00323</td>
<td></td>
<td></td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>112409</td>
<td>.00223</td>
<td></td>
<td></td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>112871</td>
<td>.00230</td>
<td></td>
<td></td>
<td>*</td>
<td></td>
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<tr>
<td>112897</td>
<td>.00258</td>
<td></td>
<td></td>
<td>*</td>
<td></td>
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<tr>
<td>112897-A</td>
<td>.00258</td>
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<td>*</td>
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<td>112917</td>
<td>.00258</td>
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<td>*</td>
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<tr>
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<td>114380</td>
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<td></td>
</tr>
<tr>
<td>114381</td>
<td>.00537</td>
<td></td>
<td></td>
<td>*</td>
<td></td>
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<tr>
<td>114383</td>
<td>.00225</td>
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<td>*</td>
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<td>*</td>
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<td>.00222</td>
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<tr>
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<td>.00222</td>
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<tr>
<td>114430</td>
<td>.00194</td>
<td></td>
<td></td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>114430-A</td>
<td>.00194</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
5. Daily schedule sheet
6. Initial informal application form
SQUARE D COMPANY
Cedar Rapids Plant

Type of Work Desired       Shift Desired       Date

Name______________________ S.S. No.____________________
(Print) First       Middle       Last

Address______________________ Phone No.____________________

Male________ Female____ Age____ Height____ Weight____

Single____ Married____ Divorced____ Widowed____ No. of

Children____________________

If female please state maiden name____________________

EDUCATION AND TRAINING

Grade School________ High School________ Name of High School________

No. of Yrs.________ No. of Yrs.________

College________ Name of College________________ Degree________

No. of Yrs.________

Trade or Military Service School________________ Place________________

Other training or skills acquired________________

SERVICE RECORD

Branch of Service________________ Years________ Rank________________

WORK EXPERIENCE

<table>
<thead>
<tr>
<th>Employers Name &amp; Address</th>
<th>Dates Worked</th>
<th>Type of Work</th>
<th>Reason for Leaving</th>
<th>Earnings</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>QUALITY FACTOR</td>
<td>UNSATISFACTORY</td>
<td>QUESTIONABLE</td>
<td>SATISFACTORY</td>
<td>GOOD</td>
</tr>
<tr>
<td>----------------</td>
<td>----------------</td>
<td>--------------</td>
<td>--------------</td>
<td>------</td>
</tr>
<tr>
<td>Personality</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Appearance</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mental Alertness</td>
<td></td>
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<td></td>
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<tr>
<td>Interest</td>
<td></td>
<td></td>
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<tr>
<td>Capacity for Development</td>
<td></td>
<td></td>
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Do you recommend empl.? Yes ___ No ___ Work for which best suited Recommended Assignment

REMARKS:

RECOMMENDATIONS:
<table>
<thead>
<tr>
<th>QUALITY FACTOR</th>
<th>PERSONALITY</th>
<th>APPEARANCE</th>
<th>MENTAL ALERTNESS</th>
<th>INTEREST</th>
<th>CAPACITY FOR DEVELOPMENT</th>
<th>REMARKS</th>
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<tr>
<td>UNSATISFACTORY</td>
<td>QUESTIONABLE</td>
<td>SATISFACTORY</td>
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<td>EXCELLENT</td>
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<table>
<thead>
<tr>
<th>INTERVIEW RATING</th>
<th>DO YOU RECOMMEND EMPLOYMENT?</th>
<th>WORK FOR WHICH BEST SUITED</th>
<th>RECOMMENDED ASSIGNMENT</th>
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</thead>
<tbody>
<tr>
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<td>□ NO  □ YES</td>
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<tr>
<th>COMMITMENTS BY INTERVIEWER</th>
<th>INTERVIEWER</th>
<th>DATE</th>
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<table>
<thead>
<tr>
<th>DATE HIRED</th>
<th>JOB CLASSIFICATION</th>
<th>DEPT - SECT - GR</th>
<th>STARTING RATE</th>
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<tbody>
<tr>
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<table>
<thead>
<tr>
<th>FACTORY □</th>
<th>PERMANENT □</th>
<th>FULL TIME □</th>
<th>SHIFT</th>
<th>FIRST □</th>
<th>SECOND □</th>
<th>THIRD □</th>
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</thead>
<tbody>
<tr>
<td>OFFICE □</td>
<td>TEMPORARY □</td>
<td>PART TIME □</td>
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<table>
<thead>
<tr>
<th>SPECIAL ARRANGEMENTS</th>
<th>SQUARE COMPANY</th>
</tr>
</thead>
<tbody>
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</table>
# EMPLOYMENT APPLICATION

## PERSONAL INFORMATION

<table>
<thead>
<tr>
<th>PRINT</th>
<th>FIRST NAME</th>
<th>INITIAL</th>
<th>LAST</th>
<th>SOC. SEC. NO.</th>
<th>PHONE</th>
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<tr>
<td></td>
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</tr>
<tr>
<td></td>
<td>PRESENT ADDRESS</td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>PERMANENT ADDRESS</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>TYPE OF WORK APPLIED FOR</td>
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<tr>
<td></td>
<td>1ST CHOICE</td>
<td>2ND CHOICE</td>
<td>EARNINGS EXPECTED</td>
<td>$</td>
<td>PER</td>
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<tr>
<td>□ FACTORY</td>
<td>□ PERMANENT</td>
<td>□ TEMPORARY (DURATION):</td>
<td>□ 1ST SHIFT</td>
<td>DATE AVAILABLE</td>
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<tr>
<td>□ OFFICE</td>
<td>□ FULL TIME</td>
<td>□ PART-TIME (SCHEDULE)</td>
<td>□ 2ND SHIFT</td>
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<tr>
<td>□ MALE</td>
<td>AGE</td>
<td>BIRTH DATE</td>
<td>HEIGHT</td>
<td>WEIGHT</td>
<td>COLOR HAIR</td>
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<tr>
<td>□ FEMALE</td>
<td></td>
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</tr>
<tr>
<td>BIRTHPLACE (CITY — STATE)</td>
<td>ARE YOU A U.S. CITIZEN?</td>
<td>DESCENT</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ SINGLE</td>
<td>□ MARRIED</td>
<td>□ DIVORCED</td>
<td>□ WIDOWED</td>
<td>□ OWN HOME</td>
<td>□ RENT</td>
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<tr>
<td>MARITAL STATUS</td>
<td>HOME LIFE</td>
<td></td>
<td></td>
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<tr>
<td>DEPENDENTS (INDICATE AGE AND RELATIONSHIP)</td>
<td>DO YOU HAVE ANY AILMENT OR PHYSICAL HANDICAP?</td>
<td>IF YES, DESCRIBE</td>
<td></td>
<td></td>
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<tr>
<td>IF MARRIED — WIFE'S MAIDEN (OR HUSBAND'S) NAME</td>
<td>BIRTHPLACE</td>
<td>OCCUPATION</td>
<td></td>
<td></td>
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<tr>
<td>FATHER'S NAME</td>
<td>BIRTHPLACE</td>
<td>OCCUPATION</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MOTHER'S MAIDEN NAME</td>
<td>BIRTHPLACE</td>
<td>OCCUPATION</td>
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<tr>
<td>MILITARY STATUS</td>
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<td>PREVIOUS MILITARY SERVICE</td>
<td>FROM</td>
<td>TO</td>
<td>ARMY, NAVY, MARINES? BRANCH</td>
<td>RANK</td>
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</tr>
<tr>
<td>□ NO</td>
<td>□ YES</td>
<td></td>
<td></td>
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<tr>
<td>IN AN EMERGENCY NOTIFY — NAME</td>
<td>ADDRESS</td>
<td>PHONE</td>
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## EDUCATION

<table>
<thead>
<tr>
<th>SCHOOL NAME — LOCATION</th>
<th>DATES ATTENDED</th>
<th>MO.-YR. GRAD.</th>
<th>GRADE AVERAGE</th>
<th>CLASS STANDING</th>
<th>COURSE — MAJORS — DEGREE</th>
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<tbody>
<tr>
<td>GRADE</td>
<td>FROM</td>
<td>TO</td>
<td>WHAT 5TH</td>
<td>X X X</td>
<td></td>
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<tr>
<td>HIGH</td>
<td>FROM</td>
<td>TO</td>
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<tr>
<td>COLLEGE</td>
<td>FROM</td>
<td>TO</td>
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<tr>
<td>OTHER</td>
<td>FROM</td>
<td>TO</td>
<td></td>
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<tr>
<td>OTHER</td>
<td>FROM</td>
<td>TO</td>
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</tbody>
</table>

**EXTRA-CURRICULAR ACTIVITIES, HONORARIES, OFFICES**

## EMPLOYMENT

<table>
<thead>
<tr>
<th>EMPLOYER'S NAME — ADDRESS (START WITH PRESENT OR LAST POSITION)</th>
<th>PERIOD WORKED</th>
<th>TYPE OF WORK</th>
<th>REASON FOR LEAVING</th>
<th>EARNINGS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>FROM</td>
<td>TO</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>FROM</td>
<td>TO</td>
<td></td>
<td></td>
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<tr>
<td>3.</td>
<td>FROM</td>
<td>TO</td>
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<tr>
<td>4.</td>
<td>FROM</td>
<td>TO</td>
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<td></td>
</tr>
<tr>
<td>5.</td>
<td>FROM</td>
<td>TO</td>
<td></td>
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</tbody>
</table>

**WHICH OF THE ABOVE POSITIONS DID YOU PREFER? WHY?**
### ORGANIZATIONS TO WHICH YOU BELONG

<table>
<thead>
<tr>
<th>TYPE</th>
<th>NAME</th>
<th>NO OF YEARS</th>
<th>ATTENDANCE</th>
<th>OFFICES HELD</th>
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<tbody>
<tr>
<td>BUSINESS OR PROFESSIONAL</td>
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<td>FRATERNAL</td>
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<td>CHURCH</td>
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<td>OTHER</td>
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</table>

**IN WHAT SPORTS DO YOU ENGAGE?**

**HOBBIES?**

**WERE YOU EVER ARRESTED?**

### NAME AND ADDRESS

<table>
<thead>
<tr>
<th>(DO NOT GIVE IMMEDIATE RELATIVES)</th>
<th>BUSINESS AFFILIATION</th>
<th>YEARS KNOWN</th>
<th>TELEPHONE</th>
</tr>
</thead>
</table>

**NAMES OF RELATIVES OR FRIENDS IN OUR EMPLOY**

**WERE YOU EVER EMPLOYED BY THE SQUARE D COMPANY? IF YES, WHERE AND WHEN?**

**IT IS UNDERSTOOD AND AGREED THAT ANY AGREEMENT ENTERED INTO BY THE SQUARE D COMPANY AND THE APPLICANT IS PRECIPITATED UPON THE TRUTHFULNESS OF THE INFORMATION GIVEN HEREIN. I AM WILLING TO TAKE A PHYSICAL EXAMINATION WHEN REQUIRED. I AGREE, IF EMPLOYED, TO BECOME FAMILIAR WITH AND TO COMPLY WITH THE RULES AND POLICIES OF THE SQUARE D COMPANY. I UNDERSTAND ALSO THAT MY CLASSIFICATION AS A PERMANENT EMPLOYEE DEPENDS UPON SATISFACTORY PERFORMING WORK ASSIGNED ME DURING THE APPLICABLE PROBATIONARY PERIOD.**

**SIGNATURE**

**DO NOT WRITE BELOW THIS LINE**

### QUALITY FACTOR

<table>
<thead>
<tr>
<th>UNSATISFACTORY</th>
<th>QUESTIONABLE</th>
<th>SATISFACTORY</th>
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<tr>
<td>PERSONALITY</td>
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<tr>
<td>APPEARANCE</td>
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<tr>
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<td>CAPACITY FOR DEVELOPMENT</td>
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<tr>
<td>GENERAL REMARKS</td>
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**DO YOU RECOMMEND EMPLOYMENT?**

- [ ] NO
- [ ] YES

**WORK FOR WHICH BEST SUITED**

**RECOMMENDED ASSIGNMENT**

**DATE HIRED**

**JOB CLASSIFICATION**

**DEPT. - SECT. - GR.**

**STARTING RATE**

- [ ] $  
- [ ] MONTHLY
- [ ] HOURLY

**SHIFT**

- [ ] FIRST
- [ ] SECOND
- [ ] THIRD

**SPECIAL ARRANGEMENTS**
BIBLIOGRAPHY

Books


**Unpublished Pamphlets**


**Personal Interviews**


23. Fulrath, Tom, Interview between author and, Cedar Rapids, Iowa, April 4, 1956.


27. Ibid, April 17, 1956.