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Constructive criticism of personnel management in a lamp plant

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THESIS

Constructive Criticism of Personnel Management in a Lamp Plant

by

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CHAPTER I

INTRODUCTION

A. Definition of Terms

Any thesis or published pamphlet should properly begin with a definition of terms which the author will use. If, at the beginning, terms are not explained misunderstanding of the words and phrases will follow and the reader will interpret the thesis sometimes quite differently than the author intended. Therefore, it is most important for the writer and the future readers of the thesis that the paper begin with a definition of terminology.

The title "Constructive Criticism of Personnel Management in a Lamp Plant" should be explained first. The word "constructive" here is used to mean positive and helpful suggestions for improvement. Interpretative emphasis is "to build up rather than destroy." "Criticism" is defined as opinion or judgment as to merits or lack of them in regard to a specific task, principle, method, or operation. It is judging and defining something. The dictionary notes "personnel" as meaning "the persons as distinguished from things employed in any business or public service." By "management" is understood the act or art of conducting or controlling an enterprise.

Management should be considered as a guiding

influence in business. It may help formulate policies and it may not, according to the size of the business. Management positively does interpret, direct, and make operate those policies which the business is to follow. Personnel Management is a specialized phase of the organization. The person who performs this function must be an impartial referee, capable of winning and retaining the trust and respect of employees and management.

"Lamp" recalls a picture of a lantern but for the purpose of this thesis, the word is a descriptive one, peculiar to the industry. "Lamp" is the finished incandescent electric light bulb used in electrical fixtures in most of the rooms in every home today. Sizes range from 10 watt to 300 watt for home consumption. In the business, bulb is the empty glass globe, frosted or plain glass, in which the stem is eventually sealed. The stem is the tiny glass rod with the fine wire coils wound around the top that is inside the glass bulb. (See Figure 1, page 4) It is these fine wires that give off light when the lamp is placed in contact with an electric current. Later on in this text the word "lamp" will be used only when referring to the finished product as the consumer buys it at the local store. When the word "bulb" is used, it will mean the empty glass globe as purchased from the glass manufacturer. Stem will describe the glass rod with wire attachment which is finally enclosed in the bulb.
Figure 1.

Enlarged photostatic copy of Page 77, from the book entitled *Forty Eight Million Horses* by Humphrey A. Neill.
Personnel Management in a plant requires supervision over records of all employees as well as caring for their welfare. Included also are hiring, transferring, promoting, and discharging employees. In a large plant this is a big problem and one that should be well planned. The person who heads up such a department should be a well trained, specialized individual.

B. Purpose of Thesis

The lamp manufacturing industry is one that in the past has always had irregular employment. Although the demand is constant, poor production planning allowed two work shifts to over produce until storage facilities were overtaxed. There is a general shut down then of the entire plant. It would be better if one shift had steady year round employment. Irregular employment is not peculiar to this industry alone. Machine hours and material are carefully planned and scheduled long months in advance of actual need, but no provision is made anywhere for personnel.

Much of the unhappiness that results from periodic lay-offs can be avoided. Of course, time and thought would be required to formulate a plan to eliminate such sorrow. Gladly would school research departments work on this problem if they were only requested to do so and were given the facts. Many of the difficulties are deep rooted and would take time to cure, but the majority of shortcomings are very easily and readily correctable.
Up until 1945, there were few plants that had job specifications for all lamp plant openings. When the author started in as assistant personnel supervisor of a lamp plant, the job analysis and specifications were requested. Vaguely, she was informed that she was to hire and induct new employees, supervise the cafeteria and dispensary, and make herself "generally useful". It was obvious that management's attitude toward the function of personnel supervision was that it was a necessary evil they tolerated, a frill or a frosting, which had come about as a result of the war. Frankly, in the original interview the manager inquired whether or not the applicant could do shorthand and typewriting because "you might have to once in a while." Also the manager was interested in a nursing background because "you had dietetics that will help in the cafeteria" and "you might have to relieve the nurse in the dispensary occasionally." Still, no specific duties or directions were forthcoming. It seemed that the person who was hired was to be on her own.

So obvious was the challenge to create something from nothing, that the author decided to take the position, establish some workable system, and interest others in writing job specifications. It was resolved that the positions of personnel supervisor and assistant personnel supervisor would never again be looked upon as "a necessary evil" or a "war plant frill." There really was so much to be done,
and it was to start from a few mere policies, only half heartedly written, and completely inadequate.

Once a workable system was at least started, the personnel supervisor would be able to delegate the operation of the system to a secretary. This would give more time to the handling of human problems, welfare work, and creation of a friendly attitude on the part of the employee toward the company and the personnel department. It meant creating respect and trust among them. Needless to state, it was going to an educational program and would require the staunch support of management.

The lamp plant was one of eighteen company owned plants in operation at that time. The firm had expanded so rapidly, it was required to build or establish new plants rather quickly. There was definite need for standardization of personnel functions. The lamp plant had been the original factory, so why not start there with formulating personnel administrative policies?

The purpose of this thesis will be to show the industry as it is, the problems that arise in personnel, and the difficulties encountered endeavoring to correct them, due to the varied and numerous personalities involved.

Later on, an effort will be made to illustrate conditions as they are and suggestions will be offered to remedy these situations. There was and still is a definite need for a planned training course for personnel supervisors in this particular industry. The past educational background,
as well as work experience, should be along specific lines. The lack of this knowledge by the personnel supervisor handicaps not only the person, but those whom he supervises.

It is hoped that this text will give some suggestions and recommendations which will make the work of the lamp plant employee more pleasant.

C. History of Incandescent Lamp Making

Until 1880, gas companies flourished. In this year, Thomas Edison threw the stock market into a turmoil with his discovery of the incandescent lamp.¹

"Shares in the Edison Electric Light Company rocketed. Stock that had a par value of $100.00 a share was uncommonly sold at $500.00. In fact, the day came when these shares sold for $2,000.00, were resold in a few minutes for $3,700.00, and later the same day for $5,000.00 each."

The incandescent lamp was actually discovered October 21, 1879, but it was not until 1880 that production got under way. In that year, 35,000 incandescent lamps were manufactured and sold. This small production was to reach 920,000,000 lamps sold in the United States in 1939. During World War II, this production was more than doubled. Every ship that the United States Navy outfitted to sail from these shores required more than 5,000 incandescent lamps of all sizes in the lighting fixtures before sailing. Each ship also had to carry an inventory of three times that 5,000 lamps in storage. Gun fire and shell explosions took

a heavy toll of lamps with no ready source of supply available, it was necessary for each ship leaving port to be equipped with at least 20,000 incandescent lamps.

The incandescent lamp has one of the "greatest curves of American success." "Volume of production has risen perpendicularly while prices descend - and while at the same time the quantity of light per bulb expands 600 per cent."

Today, sixty-seven years after the invention of the incandescent lamp, a great deal of hand work on the part of machine operators is still required in completing the finished lamp. (Appendix A) Hand labor in the United States is costly. This is the reason why in 1937 there was considerable Japanese competition in miniature lamps used in flashlights. With labor cheap in Japan, the latter could produce more incandescent lamps cheaper than any United States manufacturer. To counteract Japanese competition in this field, business relationships among the national electric lamp industries were cartel-like and were affected by strong intercorporate ties.

General Electric Company directly and indirectly through its subsidiary, International General Electric

1. Ibid. pp.67

2. Hexner, Erwin. International Cartels, Chapter II, pp. 349
Company, had intercorporate connections with the largest producers of electric lamps in England, France, Germany, Hungary, the Netherlands, Japan, China, Mexico, Brazil, and Canada. This firm did much to inaugurate and maintain a United States tariff duty on the importation of incandescent lamps.

The lowered labor cost in foreign countries enabled those producers to manufacture lamps, export them to the United States, and sell them in this market at a lower price than United States manufacturers could manufacture them. Lamp manufacturers in the United States were a monopoly and managed to have an import duty charged on all lamps imported into the United States. This gave them opportunity to curtail competition from foreign sources and establish standard prices for United States lamps.

Although prices were maintained at a level which allowed United States lamp manufacturers a good profit, little was done for the improvement of working conditions or raising wages of the United States lamp plant employees. In 1924, the machine operator was receiving twenty cents (20¢) an hour for her labor. Once the worker entered the field of lamp making she stayed at that position until she left it. There were no promotional opportunities, no

job security, no pension system, or any other of the personnel services rendered to employees for their mutual welfare.

Scientific hiring, department transfer supervision, nor termination cause investigation were found in the lamp plant industry. There were few standard policies and practices. Those that did exist were not followed too carefully and personnel records were inaccurate.

With a product so widely used throughout the world as the incandescent lamp is used, personnel services for its million of workers should be constantly improved.
CHAPTER II
LOCATION OF PLANT

A. Importance to Labor Supply

In the early days of factory building, there was little knowledge of plant construction and layout as it is known today. Most buildings were wooden and built three or four stories high. They were not planned to fit the requirements of the type of manufacture to be carried on within their walls.

Location was determined primarily by climate and where the capital was. Bands and investors were located in trading centers or cities, hence construction was most likely to be in these areas. Some of these were harbor or seaport cities where lumber and brick could be imported cheaply by water freight. Lamp making requires a certain type of climate with enough moisture in it to offset the great heat required to produce lamps. Therefore, a temperate climate near the water furnished the proper facilities for good lamp making. In these cities were to be found the tradesmen to build and later repair the erected buildings.

Building of the actual plant was not considered along the lines of the best type for the welfare, health, and happiness of future workers. Little thought was given to ventilation, lighting, and the installation of mechan-
ical moving equipment later. Plant construction today considers all these factors in the planning of the building.

When the factory buildings were built originally in areas where there were a large concentration of people, a ready labor supply was available. Immigrants entering the United States settled in large cities. In the lamp industry, seventy-five per cent of the factory help are women. The location of lamp plants in these cities then offered a good supply of the type of girls needed to do machine and hand work required for lamp making. A great many of these girls were foreign born and talked little English. The latter was an asset rather than a handicap.

The General Electric Company has followed the practice of establishing their lamp producing plants in the crowded tenement districts of large cities. After World War II, this company reopened its lamp plant in East Boston. In the latter city there was no shortage of women workers such as other industries were experiencing. East Boston had a good supply of young single and married women, who for the most part were of Italian descent. These women make quick, nimble fingered factory workers. No transportation problem existed. The women lived within five minutes walk of the plant. In fact, the majority of them can hear the plant signal calling them to work from their own homes.
Ordway Tead and Henry C. Metcalf\textsuperscript{1} stress the importance of plant location in regard to labor supply when they state:

"Management should build plants with an eye on the availability of kind of workers industry requires."

The authors of this book think the Personnel Department should enter this activity and be consulted before plant locations are finally decided. In this way, the company would be doing all it could to insure a continuous labor market and would know the kind and quality of worker available for future expansion.

Even today the Personnel Department is seldom consulted in regard to new plant locations, and yet this is the department which will have to supply the workers after plant operation is started. More thought should be given to this angle. It is a serious and costly problem if construction of a plant is carried out in an area in which there is not an available labor supply now and where the future labor supply expectations are not promising.

B. Raw Materials

The abundance of electric power and gas oxygen supply had some bearing on the location of the lamp plant. Machines are electrically operated but the finishing of the

\textsuperscript{1} Tead, Ordway and Metcalf, Henry C. Personnel Administration - Its Principles and Policies. pp.65
lamp is carried out on the machine by placing the bulb over an open gas flame. (Appendix B) The gas and oxygen supply in the area is very important for the location of a lamp plant. The author acknowledges the fact that the presence of these raw materials as well as other factors influence the location of a lamp plant.

If these products are readily and as cheaply available in an area where a glass factory is located, it would be well to give serious consideration to locating the plant in the same locality. The reason for this statement is explained later in this chapter.

In lamp making the stem is sealed into an empty glass bulb. (Appendix C) The materials used in the stem operation are small glass tubes and fine wire coils. These materials are not bulky, are packed in small quantities, and easily shipped long distances. When it comes to obtaining the bulb, there is a major problem. Bulbs are packed in cardboard cartons, six hundred to the box, and shipped by freight car. When the freight car arrives in the lamp plant city, the bulbs are transferred to trucks, driven to the plant, unloaded, and stored until need for them arises. All this handling naturally causes a great deal of breakage which is a production loss.

Glass factories are located in large cities where there is an available labor supply. Why then should
lamp plants be constructed long distances from the source of supply of its primary raw material? The labor supply is plentiful where the glass factory is located so why not locate the lamp plant in the same area? This suggestion merits major consideration when it is known that an operator produces twelve hundred lamps an hour during an eight hour day. At the end of the day, she has handled nine thousand six hundred finished lamps. Multiply one operator by twenty and the result is one hundred and ninety-two thousand lamps a day. Five days a week means that nine hundred and sixty thousand lamps are finished per week by twenty operators. In order to operate a lamp plant, it means then that at least one million bulbs per week must be transferred from Providence, Rhode Island, to Salem, Massachusetts. Forty thousand glass bulbs can be accounted for as breakage due to the long distance transported and many handlings by not too careful shipping and stock clerks.

Bulbs require large storage areas which could be put to better use if the lamp plant were located near the glass factory. The labor cost is very high, to say nothing of the time consumed in the operation. With so many broken bulbs in the carton by the time it reaches the operator's

1. All of the glass bulbs used by Sylvania Electric Products Incorporated, Salem, Massachusetts, were purchased from Corning Glass Company, Providence, Rhode Island.
machine, another serious problem presents itself. The twelve hundred an hour lamp producing operator must quickly, and without looking, plunge her hand into that carton of whole and broken bulbs and risk the danger of being cut by broken glass. Operators wear fine white muslin gloves with the index finger and thumb of the glove cut away in order that the operator may, by finger sensitivity, test the quality of the stem she inserts on the machine. Unless her index finger and thumb become calloused and scarred, she receives many nasty cuts during the course of her daily work.

These problems could be avoided if the bulb or glass factory were located near the lamp plant. It might be possible, if the two were constructed side by side, to install a moving belt from the glass producing building to the other lamp producing plant. This would eliminate glass factory packing, use of cartons, handling of cartons, transfer to freight cars, transportation over large areas, unloading, trucking, storing, and finally transferring the cartons to the operator's machine with the problem of disposal of empty cartons twice an hour or oftener for twenty operators during an eight hour day and a five day week.

Until one has seen this provision of primary raw material at the work bench, when needed, one cannot picture the planning, scheduling, and time this operation alone
consumes. Railroad or truck strikes stop bulbs from reaching the lamp plant. This necessitates shutting down the lamp plant. Location of the two industries in the same area would eliminate this catastrophe.

At the lamp factory, trucks are constantly unloading bulbs all day long. Bulbs are bulky and no building has storage facilities to care for two hundred thousand a day or a million a week, not to mention the problem of storing a million finished lamps a week. One of the main difficulties of storing finished lamps is the spoilage that occurs if they are kept too long and if the climate is not right. The climate of the area where bulbs are manufactured is also the best climate for storage of finished lamps.

When all these costs and personnel-welfare disadvantages are studied, it can be shown why location of plant is important and why the personnel department should be consulted during the drawing of plans for construction of the lamp plant. It is the personnel director who must provide the labor supply. It is the personnel director who is concerned with the worker when she suffers cuts and scratches which sometimes later become infected and cost the firm money in compensation, medical bills, time, and lost production.
C. Mores of Area

The word mores means the culture and customs of the community. When the personnel director is selecting primarily women to do factory work, this becomes important. The personnel director does not go into the residential neighborhood for the factory labor supply. The customs and standards of this group are somewhat different from those who do manual labor or work in factories.

When the lamp plant construction is contemplated, that is the time for the personnel director to do some research work in the communities which are being considered as a site for the new building. For this particular type of manufacture, there is need for women who do not mind the heat, enjoy working at monotonous tasks, and do not live far from the plant.

The community should be in an area where there is already some industry employing a large number of men. Here is where the glass bulb making industry located near the lamp plant comes in. Both industries use heat at very high temperatures in the process of manufacture.

The Italian or Polish family would be ideal for these two types of work. This statement is made as an example of the type of family that has been found to be best suited to this work, but it does not exclude other families. (Appendix E) The customs of these two races are important.
They settle and congregate in small areas. They become a tightly knit and close group who tend to develop one or more skills along specific trades. (Appendix D)

In these families it is usual for both the husband and wife to work. They have large families and when the children are very young they leave school and start to work. The large family is also a source of future employees for the lamp plant.

These people are very industrious, do not mind long hours if the wage is high enough, and they do not require much leisure time. They are thrifty people, save a great deal, and do not crave luxuries. The Italian and Polish areas are excellent sources of employees for the lamp industry. Their mores are such that they coordinate very well with the work requirements of machine operators.

When a lamp plant is located in an area where the customs are old and well established, these combine well with employment requirements. It affords an ideal labor supply for the personnel director. In lamp making the worker who seals the stem into the bulb is the most important worker of the whole factory. Italian and Polish women make up the majority of those "sealers." They work fast, are very quick, start working at an early age (sixteen usually), and even when they marry continue to work.

"Sealers" are the most difficult workers to hire.
The girls who are willing to learn must be able to stand terrific heat, be fast, and willing to repeatedly do the same operation day in and day out. Training takes a long time. The physical make-up and customs of certain races are best suited to this type of work.

When a plant is being located, the personnel director must consider mores of the area in regard to his labor supply. Racial customs and philosophy are important factors in obtaining the type of worker best suited to his particular industry.
CHAPTER III

PLANT ORGANIZATION

A. Department Divisions

In the lamp plant during World War II, there were six departments; namely, Personnel, Plant Accounts, Purchasing, Product Engineering, Industrial Engineering, and Quality. The factory was in charge of a manager who had an assistant. The latter was called the Factory Superintendent and had charge of all actual lamp production.

The production department foreman, as well as the shipping department foreman, reported to the superintendent. All other department supervisors reported directly to the manager. The Personnel Department consisted of a male director and female assistant with four clerical workers. The plant dispensary and cafeteria were Personnel Department functions. The Personnel Department worked directly for the Plant Manager but functional directions originated with the Industrial Relations Department. (Appendix E)

The Dispensary personnel was a Personnel Department problem, and yet the safety function was under Industrial Engineering. This created a great deal of confusion and divided responsibility was not conducive to obtaining best cooperation from the nurse. Later on in this thesis,

this problem will be discussed in more detail.

Better plant organization would be one that did not require so many departments. The lamp industry in peacetime cannot support such a plant organization. During World War II every machine operator in the plant was carrying her own cost and the cost of employees charged to indirect overhead as well. A more efficient plant organization is one built around a plant manager, in charge of the factory, and an industrial engineer working as his assistant. The plant manager would assume the duties of factory superintendent in addition to functions he already performed. The industrial engineer's functions would include Industrial Engineering, Purchasing, Plant Accounts, and Quality.

Company policies and rules originate in the Industrial Relations Department which is a major plant organizational division of the Executive Administrative Department. Where there are eighteen plants in one company, these policies become standardized.

In place of the lamp plant organization as it was during World War II with six departments and their specialized supervisors, the two man plant staff should be substituted. In this case, the Industrial Relations Department would consist of highly paid, thoroughly trained men in Industrial Engineering, Wage Incentives, Labor Contracts, Safety, and all other functions pertaining to Personnel.
A plant manager would receive his direction from the Vice-President in Charge of Operations, and the various other specialized company policy forming committees. If the plant manager had a safety problem in his plant, he would call on the safety specialist in the Industrial Relations Department. This would reduce plant organization expense because he would not be required to maintain large departments and personnel. The particular plant would contribute its share of the expense of maintaining these specialists in the Executive Administrative Department.

So far as personnel department is concerned in the individual plants, there would be no necessity for such a department. A counsellor in the dispensary could handle the paper work and records. A competent, well educated nurse would assist here with counselling. Department divisions as they are in the lamp plant are expensive and unnecessary. Better planning and coordination so far as plant organization goes would greatly reduce costs.

B. Selection of Plant Personnel

Although the individual plants throughout the company now have Personnel Departments, requisitions for plant supervisory openings are not given to the Personnel Director. The first knowledge he has of the opening is when the new supervisor presents himself to be "inducted." Even then the person who does the inducting does not know
the title of the position the man will fill.

The present procedure is for the plant manager to make out a requisition sheet in quadruplicate. The copies are on pink, buff, yellow, and white paper. He retains the yellow and white forms in his file and mails the other copies to the area Supervisor of Industrial Relations. The latter writes a requisition conforming to a Job Code description and sends it on to the Administrative Industrial Relations Department. This section records it and sends ditto copies to a long list of employment agencies and schools. Some of these already have the company employment application blanks which they may have filled out by likely looking candidates and send to the Administrative Industrial Relations office.

When that department receives the applicant's qualifications, the Industrial Relations Director or one of his assistants compares the record with the outstanding requisitions. If the examiner thinks the applicant suitable, he arranges with the male interviewer to see the applicant. It is the interviewer who decides whether or not the applicant is to be further interviewed by anyone in the company. If the interviewer likes him and his qualifications, he arranges for him to see the respective plant manager who originally requested an applicant. If the plant manager thinks the candidate suitable, he hires him and introduces
him to the department supervisor for whom he will work.

The following disadvantages are present in this procedure:

1. Employee dissatisfaction with the system
2. Qualifications of Industrial Relations interviewer
3. Lack of integration.

1. Employee dissatisfaction with the system:

The procedure for selection of plant personnel in this case is cumbersome and inadequate. It is not coordinated with the actual plant system. There is too much secrecy to this method. To the employee of long standing, it does not set right. He feels he has a right to know when vacancies and chances for promotion occur. Secrecy makes him think it is an underhanded way to do things. After all, he lives in the community, is a part of it, and is loyal to the firm, so why should he not have the first opportunity to better himself in the firm? In fact, he never knows of the plant personnel vacancy until the new replacement has already been hired. Not only is the employee unaware of the opening, but the plant personnel director is kept just as much in the dark.

2. Qualifications of Industrial Relations Department Interviewer:

A college degree, agreeable personality, and attractive appearance seem to be the principal qualifica-
tions for this position. No technical experience is required. The man is not required to work in a company plant for a period of time before he assumes the position as interviewer of plant personnel applicants. His knowledge of job qualifications and training are gained by reading the job specifications as set up in the Job Code Book and information gained by talking to plant managers. There is no work period in an actual factory where the interviewer would learn the product, manufacturing process, department divisions, and education and experience required by department heads who pursue their various professions.

3. Lack of integration:

Where products produced are along similar lines, it is comparatively easy for a lamp plant engineer to transfer to say a radio or fixture plant supervisory position without a lengthy training period. The personnel in one plant already know company policy and procedure. The employee has seniority and has proved his worth to the company. The present method of supervisory personnel selection does not allow for using these men in different plants or transferring them from a plant where a lay-off occurs to another plant where there are outstanding requisitions for men with their qualifications. Here again is where the Industrial Relations Department interviewers should have
more than a mere acquaintanceship with plant functions and personnel qualifications. To discharge fifteen engineers, three industrial engineers, two accountants, and a production foreman from one plant while a similar plant in another area has need for these men is not good employment practice.

Such a condition existing in a company is not good advertising for the firm. Present employees resent this method of selecting personnel. When technically trained men who are laid off in a plant learn that the same company has hired a new employee in another plant a few miles away from the plant where he worked for the same type of work he did, it does not set well with the discharged man who has acquired seniority with the company. It creates bad employer-employee relations.

A more efficient and better method should be found for selection of supervisory personnel.

C. Seniority

In any large organization there will be found key men who have worked their way up through the ranks by their seniority with the company. It is a fine tribute to these men that they have attained positions of executive and supervisory capacity. Nevertheless, this practice can be carried too far in some firms.

In lamp making, young women are the prime labor supply need. In the production part of the plant, there
are not more than fifteen positions which do not require machine or bench operators. Foremen and machine maintenance people are men. Plant supervisory personnel are men. This organizational arrangement makes it impossible for women to expect to attain positions of importance on a length of service basis.

Men in the plant are primarily machine adjustors, engineers, and office management supervisors. These men are not potential executive material, mostly because they were not hired originally on a scientific selection basis. In spite of this, during World War II personnel more often were promoted solely on the grounds that the person had been a long time with the company. When the war ended, supervisory positions were retained according to the individual's seniority with the firm. In some cases, personnel hired during the war were better educated, better qualified, and made better department heads than those who were retained because of their long service record with the company. Company policy had always been to retain key personnel on a basis of company seniority rather than plant seniority. This led to the termination within the individual plants of well qualified men and the retention of poorer equipped men with longer seniority with the company.

Insofar as plant organization is concerned, seniority should not be accorded too much weight. So many other qualifications are of more importance in se-
lecting men to supervise the operations of others. If all other things are equal and a man has a long service record with the firm, the best policy would be to transfer the man to another plant when he is given the promotion.

In plants of five hundred or less employees, as is the case in lamp manufacture, seniority is very important in the eyes of employees. When a ten year company employee is promoted to a supervisory position, other ten year service men in the plant also ask for a promotion. Seniority alone is not a good basis upon which to promote men to more responsible positions within the firm.

Every company should maintain a proper balance between supervisors promoted from the ranks on a seniority basis and new men hired from outside the firm. A company needs new ideas which new employees bring to the new firm from their former places of employment.

D. Promotions

When organization personnel selection is an Industrial Relations Department function and where there is not good interplant coordination of personnel, it is apparent that promotions will not be handled satisfactorily either for the employees or management.

Knowledge of better positions open in other company owned plants is not available to the lamp plant manager or personnel supervisor. This handicaps the man
who enters the firm with the idea that there is opportunity for his advancement within the firm. Department heads and plant managers who have the good fortune to obtain efficient assistants are selfish when it comes to recommending promotion for their assistants. The reason for this is that they fear they will not obtain a replacement who will work out as well as the present employee, they are reluctant to take the time to train new men to fill places left vacant by promotion, and sometimes the supervisor does not want his assistant to progress farther than he does with the firm.

Very little promotion is done on a merit basis. It is against good employment practices to limit promotions to men with seniority in the firm. Of course, company policies always enter the picture when promotions are discussed. There is always present in any company those individuals who have an "in" or "fit" with management and are advanced within the company on this basis. In this case, it is most important for the "political" appointee to retain competent assistants and the latter can expect to remain in those positions without promotion so long as the supervisor heads the department.

Because promotions to supervisory positions are seldom given except on a seniority basis, new employees spend a year or two with the company, gain invaluable experience, and then find employment in a similar capacity
at a higher wage with another firm. To avoid this Messrs. Lansburgh and Spriegel advocate a promotion system which frequently involves transfers. These authors say:

"If an organization fills all executive vacancies from within the ranks, it will lack the drive that comes from new ideas and any promotion policy must be tempered with their knowledge."

When organizing a promotion plan for selection of organizational personnel, the same authors say:

"The aim is to make sure the worker has the maximum responsibility, and earnings and the firm has the benefit of his greatest ability."

To plan and carry out such a program a man or woman who specializes in personnel work is needed. It should be the duty of one of the Industrial Relations Department experts to study this problem thoroughly and design a program which would reward employees with performance, length of service, number of dependents, age, and physical and mental fitness for the promotion.

Ability, personality, and intelligence tests should be used also in determining promotions. Mr. Eckart of the McKesson & Robbins, Incorporated drug division 1


2. Ibid.

3. Visit to Mr. Eckart, Divisional Manager, McKesson & Robbins Incorporated, 385 Summer Street, Boston, Massachusetts on February 11, 1947.
office here in Boston offered the author valuable evidence of the use of Minnesota University tests for promotional purposes. Mr. Eckart said his experience in this particular part of his testing procedure had been a means of avoiding a great many personnel problems in regard to promotional questions. When a vacancy occurred in his supervisory staff and he had several men with equal company seniority apply for the promotion, he set a time for all applicants to take the test together. The test results gave him an opportunity to evaluate each applicant's ability to handle people. The men approved the competitive examination idea and Mr. Eckart had no problems whatever when he appointed the man with the highest score to the position.

The Personnel Director should select tests suitable for measuring capacity, ability, and personality characteristics which should be present in the employee who is promoted. When a vacancy occurs and employees demand to know the reason why they were not promoted to the vacancy all applicants could very easily be given a competitive test together with non-employee applicants for the position. Individual results, in this case, should be open to the contestant after the final decision on the promotion has been made. The contestant, of course, would be allowed only to see his own score and corrected paper so that he might profit by mistakes he made in the examination. The Personnel Director need not divulge the score of the person who obtains the
promotion. If asked directly by an employee, it is sufficient to remark that his score was higher than the contestant inquiring.

Tests as well as personal interview seem the best way to handle promotions to supervisory positions.
CHAPTER IV

PERSONNEL DEPARTMENT

A. Organization

The lamp plant individual personnel department organization has been set up with a Supervisor of Personnel in charge. Reporting to him is an employment interviewer, an assistant interviewer, safety engineer, a male employee counsellor, a female employee counsellor, training supervisor, cafeteria stewardess, two nurses, a secretary, two stenographers, and three record clerks. (See Figure 1, page )

Any lamp plant that operates on a unit cost competitive basis could never carry the tremendous expense involved in a Personnel Department of this size. So many people are not necessary. One very competent, well trained personnel counsellor could handle all the detail. The counsellor would be stationed in the Dispensary and he or she should report directly to the plant manager.

During World War II, personnel departments were greatly expanded. There was need for this when labor was so difficult to obtain. Added to this responsibility, the personnel director had gasoline rationing, "share-the-ride" plan, cafeteria meat ration coupon allotment, Selective Service problem, Manning table, War Manpower Commission restrictions, increased government statistics, unhappy employees, returned veterans, and many more duties which
the end of the war eliminated.

When the lamp plant production workers joined an organized labor union, continued maintenance of a separate personnel department became unnecessary. The union contract was negotiated and signed by the plant manager. When grievances went beyond the foreman-steward stage, it was the plant manager and union official who settled them.

A suggested improvement in a lamp plant personnel organization would employ, as mentioned before, a highly competent counsellor who would report directly to the plant manager. The counsellor should have secretarial training, be able to type, and do office clerical work. The plant safety engineer is not necessary if the dispensary nurse is carefully selected, educated, and experienced in industrial nursing, application of Workmen's Compensation Act\(^1\), highly intelligent, and with a good knowledge of psychology. The nurse would replace the safety engineer and do some counselling. She would report directly to the plant manager. This type of organization is in keeping with the recommendation of Floyd R. Flodsett\(^2\) as reported in the magazine Vocational Guidance.


2. Flodsett, Floyd R. The Vocational Guidance Journal "Streamlining the Counsellor's Office" December 1940 Vol.XX., No.3.
All employee records would be the responsibility of the personnel counsellor who would be capable of coordinating and maintaining complete histories, medical and X-ray reports, progress notes, wage data, and all material pertinent to individual employees.

A competent chef would supplant the cafeteria stewardess. He would assume complete charge of the cafeteria, purchase supplies, keep records, and maintain his own working force. There is no need for two people to perform these functions. He would report directly to the plant manager.

B. Functions

In a lamp plant during World War II personnel department functions were numerous and extensive. The personnel supervisor worked directly for the plant manager, but was functionally responsible to the area supervisor of Industrial Relations. The duties of the persons who assumed the personnel functions under the proposed simplified organization would be different.

The counsellor's duties would include screening all applicants, hiring, placing on payroll, introducing new employees to company supervisors, acquaint new employees with company policies, arrange transfers, follow-up employees, give guidance and advice when requested, be concerned with employee welfare, and maintain complete and adequate records on all employees. The counsellor should be the last one to
release the employee from company employment. It should be the duty of the counsellor to keep the plant manager informed on personnel matters, and to compile labor and employment statistical reports which will be useful to him in making decisions which deal with employees, future labor supply, and production planning. The counsellor must be competent to analyze and judge preemployment physical examinations with the objective being to conform to group insurance regulations and to the Workmen's Compensation Act.

The insurance company that insures the company for general liability, workmen's compensation, group, and other types of coverage is always ready and willing to cooperate in determining who is and who is not employable under the terms of the company insurance contract. In this way, the counsellor will receive immeasurable aid from the insurer. The counsellor as well as the nurse should follow-up sick employees, see that employees who have known physical limitations and work restrictions are properly placed, and check their supervisors from time to time to make sure that health restrictions are obeyed.

The nurse should administer First Aid to injured employees, evaluate the seriousness of the accident, decide for or against medical attention or hospitalization is advisable, record all data accurately, conduct eye and hearing tests, treat patients kindly, be ready to offer constructive advice psychologically, be responsible for maint-
enance of safety rules, appoint an employee safety committee, and report to the plant manager. The nurse should be capable of assisting the counsellor with many details. She should keep attendance records, check on absentees, visit the sick, and make recommendations to management in regard to the improvement of the health and safety of employees.

When there are meetings of the insurance company safety engineers or the Administrative Industrial Relations Department Safety Engineer with the plant manager, the nurse should attend them, take notes, and make her own reports to management. She should accept recommendations and suggestions for improvement of health and safety of employees and be held responsible for carrying them out.

The cafeteria would be in charge of a chef whose duty it would be to conduct the restaurant as any eating establishment would be operated. His responsibility would be to efficiently produce good, wholesome lunches at the lowest cost to the employee. Purchasing of supplies and equipment, accurate records, preparation and distribution of food, employee discipline, building and equipment maintenance of his department would be under his jurisdiction. He would report directly to the plant manager. To the latter, he would submit weekly reports of his menus, work schedules, receipts, expenditures, and inventory. At meetings of the plant manager and accountant, he would attend those that had to do with his cafeteria department.
Because cafeteria supervision is a specialized job and one which is not directly concerned with lamp plant manufacture, it is best to have this department under a skilled chef. Usually the plant manager knows little about these functions and for information about them must depend entirely upon the man who operates the cafeteria. Therefore, it is important that this position be filled by a thoroughly trained, honest individual.

Thus we see that the personnel department functions can be well attended to by three individuals, each reporting to the plant manager.

C. Practices and Policies

Each plant has a loose leaf notebook containing Standard Practices and Policies. The contents of this book originate in the Administrative Industrial Relations Department. As policy changes occur, copies of them are sent to the various plants.

The lamp plant personnel director has little to do with formulating policies. Various specialists in the Industrial Relations Department issue rules on safety, smoking, proper factory attire, wage rates, credit union management, pension plan, hours and conditions of work, vacations, group insurance, Blue Cross, induction, transfer, and termination procedure, cafeteria, and dispensary management and a great many other details.

Criticism of this method is that it is not flex-
ible enough to care for the rapid and continuous changes that occur in individual plants. Those who make the policies are too far away from where they are being practiced. The writers have not worked in a plant close to the problems, therefore, many policies they write do not solve plant situations. In order to change a policy, the plant manager or personnel director must consult with the area Supervisor of Industrial Relations (who again is a man who has not worked in a plant) who relays the information to the Administrative Industrial Relations Department.

This procedure takes time and when employees' emotions are involved in the question, time is a costly factor. The employee, while awaiting an answer, has his emotions at play and the more he thinks about his problem, the less agreeable he becomes about the delay in answering his question. When vacation time is being figured, this has occurred time and again. In years past, before 1943, records were not kept so accurately as they are today. Perhaps some employee had taken a leave of absence of three months due to illness in her family. Three years later, a fellow employee does the same thing. Company policies at that time were not written so the interpretation as to interruption of employee's length of service with the company is left to the personnel director. The latter decided one was a break in service and the other was not.

Twenty years later when the company has rigid Standard Practices and Policies, the question of length of
service with the company is raised by each of these employees. This is an actual case, the decision of which resulted in the loss of an expert sealer. The unwieldiness of Standard Practices and Policies, the fact that each case involves the emotions of employees, the lack of participation in forming policies by the Personnel Director, together with inefficient recording of exact information in each case proves that these changes should be made in the practice of having plant policies originate in the Administrative Industrial Relations Department.

Employees can not understand why their particular plant must follow the rigid rules made for a plant manufacturing lamp fixtures instead of lamps. They have a point there because work bench areas, raw materials, safety and work conditions are very different in the production process of each manufacture. Lamp plant operators work in excessively hot areas, are exposed to glass breakage, open fires on machines, and work faster in contrast to a lamp fixture plant operator. Working conditions of the lamp plant operator influence her emotions and involve her safety awareness much more than the fixture plant operator. Harold R. Bixter in the Personnel Journal expresses a good opinion on this subject. Safety is one of a great many reasons why plant policies cannot entirely originate in the Industrial

Relations Department.

Specific plants have problems which are not at all similar to those in any other plant. A better method would be to have general company policies that have to do with practices common to all plants formulated by specialists in the Administrative Industrial Relations Department. Policies which concern the welfare and emotions of employees directly should originate with individual lamp plant managers. The latter would submit policies he recommended for his plant to the Administrative Industrial Relations Department for corrections and approval. When this had been obtained it would become plant policy.

Before drastic procedure changes are made employees' records would have to be adjusted.

D. Recommendations

In Section A on Personnel Department organization, it has already been recommended that the lamp plant personnel department as such be eliminated. As it is now, it is too costly and not necessary. The personnel counsellor would assume the duties of the Personnel Director and be directly responsible for both directional and functional assignments from the Plant Manager. There would be no division of supervision.

In Section B on Functions the duties of the Personnel Department as they now stand were enumerated.
Suggestions were offered for changing these duties somewhat. With a counsellor and nurse handling personnel functions and reporting directly to the plant manager, there would be less opportunity for laxity in performance of duties. The spread between the top man in the plant and the operator would be lessened. The plant manager would be closer to plant personnel problems. Employees would feel nearer to him and more willing to air their grievances.

With a separate Personnel Department, employees go there first. With the work of supervising seven or eight personnel department employees, as well as performing his own functions, the Personnel Director does not have time to quickly relay serious problems to the Plant Manager. Often the thing has been settled before the latter learns that a problem existed. Elimination of the Personnel Department, as it is now, and assumption of its functions by a counsellor and nurse, these situations when they occurred would be promptly brought to the attention of the plant manager.

As stated before, the end of the war and the introduction of a labor union contract in a lamp plant does away with the need for a separate department. It does not mean that the functions of a Personnel Department are eliminated. It merely means transfer of functions and substitution of different people to do the work.

An improved method for formulating specific plant
practices and policies has already been offered in Section C. If these recommendations could be followed, the machine operator's position in the plant would be improved both as to welfare and wages. The savings in elimination of the Personnel Department alone could be used to increase the hourly workers' rate.

At the present time it is the machine operator who bears the burden of indirect overhead charges. Much can be done to diminish the load, if men who know the problems intimately would give sufficient time, thought, and planning to improving the employees working conditions.
CHAPTER V
ATTITUDE OF SUPERVISION TOWARD PERSONNEL DEPARTMENT

A. Reasons

Before World War II, little was heard about Personnel Departments, Personnel Directors, or their functions in the New England lamp industry. Business was not so conscious of the need for this function. Although a firm had no specific Personnel Department or Personnel Director, the personnel functions were, nevertheless, carried on by the Office Manager, Plant Superintendent, or Factory Manager.

The initial screening of applicants was done by a woman employment interviewer. If she thought the person measured up to the company standards insofar as appearance, personality, and character were concerned, the applicant was sent to the supervisor of the department requesting an additional worker. The department head then decided whether or not the person was to be hired.

Department heads settled grievances within their own departments, arranged transfers, and had the right to terminate an employee. The employee's record was in the employment office so many of these transfers were not recorded until some time after they occurred. With the foreman maintaining the right to terminate, often this information was not available to the plant manager or recorded in the employee's history until after the employee had left
the plant. An employee's final contact with the firm was the payroll office.

In the lamp plant during the years previous to the war, the foreman exercised these privileges. Unless an employee had long service, she sometimes never talked the situation over with anyone but the foreman. If she had long service, she usually knew the employment interviewer and the manager so that if she was dissatisfied with the decision of the foreman she took her problems to the employment interviewer or plant manager. Because plant practices were not so well defined then, the employment interviewer or plant manager decided the employee's problem on the basis of her story and gave her their decision. This was not recorded anywhere for future reference. As a result, when the plant employees joined a labor union after World War II, there were forty or more cases of disparity in employee's understanding of their service record with the company.

Some of these were settled by seeking the past employment interviewer, consulting the plant manager, and interviewing the foremen in an effort to obtain information in regard to the story. These people depended upon their memories to recall circumstances in the individual cases. These were openly discussed with the employee and a decision as to the length of service to be credited to her re-
cord decided after approval by the area supervisor of Industrial Relations.

This is just one example of the reason why foremen and department heads in the lamp plant had little regard for the Personnel Department. In fact, the majority of supervision continued to disregard the Personnel Department entirely, and continued as before. The plant supervisors did not trust the Personnel Department, thought personnel people did not understand the lamp manufacturing department's particular problems, and preferred to settle their difficulties without interference of any kind.

In a lamp plant where twenty percent of the employees had been employed more than ten years, big problems exist when an attempt is made to suddenly change past practices and policies especially if supervision has an indifferent or slightly antagonistic attitude toward Personnel Department functions.

Some of these attitudes on the part of supervision and employees are very well explained by Boris M. Stanfield in an article he wrote for the Personnel Journal. He says:

"American factories are filled not only with dust and soot but also suspicion and fear. There is distrust and even hatred."

Changing these attitudes takes time and patience. It cannot be done quickly. Once supervision has accepted the need for the personnel function, the job is almost done. If supervision has the proper attitude (it being one of trust and respect together with a willingness to seek advice) toward the personnel function, the employees working under these supervisors will fall in line very soon.

B. Suggestions

One of the first things the person who carries out the personnel functions should do is become acquainted with supervision. This is not accomplished by sitting in an office. Supervisors are busy people, loaded down with innumerable and various problems. They direct the activities of so many other individuals, they must be constantly at their posts to answer questions, supervise production, and care for emergencies. It behooves the personnel counsellor then to seek out these men at their work stations. To be sure, the environment is not quiet or conducive to discussion of problems, but just seeking the supervisor out is a good psychological move. After the third or fourth interview with the supervisor, the counsellor should know a little about the foreman's personality, his production problems, and his attitude toward those working directly under him. It is suggested that the counsellor make progress notes on these visits to foremen after she returns to her office. These should be studied and a plan for
future action outlined. Of course, the foreman during this time is also asking questions of the personnel counsellor, formulating his opinion of the interviewer's attitude, and its relationship to him.

If the personnel department representative is well trained for the position, has a genuine interest in doing a good job, and displays a real friendliness toward supervisor and employees, trust and respect can be won by the end of three months.

Next comes the stage when foremen seek the services of the personnel department. Once they trust the counsellor, believe her qualifications and personality are capable of doing a good job, they will find time to spare a few minutes from their department to go to the personnel office. Supervisors like a little break in routine and take this time to unload their personnel problems with their labor to the personnel counsellor. Assurance from the counsellor that she will do everything she can to lessen their burden and help the supervisor do his job better is a MUST. The personnel office door or dispensary should be always open to supervisor and employee alike.

Mr. King MacRury1 In the Personnel Journal of December 1946 does not approve of the "Open Door" policy. Nevertheless, at the present time many more companies are

practicing this policy. When this "open door" policy fails, it may be due to the personality and methods practiced by the personnel counsellor.

By experience, the author has learned that nothing irritates a foreman more than when the personnel counsellor listens to one of the foreman's employee's grievances and the counsellor expresses an opinion to the employee without consulting the foreman. The second suggestion then would be that the personnel counsellor never confer with an employee in regard to job problems, grievances, transfers, promotions, or terminations until the foreman has been notified and asked to be present during the interview. When the foreman, employee, and personnel counsellor are all present in conference, then is the time to discuss the employee's job problem. The counsellor should act as an impartial referee, always ready and willing to interpret company policy, and guide or advise either or both supervisor or employee when requested or when they are can not compromise. When supervisors and employees know they are going to receive this type of treatment from the Personnel Department, they will look to the latter as a representative of both management and employees. Both will know that they will obtain a fair, honest, and impartial hearing.

The third suggestion is that the personnel counsellor always be well informed on company policies and practices, changes in them, and make suggestions for improvement.
The counsellor must keep herself informed on questions outside the company but which bear some influence upon working conditions within the industry. She should be acquainted with state and national labor laws, insurance, social security benefits, unemployment relief, accident and health insurance, and all other subjects that directly affect the lamp plant worker's conditions of employment. Foremen appreciate the ability of the counsellor to interpret these changes and relaying the information to them.

So much can be done by the personnel counsellor to make the supervisor's burden lighter, to create good employee-employer relations, and to promote the adoption of a cooperative attitude on the part of both management and workers. A great deal of personal satisfaction can be found in this work.

C. Education

Not enough educational work has been done insofar as the lamp plant machine operator is concerned. Some supervisors who have long service with the company have had no formal education in psychology, sociology, or other sciences that deal with people, their customs, and their behavior.

During World War II, the United States Government appropriated money to conduct courses within industry in production control, quality, methods, job training, and many more phases. The Government arranged with Universities and Colleges to send teachers into various plants and give these
courses to supervisors, foremen, and production workers. More than a dozen of these courses were given to lamp plant foremen sometimes on a voluntary basis and at other times required. Supervisors were anxious to attend these meetings and expressed dissatisfaction if they were not invited to attend them. Lectures were conducted in the plant in a special room. College instructors went to the plants at specified times, usually toward the end of the work day 4:30 or 5 P.M., and conducted classes of instruction. Course subjects were confined to the lamp plant industry. Often these instruction periods extended into the employee's leisure time and yet the latter remained in his chair, reluctant to leave the group.

At the end of the war, the government withdrew support of this program and lamp plant management was not willing to assume the expense so the educational program was dropped.

Supervisors' interest in this education was shown particularly by the large group who voluntarily attended classes on their own time. It was interesting to note the change in attitude toward personnel functions after they attended lectures. They were eager to learn new methods, but they could not afford to take these courses if it meant a charge to them, buying books, or travelling a long distance after working hours to the college.

Three of the most popular courses required of
supervisors were J.I.T., J.M.T., and J.R.T.\(^1\) After foremen had attended these classes, they asked the personnel counselor to arrange for their employees to take the lectures during the work day. Once these courses were announced and the personnel selected to attend the first classes were chosen, there was keen competition among students trying to obtain high marks in homework assignments.

These educational experiments in industry during the war proved that the supervisor is willing to learn new methods and how to handle his workers. Foremen would gladly have attended psychology and sociology classes if they had been offered in the program because he was eager to do his job better.

Job training courses were very helpful in changing the attitude of supervision toward the personnel function from one of distrust to one of trust. Foremen sought the advice of the personnel counsellor on home study courses, books they should read, and even their children's school problems.

The future should provide more opportunity for supervisory education within industry. Firms should assume this obligation and open it to all who wish to partake of this form of study. Best results are obtained if instructors are men from outside the plant, preferably college teachers.

1. J.I.T. was the name given to Job Instruction Training. J.M.T. was Job Methods Training, and J.R.T. was Job Relations Training. All three were Government sponsored under the Training Within Industry program to increase production.
Liggett's Drug chain, Gillette Safety Razor Company, and Submarine Signal Company of Boston, Massachusetts, have continued this educational program for their supervisory personnel. College professors go to the plant at specified times twice a week and conduct classes. These companies have recognized that education is the solution to creating proper attitudes toward work and workers by their supervisors.

If the school system does not provide for development of supervisory personnel, then industry must do it.

In lamp manufacturing where women operators start work at sixteen or eighteen years of age, continue until thirty-five years of age when their physical ability to continue at such speed begins to diminish, and at forty years of age are told to turn to another field of endeavor, it is imperative that lamp plant management train these workers in another trade.

On June 23, 1947, Ewen Clague told the Northeastern Ohio Vocational Guidance Association that workers today should be taught two courses in order to obtain job security. He said:

"Millions of persons must expect two working lives—one beginning at eighteen and the other around forty-five. Men on heavy duty cannot stand the gaff after middle age. Many have to turn to "broom sweeping." Adult education must be expanded. Many a laborer could turn in later years to time keeping or semi clerical work if he were given a little schooling."

1. Cooper, Thomas. Northeastern University School of Business, 380 Huntington Avenue, Boston, Massachusetts, gives a "Conference Leadership" course at the plants named.

The lamp industry has the problem of placing long company service employees after they are forty-five years old. If the firm offered these supervisors and operators training in another type of work, the attitude of all employees would be improved. The majority of workers fear insecurity. Lamp workers realize that machine operation can not be done efficiently by older workers. While they are in the company employ, workers should be given the opportunity to provide for future change in employment and this training should be provided at company expense.
CHAPTER VI

EMPLOYEE SERVICES BY PERSONNEL DEPARTMENT

A. Hiring of Personnel

Selection and placement comprise two of the most important functions of the personnel manager in a lamp plant. Messrs. Clothier, Mathewson, and Scott\(^1\) explain why these two functions are so important in any firm:

"They have to do with the choice of workers who are to receive specific instruction and training along certain lines of work. Selection and placement, consequently, are factors in personnel administration which exercise their influence upon the worker from the time he becomes a part of the supply of available persons up through his association with the company as an employee, and on through the various stages of advancement and promotion until his final release from the organization."

In lamp plant hiring of personnel emphasis is still placed on the personal interview. During World War II, the Industrial Relations Department inaugurated a "vestibule school" where machine and bench operators were introduced to the work. Due to the fact that there was such a wide difference between conditions in the school and actual work in the factory, this venture was unsuccessful, but it was a step in the right direction.

Testing for machine operators, as well as clerical and technical help, would be very beneficial in selection and placement of lamp plant workers. So far as machine

operators are concerned, performance tests using the hands and timing the operator for speed are best measures of ability to become good operators. Although there is no specific test for these operators, it is suggested that Minnesota Rate of Manipulation Test, Detroit Mechanical Aptitudes Examination or Minnesota Spatial Relations Test be used to determine the operator's future success as a sealer. Before hiring any operators an eye examination should be given to the applicant by the nurse in the dispensary.

The ability to quickly carry out motions which involve attaching a wire coil to a glass stem by use of tweezers is very necessary in the bench operator. The Small Parts Dexterity Test is an excellent performance test for the bench operator in the lamp manufacturing plant. The Purdue Pegboard and the O'Connor Finger and Tweezer Dexterity Tests are also recommended. Mechanical ability tests for foremen are available.

Clerical, shorthand, typing, filing, and office machine tests for the selection of office personnel are used today by all large companies. Proctor and Gamble Distributing

1. Information about these may be found in The 1947 Catalog of the Test Division, The Psychological Corporation, 522 Fifth Avenue, New York 18, New York. pp.10-14.

2. Ibid p.15
Company rely entirely upon tests. The firm was among the first to combine testing procedure and the personal interview as a means of selecting workers. They now have tests for every type of job in their company.

Personality tests together with technical knowledge and intelligence tests are most important in the selection of plant personnel. If the interviewer has a good psychological background as well as a knowledge of testing procedure, a great deal can be accomplished in lowering the labor turnover rate. In the lamp plant during World War II, labor turnover went as high as ten percent a month. Herman Slavin’s article "Turnover Begins With Hiring" stresses the importance of careful hiring. The firms the author visited during the course of collecting data for this paper unanimously used tests in one way or another when they hired employees. Tests are coming into their own, but they should be handled with care. Much harm can be done by them if used by a person who has not the proper training and application

1. Personal interview on March 6, 1947 with Wilbert C. Hodgdon, Office Manager, Proctor and Gamble Distributing Company, 40 Central Street, Boston, Massachusetts.


of intelligent interpretation of test results. It is not recommended that test results be the determining factor in whether or not an individual is hired, but they should be used along with the interview. In the case of selecting machine operators, mechanics, and machine adjustment men tests are most important. There is a definite need for improvement in the selection and hiring of employees to work in the lamp manufacture.

B. Follow-up

Once the employee is hired, the employment counsellor's interest in her welfare does not stop. During the induction procedure, the employee has been introduced to the nurse, cafeteria facilities, and then turned over to the department supervisor for whom she will work. The latter acquaints her with department rules, shows her to her work area, and assigns a fellow employee to befriend the new worker. The monitor or training director teaches the new operator the mechanisms of her job.

During the first week, the new employee must be given extra attention. If fellow workers, monitors, foremen, nurse, and personnel counsellor do their part, the new employee will learn that she is working in a friendly and cooperative atmosphere. She should be encouraged to ask questions. The latter should always be answered. If the person she asks cannot answer these questions, the new employee should be directed to the person who does know the answers. Never allow a question to remain unanswered.
Too much emphasis cannot be placed on the importance of follow-up in creating and maintaining an efficient and happy working force in a lamp making plant. The personnel counsellor should make it a point to visit the new employee at least twice the first week, and once a week for three weeks thereafter. In this way, the personnel counsellor can become familiar with the employee's problems and learn to know her as a person. If the personnel counsellor has a good memory for names and can retain in her mind details in regard to employees' histories, she will find this an invaluable asset in her work relationship with employees. The Personnel Counsellor should make daily trips throughout the plant. These may be done quickly but always with an awareness of the need for greeting employees by name, and a few pauses here and there beside an operator to exchange a pleasantrty or two.

In follow-up work, care should be taken that no employee becomes known as a favorite with management. No one employee should be given special attention regularly. If this is done, the management will find it cannot obtain cooperation from other employees.

The personnel counsellor must make it a point never to become bosom friends with any one particular employee. She can be friendly and still maintain the necessary reserve to win and maintain the respect of the employees. If the personnel counsellor is to properly supervise the follow-up program of new employees, she must conduct herself in a manner which will
win their confidence.

Even after employees have acquired service with the company, follow-up should be continued. Except for about two dozen positions, all lamp plant jobs require the employee to stay at her machine, bench, or desk all her working time. A short visit by the personnel counsellor and her foreman from time to time relieves the employee of the need for social contact. The machine operator will work just as steady and fast while someone talks to her as she will when she is working without interruption.

In follow-up, care should be exercised by the counsellor to give the impression that the personnel counsellor is interested in the employee's welfare and well being and is not spying on the employee's work. Follow-up, if done right and by people with genuine interest in the betterment of the employee's welfare, can and will eliminate future grievances.

C. Counselling

Industry is becoming more aware of the need for counselling in its plants. A good and efficient working force is the aim of every manager. Good employee-employer relations can best be furthered through the personnel function of counselling. This art should not be directed toward the employee's work methods, but rather toward training the employee in the adoption of good mental hygiene habits. So
many employees have not had the advantage of school training along the lines of handling their own emotions, social, and family problems, that they welcome the guidance and direction of a company counsellor. Mr. Wood in his article "Employee Attitude and Their Relations to Morale" explains the importance employees' attitudes play upon their morale and company spirit.

The personnel counsellor is the morale builder. If counselling is done properly, it takes time and it takes the worker away from her job. Foremen are reluctant to release operators fifteen minutes or more from the machine so that they can seek personnel counsel. In this case the counsellor goes to the operators' work station. Harm has been done in the lamp making industry by the counsellor's failure to inform the employee's supervisor of the nature of the employee's visit to the personnel counsellor. Nothing confidential need be disclosed to the employee's supervisor but he should be told of the visit to the counsellor. The latter should never allow the employee's supervisor to learn this from another source. This only causes misunderstandings.

Mr. Shepherd in the article entitled "Advice, Guidance and Counselling" November 1946, Vol.25 No.5, pp.167.


"Advice is quick and ineffective. Guidance is the middle way. Counselling is time consuming."

Although counselling does take time, if it is done properly, it is the best way to handle employee problems. Time spent today to counsel and guide will settle the question. If not handled this way, the same problem will reappear in some other form or the same form later.

In the book "Worker's Emotion in Shop and Home" by Rexford Hersey, there is an excellent case study of an intelligent workman, forced to do unskilled and uncreative labor. Scientific selection and placement with a good follow-up on the part of the personnel counsellor would have prevented mental breakdown of the man reported in the case. It is in situations like this that the counsellor can do the most good. A worried and harassed worker who is mentally and emotionally disturbed about family problems, illness at home, or marriage difficulties is not an efficient or safety minded employee. The mere unloading their burdens and talking their situations over with a person outside the circle of family and friends often solves the employees' problems. Good counselling is an essential personnel function in a lamp plant.

D. Services.

The most important single factor in handling lamp plant employees is the need for the counsellor, nurse, and cafeteria supervisor to be "service minded". They must "Want to serve". No one should be employed in these capacities unless she or he is thoroughly investigated, tested, and found to have a genuine desire to help others. Many times a day these people have ample opportunity to perform small services for employees. The performance of these services takes little time, but it makes a big impression upon the worker, especially if the service is given with a smile.

The lamp plant has a credit union organization which is on a voluntary basis. Officers are nominated and elected by members. The employee applies to the personnel counsellor for a form authorizing the plant payroll department to deduct a specific sum weekly from the employee's wages. This is deposited to the employee's credit and goes on interest just as though it were on deposit in a savings bank. Depositors may withdraw any amount at any time, after giving notice to the personnel counsellor to notify credit union officers of their intentions. Employees may borrow money at a low interest rate from the credit union, and arrange their own methods for repayment. In the handling of these credit union inquiries, the personnel counsellor should be prompt, courteous, confidential, and willing. One of the personnel services is to know all the answers to credit union questions.
Knowledge of group insurance, Blue Cross, and Blue Shield rules and regulations is a requisite of the personnel counsellor. Employees want this information explained to them in terms they will understand easily. All correspondence in connection with these services should be handled by the personnel counsellor and copies of such filed with the employee's record.

Any pension plan that the lamp plant has is only as good as the company makes it. Detailed information is available to employees, but often they do not read it, or if they do, they do not absorb the full import of the benefits to be derived from their contributing to it. Here again it is the duty of the personnel counsellor to notify each individual employee when he or she becomes eligible for application, and to make certain that the worker fully understands the plan and the benefits accruing to the employee.

Recorded music playing while employees work is another service. This serves a two-fold purpose. Mr. McPeak in his article "Canning to Music" says:

"The racket is such that workers cannot talk with each other and so are isolated, but music seems to help them feel not so much alone".

Music in a lamp plant lessens the worker's sensitivity to the

noise of the machines, as well as furnishes an emotional outlet. Many workers will hum or sing along with the music. If records are carefully selected, and with emphasis upon fast tempo pieces, the worker will speed up her own physical movements to keep time with the rhythm of the recording. Records that have voice singing accompaniment are not recommended because the worker will invariably slow down to catch the words of the song above the noise of the machines. The personnel counsellor should select records with the thought in mind of increasing and maintaining speed in the worker. Workers have record preferences and they should be allowed to ask for playing of special recordings during the day, but no records should be in the plant that do not liven up the work rather than slow it down.

In the lamp plant where the author worked, there was ample opportunity to observe nursing techniques. On Mondays during the summer, after a hot weekend, many workers would visit the dispensary for sunburn lotion application. These girls had been instructed not to handle greasy or oily food during the day because it was not easily removable, and the tiniest amount left on their fingers when they handled the fine stems ruined the lamp. The nurse in this particular plant always tossed the sunburn ointment at the girl with the remark "put it on yourself." Usually this resulted in the employee finding herself too ill to continue working. She would ask
to be taken home. If the nurse had smiled and willingly offered to relieve the sunburn distress, these same operators would have remained on the job. It matters not how many services a company offers employees, if they are not offered in the proper manner and by service minded supervisors, they are no good. The personnel counsellor should constantly try to improve employee services already offered, keep well informed to changes in these services, and be ever ready to offer suggestions to management for the betterment of employee welfare.
CHAPTER VII
CRITICISM OF METHODS

A. Disregard for Human Element

In the lamp industry, the majority of women workers are hired when they are very young. The ideal age is eighteen years. It requires at least six months to train an operator to the stage where she is of value to the firm. From that time onward, her principal duty is to acquire skill, speed, and maximum performance per hour at her job. Once she attains maximum quality and quantity, then it is up to her to maintain it or her hourly rate is decreased.

As the worker approaches forty years of age, her speed starts to gradually diminish. If it goes down ten per cent of maximum production, her hourly rate is lowered. When she reaches forty-five or fifty years of age, her production might have decreased twenty-five per cent. When this happens, she is assigned to another job which requires less skill and which pays a lower rate than she had.

Throughout the lamp plant there is not enough regard given to the human element. Workers are not given sufficient personal attention and consideration. Often management views workers as production machines, to be used to the fullest during their useful lives, and to be replaced or discarded when their productive capacity diminishes.

Employees can not be placed on the same level with machines. Workers are sensitive, emotional, and must
be handled very differently from production tools. According to Stuart Chase:

"A machine is any non-living contrivance to extend or modify the power of the body or to refine the perception of the senses."

Management must realize the need for better understanding of the employees who operate the machines.

Every one wants personal recognition. The factory that becomes so large that its workers are mere numbers cannot expect the same good employer-employee relationship or the efficiency that the small factory obtains. Whenever possible, no supervisor should have more than a hundred employees directly under his supervision. Every one of his workers should be known to him by name. He should have a good understanding of their backgrounds so that he may learn their problems and help them. Once a day, at least, the supervisor should make it a point to go among his employees, speak to them by name, and chat with them. This is what is meant by instilling more of the "human element" in industry.

It is not enough for the immediate supervisor only to be seen among workers. It is important that the plant manager and personnel counsellor as well know the employees by name, be friendly, and treat everyone as a person. If a plant becomes too large, this is impossible. Management should be ready at all times to listen to employees' problems. Chase, Stuart. Men and Machines, Chapter I, pp.24.
blems, their suggestions, and give careful thought to the workers' attitudes and opinions. Often, just listening to them gives them personal satisfaction.

There is too much disregard for workers' utterances. When an employee evidences job dissatisfaction, and poor work results from this, the supervisor and personnel counsellor should confer with the employee and determine the cause of such dissatisfaction. Investigation may prove that the employee has been harboring an unfounded suspicion that is wholly erroneous, but to her it is real. This type of situation can be easily talked over and explained to the employee. Concern over employees' small problems builds morale.

The Personnel Counsellor should be always ready and willing to talk over transfer and promotion questions with employees. The employee's supervisor must be present during such conferences. When the employee seeks the personnel counsellor's advice on purely personal problems, the latter's supervisor should always be informed of the visit although it is not necessary to divulge the discussion.

B. Lack of Flexible Plan

Any plan that is set up for lamp plant supervision should be flexible enough to allow changes in it with alterations in business economic conditions. No factory today could operate without machine hours and material planned
and scheduled months in advance of actual production. Insofar as labor supply and labor policies are concerned, a plan or schedule is completely lacking.

Lamp machine and bench operators take a long time to train. If plans were drawn up along the same idea as machine and material use plans are, the personnel counsellor or interviewer would be in a position to select girls who would be best suited for lamp making. If the plan were laid six months before the operators were needed, there would be ample time for instructing and training these workers for the time when they would be required in production. The personnel counsellor and manager should work out a program which would result in skilled operators ready for machine or bench work when needed. When the worker is originally hired, it should be known as a result of interview and tests whether or not the applicant will make a good operator and is worth training. If the worker's personality and intelligence are better than the job requires, then the person should not be hired for that job.

Fair and honest evaluation of employees who request transfers from one department to another or from one job to another should be given. Such requests should always be noted in the employee's record and remembered by the supervisors who will consider the employee when vacancies occur in the job or department in which she is interested.
In the lamp plant where the author worked, the records revealed many instances which had occurred during the depression years 1930-1939 where a highly intelligent, high school secretarial trained worker had, in desperation, accepted a job as a machine operator. Her family needed the money; there was not much work available in Salem, and finally she went to work in the lamp plant. This happened after she graduated from high school in 1930 when she was eighteen. In 1943, lamp production was working two shifts a day. New machine operators were being hired. More clerical and secretarial assistance was needed in the office. The factory employee who went on the company payroll in 1930 was a skilled machine operator, earning top hourly rate for her job, but she still hated it and asked for a transfer to office work. The personnel counsellor consulted her supervisor, explained to him that she was willing to take a ten dollar a week reduction in wages if she could be transferred to an office job, but the supervisor would not hear of it and if he would, the plant superintendent would not allow it. New and untrained high school graduates were being hired daily, but a deaf ear was turned to the plea of the machine operator for a transfer to clerical work. In this case, management had the wrong attitude. Supervision was thinking only of production that would be lost during the training of a new
machine operator. It mattered not that the loyal employee with thirteen years seniority with the company was unhappy. When she terminated her services with the company, then she was asked to return with a promise of a transfer, but this was too late. The damage had been done.

A long range plan for handling situations that occur as a result of economic change in business conditions is needed. The skilled operator should have just as much opportunity for transfer or promotion as the newly hired individual, but that is not the case. Any plan to be workable must allow for change as times and conditions alter. The most obvious need in the lamp making industry is first for a plan to satisfy personnel needs, and than a revision of that plan from time to time to adjust it to economic change.

C. Inadequacy of Personnel Services

Some of the reason for the inadequacy of present personnel services offered to lamp plant employees is directly due to lack of proper educational background and experience on the part of the personnel department employees. When a company pursues a policy of promoting bench and machine operators from factory positions to assistant personnel supervisors and personnel supervisors, it cannot expect to have these people well versed and trained in personnel pro-
cedures, labor relations, workmen's compensation laws, federal and state employment regulations, applied psychology, and all the other working knowledges required to do good personnel counselling and supervision.

Machine and bench operators promoted to personnel positions have the disadvantage of having been confined to one or two jobs in the plant. They have not had the opportunity to work in other types of industry, and thereby learn methods and procedures used in personnel departments in other firms. They are unaware of the services firms other than their own company offer employees. They usually lack the initiative to inaugurate and establish new services. These same people find it difficult to obtain full cooperation from supervisors for whom they formerly worked.

One service which should be available in every lamp plant is the opportunity to consult the firm doctor on questions of health apart from those connected with their occupations. It is understood that this entails an extensive educational program for the workers in order to make it clear to them the intent of the company, and to enable them to use this service as it is intended. Mr. Little of S.S.Pierce Company, recently announced to the

1. April 25,1947 - Personal visit to Mr.Little, Personnel Director, S.S.Pierce Company, 133 Brookline Avenue, Boston, Massachusetts.
that company had hired a local physician to work one afternoon a week in the company dispensary. Employees were free to consult the doctor for occupational or non-occupational complaints. At first, employees were reluctant to take advantage of this service, but at the end of three months they were beginning to take all the doctor's afternoon time. Inquiry was made as to the legal complications involved if an employee took the wrong attitude toward the company after treatment for a non-occupational complaint. The answer was that the majority of employees were faithful, loyal, long service workers, and if one should assume the wrong attitude toward company medical care, S.S. Pierce Company was willing to take that chance and pay the expense.

Another service which a lamp plant personnel department should have is a training and educational program for preparing employees for another job within the firm or in another industry when their physical capacity to continue lamp making diminishes. Drs. Mabel A. Elliot and Frances E. Merrill remark in their book entitled "Social Disorganization":

"Adult education courses in practical subjects must be a future development if older men who lose positions because of technological changes are to find employment."

1. Elliot, Mabel A. PhD and Merrill, Frances E. PhD. Social Disorganization Chapter XIV, pp. 460.
This same rule applies to people who lose employment through physical and age limitations established within an industry. Eastman-Kodak Company of Rochester, New York, has done a notable work in this direction.

More information in regard to social, medical, and educational facilities open to employees outside the firm should be available to them. Bulletin Board announcements should be displayed in a prominent place where all employees can read them. They should be encouraged to seek further information about these services from the personnel counsellor.

There should be increased recreational facilities for employee enjoyment during rest periods and lunch hour. Such programs should be planned along the line of increasing the employees' mental and physical health. Some plants have company owned golf courses, tennis courts, bowling alleys, swimming pools, gymnasiums, sun bathing verandas, and many other forms of enjoyment for employees on their free time. Some firms charge a small fee and other firms donate recreational facilities. Whether free or not, well planned recreational facilities are a decided asset to any firm in health and morale building.

1. Ibid, pp.472.
CHAPTER VIII

RECOMMENDATIONS

A. Qualifications for Personnel Counsellor

Because all plants desire the best employer-employee relations possible, the person who is to direct personnel functions MUST be carefully chosen. Each industry differs in regard to standard practices and policies, but personnel and labor relations rules are basic to all industry. Therefore, the theoretical foundation for personnel supervision can be acquired in school.

However, college graduation is not sufficient to equip a person to enter a responsible personnel position. A good practical knowledge of economics, business administration, and the social sciences is needed by the personnel counsellor. She is called upon to hire, transfer, and promote factory or production workers as well as the technical and professional employees. To do this job well, she must know the personal qualifications, training, education, and past experience required for each and every position in the firm. Book theory will not furnish this essential. The counsellor must work in industry where she can see and study these jobs and the people who fill them.

The principles of scientific management can be applied to personnel supervision just as well as they are to production. The personality of the counsellor is very important in applying scientific management to her problems.
She must be a leader, able to direct and guide others, and capable of winning the respect and confidence of management and employees. Schools today are making excellent progress in training men and women to accept personnel managerial positions but schools have not done too much about "industrial internship," which is practice training while in school. School curricula differ from the days when Mary Gilson took her college course at Wellesley:

"No course in the social sciences were required. This also was in imitation of the men's colleges of the nineties. When one realized that many men went through college (and in some places still do) without the slightest exposure to any courses in economics, sociology, or political science, and then proceeded to such specialized fields as medicine, law, theology, business, and engineering, it is not surprising that their thinking on the crucial problems facing us is as confused as it is."

In spite of her lack of formal personnel education, Miss Gilson was to become one of the foremost women in New England in the personnel field. Today our colleges recognize the need for social science and business administration training for personnel work.

The author's experience in personnel work has led her to believe that a personnel manager should, in addition to college training, be exposed to either clinic outpatient or hospital social service work before the counsel-

1. Gilson, Mary B. What's Past Is Prologue, pp. 13
lor enters industrial personnel work. Actual work in a psychological or psychiatric clinic does a great deal toward training a person to evaluate people, attitudes, reasoning, and why they act as they do. If the student can learn tolerance, patience, and perseverance in a clinic, she has gained a lot that will be of value in handling workers in a lamp plant. In a hospital or clinic also she will learn first aid, occupational and non-occupational diseases, workmen's compensation rules, and good hygiene habits. She will work with nurse and doctors. This will aid her in managing a lamp plant dispensary and its personnel.

The personnel manager should not be under thirty years of age. A married person is preferred because both single and married employees will ask questions of a married person they would not ask of a single person. The person should be emotionally well balanced and adjusted herself, have a philosophy for life, and live a contented, happy social and family life outside work. All of these attributes are necessary in one who is to shape the lives of lamp plant workers.

A generous, unselfish, fair and honest person should be selected. She should be unprejudiced, adaptable to new and changing situations, and maintain an even disposition under trying circumstances.
B. Better Selection of Personnel

In Chapter VI specific recommendations were made for scientific selection and testing of applicants for factory positions. It was also suggested that testing be used when hiring for supervisory positions.

The principal requisite for supervisory personnel is technical and professional knowledge of the job requirements. This may be acquired in school, or through past industrial experience. These applicants must have this skill or knowledge before they are hired. Once hired, the lamp making industry can be learned.

In the case of the personnel director's qualifications, this has already been discussed in Section A of this chapter.

When a registered nurse is hired to oversee the dispensary, great care should be exercised. Past experience must include industrial nursing, not hospital or private duty nursing only. It is encouraging to learn that some colleges now have a degree granting curriculum for the nurse who wishes to enter the industrial nursing field. On a recent visit to Mr. Stanton at the Simplex Wire and Cable Company in Cambridge, it was learned that Simmons College,

1. Visit to Mr. Stanton, Employment Manager, Simplex Wire and Cable Company, Cambridge, Massachusetts.
Boston, Massachusetts, have arranged for students in their School of Nursing to affiliate for six weeks during their last college school year in the Dispensary of the Simplex Wire and Cable Company and work under the personal direction of Miss Katherine Dempsey, R. N. an outstanding leader in the field of industrial nursing.

Cooperation between colleges and industry will give manufacturing firms better qualified people to fill key positions. Personnel has an opportunity to actually work in the job and be exposed to its exacting demands before entering the industrial field. This works out much better than a pure laboratory-lecture program in college.

Within the lamp plant itself, there should be an orientation period of at least two months for the new supervisor. The latter should understand that this is a probationary period, as well as an orientation time. During this program, the manager should know definitely whether or not the new employee has the technical knowledge, personal adaptability required of the person who is to fill the position for which he has been hired and for which he is on probation.

A program of this type would eliminate a lot of expense and problems resulting from selection of wrong personnel. Often a firm discovers that they have made a bad choice only after the individual has worked for the firm a
month or so. At the end of a month or six weeks, it is usually apparent to the manager whether or not the new employee is supervisory material, whether or not he has the knowledge of the job he claims he has, and whether or not he should be retained. Therefore, it is recommended that selection of supervisory personnel be aimed at obtaining better equipped people who have specialized in their particular fields. It is also suggested that the lamp plant inaugurate an orientation-probation program for screening and eliminating supervisory employees before they are permanently placed on the lamp plant payroll.

In the selection of plant organizational personnel, it is presumed that job specifications would be redefined. In regard to the personnel counsellor and nurse it would be well to keep in mind the necessity for obtaining superior people. After they are hired and prove satisfactory, they should be well paid. Both should have good backgrounds in psychiatry. The importance of this factor is expressed by Laurence S. Jubie, M. D. in the Personnel Journal. Few business executives realize the importance of psychiatric training. This small personnel organization cannot function in a lamp plant where personal con-

tact is so necessary, unless both of these individuals have outstanding personalities, counselling experience, and can guide and direct others. In connection with the selection of the nurse, it is most important that personality tests be applied. It is suggested that information on this subject may be obtained by reading articles written by George K. Bennett and H. Phoebe Gordon. These two people have done a great deal in this field.

The personnel functions can be carried on very efficiently by adopting this type of organization. Not too much emphasis can be placed upon the importance of selection of the best trained and experienced people to carry out the functions.

C. Increased Social Welfare Service

Lamp plant workers enter the industry at such an early age (eighteen) that they have not had the advantage of learning how to handle their own personal, social, and medical problems. Once having started work, they do not have the time or energy to obtain this knowledge. If lamp making is to continue to employ these teen age girls, provision must be made for offering these services to the worker. The cost should be borne by management.

In the author's experience in a lamp plant, many instances occurred which proved the need for these services. Sometimes a death would occur in an employee's family and the employee would have no way of knowing how to go about collecting the insurance, social security benefits, or handle the estate. The problem is entirely outside the realm of work, but the employee needed information and advice.

In another case, a worker had a defective sister who should have been institutionalized but her parents objected. The employee sought advice as to proper commitment, legal proceedings, and details for handling the problem. From time to time a worker would need an operation. Information as to where, how, and cost of obtaining it were asked. All of these problems were personal ones, but the only person from whom the employee sought direction was the firm's personnel counsellor. Information was sought during working hours and on company time. Needless to say, management did not approve of this loss in production, and yet where could workers go to obtain necessary information? During their leisure time social welfare agencies are closed.

The future should provide some employer maintained social service department which would be available evenings. Employees could seek advice on their own time,
during leisure periods. The relief to employees would improve their physical and mental health and make more efficient lamp producers.

Often the employee does not wish to consult the personnel counsellor during working hours because she does not want other employees to know of her visit. A clinic conducted outside the plant for the purpose of social welfare service could be a private agency, but the agency should be reimbursed by lamp management. Such a clinic should be unprejudiced, confidential, and not responsible to management for direction.

The lamp industry is not alone in the need for more social welfare service for employees. It should be inaugurated in all industrial firms where workers are employed during the hours when private and public clinics are open. If firms do not provide these services evenings or Saturdays, they must expect workers to absent themselves to visit these clinics when the latter are open.

It is hoped that the time will come when business will realize this responsibility to its employees. Before this happens, employers must first be made aware of the need for them to have a real and genuine interest in their employee's social, personal, and economic problems. Worried workers do not give maximum production. Increased efficiency will result from employee relief from worry.
Why, then, should business not attempt to remedy workers' problems?

If management and labor would cooperate and plan for the best personnel policies for lamp workers, everyone in production, distribution, and consumption would share mutual benefits.
Hum-nlirev B. Neill in his book *Forty Eight Million Horses* describes lamp making as:

"Each process, to this observer, bordered on the miraculous. It seems inconceivable that man could design machines with metallic fingers so sensitive that they can grasp, twist, and insert wire coils (lamp filaments) that are so minute they have to be inspected under 50-times magnification! With an ordinary pocket magnifying glass one can just make out that the wire connecting the terminals within the bulb is in reality a double coil—a coil finer than a human hair coiled once and then recoiled. The finished double coil (or "coiled coil," as it is termed in the shop) is approximately 1 1/16" long. Pulled out to unravel, the top coiling stretches the coil to roughly four inches, and when completely drawn out to the original fine strand of wire, it measures over 20 inches. Yet, this infinitesimally fine coiling work is done on a machine at extraordinary speed.

And that is only the beginning. Equally fine wires are imbeded in a glass terminal and then "hooked" to catch the coiled coil, while three other small wires are inserted in a glass support to hold the filament and leading-in wires in place. Around and around goes the machine, dumping out the complete inside assemblies of the lamp and transferring them to another machine which seals the filament "mounts" in the bulb. As the bulb travels around on this second machine, the air is withdrawn from each bulb and an exact proportion of gas is admitted. A third machine puts on the screw cap, or lamp base, solders all connections, and lights the filament for the first time."

At Sylvania Electric Products Incorporated lamp plant in Salem, Massachusetts, where the author worked as assistant personnel supervisor and personnel supervisor there were only three "automount" stem making and assembling machines. These machines only made 40 and 60 watt lamps. All other stems were hand wound. (See Figure 2, page 90)
PLANT  Salem Lamp
JOB TITLE  Wind 50 Watt R.S. Coils
DEPARTMENT  Sealex Stem
DATE  10-22-43  EVALUATION  355
JOB DESCRIPTION

1. Pick stem off conveyor (EH) and inspect for missing supports, cracked glass, proper type of lead wires and spacing.
2. Pick up coil with tweezers (BH) and position to clamp.
3. Clamp coil to first lead wire (foot operated clamp).
4. Take other end of coil with tweezers and wind through supports and clamp coil end to second lead wire.
5. Close supports on most types by pinching with tweezers.
6. Cause and adjust lead wire spacing.
7. Place in tray.

Stamp ticket identification for full trays and place in buggies behind operator. Get empty trays from same buggies.

8-28-44 Also 36\*  A19, St. R.R., Bdl, 50 A19 HV, 50 A19 HV R.S.
or is required to wind a limited number of other types.

INDIVIDUAL QUALIFICATIONS

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<th>Grade</th>
<th>High</th>
<th>Tech.</th>
<th>Univ.</th>
<th>Clean X</th>
<th>Dust</th>
<th>Inside X</th>
<th>Bench</th>
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<td>No Factor</td>
<td>Special</td>
<td>Prior Exp. Reqd</td>
<td>Possible Promotion</td>
<td>Utility Operator</td>
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Figure 2. Job Evaluation of a Stem Winder for 50 watt lamps. Description of hand work required when "automount" not used. From Sylvania Electric Products Incorporated lamp plant.
**Gas**

Used in most lamps of 40 watts and above, prevents rapid evaporation of the filament, permitting higher temperatures which result in higher efficiencies. Usual gas is a mixture of nitrogen and argon. Some lamps for special services may use krypton or hydrogen.

**Lead-in Wires**

Conduct the current to and from the filament; copper used from base to stem press and nickel from stem press to filament.

**Stem Press**

The glass and lead-in wires have an airtight seal here. To have substantially the same coefficient of expansion as the glass, the lead-in wire at this point is a combination of a nickel-iron alloy core and a copper sleeve (Dumet wire).

**Exhaust Tube**

It is through this tube, projecting beyond the bulb during manufacture, that the air is exhausted and the bulb filled with inert gases. The tube is then sealed off short enough for the base to fit over it.

**Support Wires**

Molybdenum wires hold the filament in place; minimum number desirable to reduce heat losses.

**Button**

The glass is softened during assembly and the support wires stuck in it. It is supported by the button rod.

**Mica Disc**

Reduces circulation of hot gases into neck of bulb protecting stem press, stem and socket from excessive temperatures. Used in higher wattage general service lamps and in other types when needed.

**Fuse**

Designed to open the circuit if the filament arcs. By reducing sputtering of the metal, cracking of the bulb is prevented. It also protects the circuit and prevents blowing of the line fuses.

Figure 3. The Filament Lamp. Nitrogen and argon gas are sealed in over open fire. Enlarged photostat copy taken from Mazda Lamps pamphlet, page 8. Published by General Electric Company, Nela Park Engineering Department, Cleveland, Ohio.
APPENDIX C

The sealing machine which finishes the lamp is a separate machine from the stem making machine. In fact, a lamp department floor is divided into the "stem" and the "finish" sides of the department. The "stem" machines are not so hot and uncomfortable for the operators.

The sealing machine is a large machine electrically operated but which is supplied with nitrogen and argon tubes which feed this gas mixture into the bulb before it is sealed over an open gas flame. The machine has two revolving cylinders. The lower cylinder is equipped with three dozen open gas jets which give off a bluish red flame. This cylinder revolves around with another cylinder revolving above it. The upper cylinder has small holders for the stems and over these are placed the empty glass bulbs. As they go around simultaneously, the gas flame melts the glass and closes it tightly around the protruding bottom wires. The bulb is removed by the operator as it comes around to her again and placed on a holder which cuts off the excess glass stem.

With so many open gas jets constantly aflame before the sealer, her position becomes an exceedingly uncomfortable one. The heat is very bad. This condition is one of the reasons why it is so difficult to obtain girls to train for sealers. (See Figure 4, page 93)
PLANT: Salem Lamp

JOB TITLE: Operate Sealer machine -- No transfer

DEPARTMENT: Sealer Finishing

PRIMARY FUNCTION: Operate Sealer machine - No transfer

OTHER FUNCTIONS:

REPORTS TO: Foreman

TOOLS OR EQUIPMENT USED:
File, tube extractor, exhaust rubber plunger, lamp tongs, gloves, apron

JOB DESCRIPTION:
1. Check nitro end argon gas clamp to see that gas line is open (book of machine). Take one bulb and check with mount ticket. Must be correct for type of mount used and correct appearance. If working from mount conveyor, check with conveyor sign board and mount machine operator. Load bulb tubes inserts and removes port plugs at beginning and end of each day.

2. Takes mount off try or conveyor, checks for cracks, poor stem press, loose filaments and general appearance visually. Places in mount rod pin making sure that both lead wires are inside of pin to prevent burning off. Continues to load mounts and bulbs with right hand.

3. Moves sealed lamp with left hand from sealing-in head to exhaust head. Inspects visually for cracks and poor mould.

4. Checks tip and lamp as lamps are tipped over into conveyor basket. Care required to insure that mount is not bumped when locating head.

5. Turns on light to signal for supplies and machine disorders.

6. Taps on pedal to move lamps in exhaust head when rubber has less in it or lamp not properly sealed.

7. Checks lamps for etching after inserting in exhaust rubber

8. Stops machine and turns off fires in case of trouble or emergency.

9. Put defective lamps, stem and bulbs into shrinkage can for reorder.

INDIVIDUAL QUALIFICATIONS
Male \* Female
Height \* No Factor
Weight \* No Factor
Eyesight \* Normal
Dexterity \* Special

EDUCATION
Grade \* High Tech
Possible Promotion

ACADEMIC
Clean \* Dust
Dirty \* Hot
Greasy \* Cold
Fumes \* Wet
Acid \* Dark

DEMOGRAPHIC
Inside \* Bench
Outside \* Mach
Sit \* Floor
Stand \* Noise
Stoop \* Monotonous

OCCUPATIONAL
Light \* Medium
Described by G. V. Miller
Rated by S. W. Lynch
Interviewed by G. O'Brien O.K. By

Figure 4. Job Evaluation of a Sealer on a 100 watt machine.
Description of hand work and finger dexterity required.
From Sylvania Electric Products Incorporated lamp plant.
APPENDIX D

For more than two years the author was first assistant personnel supervisor and then personnel supervisor at Sylvania Electric Products Incorporated lamp plant in Salem, Massachusetts. This length of service extended from the spring of 1943 to the fall of 1945 after World War II ended.

During these abnormal times, it was very difficult to obtain machine operators of any type but it was almost impossible to obtain girls to train for sealing in operators. In the course of her work she had over a hundred requisitions for sealers during the entire period. This meant interviewing several hundred girls to fill these positions.

Of the twenty sealing in operators employed by the firm before the war, seven were Polish girls and five were Italian girls. None of the twelve had worked at sealing less than five years. Not one of them would accept a transfer to another type of work. They all liked sealing.

As a result of interviewing all types and kinds of applicants for work, the author concluded that these two racial groups were the best source of supply for sealers. This might not be true in other lamp locations but it was true in Salem and proved itself over the two year period.
Figure 5. Simplified Organization Chart.

Enlarged photostatic copy of plant organization taken from Welcome Sylvania, a handbook which is presented to every newly hired employee.
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