

EVALUATION OF INDUSTRIAL
TRAINING PROGRAMS

by

William Eugene Hunt

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INTRODUCTION

Prior to the industrial revolution, American industry was not greatly concerned with training programs, because the United States was primarily an agrarian nation. Today, because of the industrial revolution and the complexity of business and industry, management has realized the necessity for having training programs. Such programs as will develop employees capable of keeping up with the technological changes which are necessary if the United States is to keep its present-day position of industrial leadership in the world. More and more today's employees are becoming a group of competing specialists in a world of specialization. Because of the high degree of specialization, it is necessary that the employee be trained to the best of his capabilities, if he and the company are to maintain their position in an ever-expanding economy. Management can expect to progress and advance in such an economy only if it provides a well-planned system of training which will improve the skills, attitudes, and knowledge of the employee.

The purpose of this study is to demonstrate that the goals of teamwork and production in business and industry can best be achieved by a training program which is designed to improve the skills and attitudes of both employees and managers, and that well-organized training will increase production and reduce operating costs. This study is also

designed to determine the desirability or undesirability of industrial training programs, and to furnish information which may be useful to those persons who are engaged in industrial training programs or to those persons who wish to study in this particular area.

The need for training programs is very evident. Most industries do not expect to hire already trained employees. Each company may have to train its employees to do specific jobs which may be related only to its particular business or industry. Technological changes in the methods of performing mass production work have brought about the need for greater specialization which can be achieved efficiently only if there is a well-planned training program. Also, it has been proven that an organized training program can materially increase production by improving employee morale. Such programs will reduce training cost, equipment breakage, absenteeism, labor turnover, and various other undesirable activities. Training programs are a very effective means for attracting the type of personnel needed to fill future executive positions, the type of executive that will insure continuing growth and prosperity for the company.

The first chapter of this study is devoted to the historical background of training programs, beginning with the apprenticeship of the Middle Ages and concluding with the modern-day concept which management has toward training its employees. The second chapter will discuss the position

of training in the organizational structure and whose responsibility it is to see that the employee is properly trained. The third chapter will be devoted to the discussion of the several different types of training programs. The fourth, fifth, and sixth chapters will include the training programs of several selected industries located in the southwestern area of Virginia.

Several procedures have been used in conducting this study. A careful study has been made of the material already published and available on the subject of training programs. The case method has been used in the study of several selected industries. Also, personal interviews have been made with management and training officials to determine their attitudes toward training programs.

The final chapter is devoted to an evaluation and conclusion as to the justification of training programs. Are they worthwhile? Will management profit by setting up a training program which will provide a systematic method for training new workers, for training workers who are already on the job, and for training executives who will be expected to guide the destinies of their organizations in future years?

CHAPTER I

HISTORICAL BACKGROUND

Since the beginning of time, man has endeavored to improve himself in whatever activity he was performing. Some form of training has always existed. Education is the process of learning, and learning itself is a form of training. For the purpose of this study we will make a distinction between training and education; education is the acquiring of that type of knowledge which will make the worker a well-rounded individual, and training is that knowledge which is required to do a specific type of job. Training itself is an orderly arrangement of a sequence of activities which has as its result a definite objective. Possibly one of the earliest forms of training involved learning to chip a piece of flint stone into a more useful shape, such as a spearhead or an axe. Since there are no records of any specific types of training in this earliest period, this study will be devoted both to the early concept of apprenticeship training, developed in the medieval period, and to the modern concept of specialized training programs.

EARLY CONCEPT

During the Middle Ages there developed a training program known as the apprenticeship. Developed in the European guilds and regulated by common law, "It forbade any person to practice a recognized craft or occupation in

England who had not served at least seven years apprenticeship."¹ While the young apprentice was learning his trade, he would usually live in the same house with the master craftsman. In many of these earlier cases the apprentice would receive no money for his work and sometimes he would have to pay for the training which he received. In other cases he would get board, lodging, and a small allowance which was determined by a committee consisting usually of the Justice of the Peace, the Sheriff, and the Mayor of the area in which the apprentice worked. It was only through this type of training that the young man could become a skilled tradesman or craftsman. The end result of this training was that the young man would eventually set up his own shop. Because of the demand and artistic ability required, a rigid examination was given at the end of the training period to determine whether the apprentice should have further training or should he be allowed to set up his own shop. The type of work the apprentice did was usually complicated, skilled, and therefore interesting and challenging. He usually started and completed a unit of work and took personal pride in his creation. Apprenticeship training was the dominant type of training organization of the medieval period.

1. Dale Yoder, Ed., Prentice-Hall Labor Course (New York, Prentice-Hall, Inc., 1956), p. 1012.

INDUSTRIAL REVOLUTION

With the introduction of power-driven machinery, the guild system gradually faded away. This labor-saving machinery brought about a surplus of labor which was to become one of the major problems of this period. Labor was abused and many children were employed long hours as factory helpers. Because of the surplus of labor, people were willing to work long hours for nothing more than subsistence wages. Slowly the factory system emerged and brought about highly specialized occupations in many of the earlier factories, most of which were primarily engaged in the making of textiles. The manufacturing industry did not develop to any great extent until the necessity was brought about because of the War between the States. The methods of training during these early periods were very crude because management was not too concerned about a training program. This was the period of survival of the fittest. Those persons that were able to learn rapidly could be reasonably sure of employment. Those who did not have the ability to learn rapidly found themselves being replaced by more able workers. What little training management did have was strictly on-the-job training. The new employee was simply put beside an experienced worker and learned the best way he knew how with what little help he could get from his associate worker. This practice brought about many undesirable work methods and practices. Manage-

ment did not consider this a problem because there was sufficient labor available to replace those who were not doing a good job. As technology improved, factories expanded until they took on the characteristics of giant corporations such as General Motors, Ford Motor Company, and General Electric. With this expansion came the job specialization and the introduction of scientific management. The pride of individual workmanship had been lost. The worker became specialized in doing only a small part in a long series of operations which resulted in the construction of a unit of production.

TRAINING WITHIN INDUSTRY

Because of the great need for increased production during the Second World War (1941-1945), the National Defense Advisory Commission established the Training Within Industry Program. Its primary purpose was to get out increased and improved production by improving the following phases of in-plant training:

- "1. UPGRADING of all classes of personnel as their experience and abilities warrant, through planned job progression, job rotation, and extensive supplementary instruction both on and off the job. Each plant should take stock of the talent and experience of its own personnel before employing new men and women.
2. Development of PRODUCTION SPECIALISTS through extensive instruction on the job in basic operations.
3. Development of all-around SKILLED MECHANICS through trade apprenticeship, in accordance with

Federal standards, separate from production worker training; for the purpose of developing a predetermined, limited number of all-around journeyman mechanics.

4. Development of SUPERVISORS through careful selection, assignment of supervisory duties of increasing responsibility, and provision for related organized help through discussions and conferences, under both plant and outside auspices, dealing with methods of instruction, methods of developing better ways of doing a job, methods of improving working relationships, and knowledge of responsibilities."²

Training Within Industry developed four specific programs which have been very helpful tools for modern management in developing their own individual training programs, and which have become guides for better training. These four programs are: (1) Job Instruction, (2) Job Methods, (3) Job Relations, and (4) Program Development.³

1. Job Instruction. This training gives the supervisor practice in how to instruct men on new jobs. The systematic steps in Job Instruction are:

A. How to get ready to instruct.

- a. Have a time table--decide how much skill you expect him to have, by what time.

2. U. S. War Manpower Commission, Bureau of Training, Training Within Industry Service, More Production Through Skilled Supervision, The Training Within Industry Program (Washington, D. C.: U. S. Government Printing Office, August, 1943), p. 3.

3. U. S. War Manpower Commission, Bureau of Training, Training Within Industry Service, The Training Within Industry Report (Washington, D. C.: U. S. Government Printing Office, 1945), pp. 33-34; pp. 37-38; pp. 40-41; pp. 45-46.

- b. Break down the job--list important steps, pick out key points.
- c. Have everything ready--the right equipment, materials, and supplies.
- d. Have the work place properly arranged, just as the worker will be expected to keep it.

B. How to instruct.

- a. Prepare the worker.
 - 1. Put him at ease.
 - 2. State the job and find out what he already knows about it.
 - 3. Get him interested in learning job.
 - 4. Place in correct position.
- b. Present the operation.
 - 1. Tell, show, and illustrate one important step at a time.
 - 2. Stress each key point.
 - 3. Instruct clearly, completely, and patiently, but no more than he can master.
- c. Try out performance.
 - 1. Have him do the job--correct errors.
 - 2. Have him explain each key point to you as he does the job again.
 - 3. Make sure he understands.
 - 4. Continue until you know he knows.

- d. Follow up.
 - 1. Put him on his own.
 - 2. Designate to whom he goes for help.
 - 3. Check frequently.
 - 4. Encourage questions.
 - 5. Taper off extra coaching and close follow-up.
(If worker hasn't learned, the instructor hasn't taught.)

2. Job Methods. This type of training shows the supervisor how to simplify and improve methods of doing a job. It develops a critical attitude toward their own work. It makes them think in terms of improvement. How can improvement be made in methods of operations that will increase the quantity and quality of products in less time, by making best use of manpower, machines, and materials now available? Training Within Industry has developed a procedure which has been very helpful in promoting better methods. The procedure is as follows:

- A. Break down the job.
 - a. List all details of the job exactly as done by the present method.
 - b. Be sure details include all:
 - 1. Materials handling.
 - 2. Machine work.
 - 3. Hand work.

B. Question every detail.

a. Use these steps of questioning.

1. Why is it necessary?
2. What is its purpose?
3. Where should it be done?
4. When should it be done?
5. Who is best qualified to do it?
6. How is the best way to do it?

b. Also question the:

Materials, Machines, Equipment, Tools, Product
Design, Layout, Work-place, Safety, Housekeeping.

C. Develop the new method.

a. Eliminate unnecessary details.

b. Combine details when practical.

c. Rearrange for better sequence.

d. Simplify all necessary details.

1. Make the work easier and safer.
2. Pre-position materials, tools and equipment at the best places in the proper work areas.
3. Use gravity-feed hoppers and drop-delivery chutes.
4. Let both hands do useful work.
5. Use jigs and fixtures instead of hands, for holding work.

e. Work out your idea with others.

f. Write up your proposed new method.

- D. Apply the new method.
 - a. Sell the proposal to management.
 - b. Sell the new method to the operators.
 - c. Get final approval of all concerned on safety, quality, quantity, and cost.
 - d. Put the new method to work. Use it until a better way is developed.
 - e. Give credit where credit is due.

3. Job Relations. This training program was developed for the purpose of providing supervisors with practice in how to promote teamwork. Management has recognized this as being one of the important functions of training. It is a program which will provide a good foundation for good relations. Although this program will not solve problems, it will very often prevent them. The four logical steps in formulating a job relations program after the objective has been determined are:

- A. Get the facts.
 - a. Review the record.
 - b. Find out what rules and plant customs apply.
 - c. Talk with individuals concerned.
 - d. Get opinions and feelings.
(Be sure you have the whole story.)
- B. Weigh and decide.
 - a. Fit the facts together.
 - b. Consider their bearing on each other.

- c. What possible actions are there?
- d. Check practices and policies.
- e. Consider objectives and effect on individuals, groups, and production.
(Don't jump to conclusions.)

C. Take action.

- a. Are you going to handle this yourself?
- b. Do you need help in handling?
- c. Should you refer this to your supervisor?
- d. Watch the timing of your action.
(Don't pass the buck.)

D. Check results.

- a. How soon will you follow up?
- b. How often will you need to check?
- c. Watch for changes in output, attitude, and relationships.
(Did your action help production?)

4. Program Development. How do you develop a training program which will meet the specific needs of a production problem? This can be accomplished by training those people who are in charge of training (such as staff people and line supervisors) in better development of the now existing programs. The supervisors and training personnel should be given coaching in a method of planning, operating, and improving plant-wide training programs. The four steps in

program development are:

A. Spot a production problem.

- a. Get supervisors and workers to tell about current problems.
- b. Uncover problems by reviewing records-- performance, cost, turnover, rejects, accidents.
- c. Anticipate problems resulting from change-- organization, production, or policies.
- d. Analyze this evidence.
- e. Identify training need.
(Tackle one specific need at a time.)

B. Develop a specific plan.

- a. Who will be trained?
- b. What content? Who can help determine?
- c. How can it be done best?
- d. Who should do the training?
- e. When should it be done--how long will it take?
- f. Where should it be done?

(Watch for relation of this plan to other current training plans and programs.)

C. Get plan into action.

- a. Stress to management evidence of need--use facts and figures.
- b. Present the expected results.
- c. Discuss plan--content and methods.

- d. Submit timetable for plan.
- e. Train those who do the training.
- f. Secure understanding and acceptance by those affected.
- g. Fix responsibility for continuing use.
(Be sure management participates.)

D. Check results.

- a. How can results be checked? Against what evidence?
- b. What results will be looked for?
- c. Is management being informed--how?
- d. Is the plan being followed?
- e. How is it being kept in use?
- f. Are any changes necessary?
(Is the plan helping production?)

The Training Within Industry program accomplished the biggest industrial teaching job in history. "By September, 1945, when it was finally liquidated, its four national directors had trained 22 field representatives who had trained 200 T.W.I. Institute Conductors who had trained 23,000 trainers who had trained 1,750,000 supervisors in 16,500 plants and agencies, who in turn trained some 10 million warworkers."⁴

4. William M. Fox, ed., Readings in Personnel Management from Fortune (New York: Henry Holt and Company, 1957), p. 43.

MODERN CONCEPT

Management at present recognizes that its greatest asset is its employees and that the greatest potential for advancement lies in the training and development of its employees. Managements have realized the importance of having good labor relations and have initiated programs that will improve industrial teamwork. They have also realized that training is a very costly operation no matter how it is done, but that the cost can be minimized if a planned procedure for training is used. Top managements have followed a trend of specializing in the field of industrial training. In most cases they have delegated the responsibility for training to specialized assistants who have been trained in development and initiation of improved training methods and procedures. Many companies have formal training programs which vary from several weeks to two or three years. Those companies which have developed a well-planned training program invariably report that it pays. Management is convinced that industrial education is a sound and profitable investment. Real competence benefits both the employer and the employee.

Training is a never-ending process and most companies try to develop a training program which will "...build continuously and systematically to the maximum degree and in the proper proportion that knowledge and those skills and attitudes which contribute to the welfare of the company

and the employee."⁵ Also it has been realized that training is an indispensable function of management and that the justification for having a planned program is that sooner or later the employee will have to be trained. Training a well-rounded employee involves so many activities that management has come to the conclusion that "It must be viewed as an integral part of the whole management program, with all its many activities functionally interrelated."⁶

5. Earl G. Planty, William S. McCord, and Carlos A. Efferson, Training Employees and Managers (New York: The Ronald Press Company, 1948), p. 25.

6. Walter Dill Scott, Robert C. Clothier, and William R. Spriegel, Personnel Management (New York: McGraw-Hill Book Company, Inc., 1949), p. 297.

CHAPTER II

TRAINING AS A FUNCTION OF MANAGEMENT

Modern management realizes that the job of managing employees is probably management's greatest responsibility. It is also realized that the greatest chance for profits is in carefully selecting the right people and developing them into productive and enthusiastic working teams. Management no longer has the choice of having or not having a training program. The present-day company has the problem of, "What kind of training program best suits our needs?" Management's main problem is designing and initiating a training program which will help develop the employee's knowledge and skills and make him feel that he is part of a working team. The success of such a program depends on the maintenance of a high level of employee morale. Along with high morale and loyalty, management must produce satisfactory feelings of status and security. A company must also recognize its ethical and moral obligations to employees. Because of the size of many of our present-day corporations, this is an impossible task for one person. In recent years management has been relying more and more on a staff of specialists who are generally located in the personnel or industrial relations department. These specialists have the responsibility of developing appropriate policies and effective practices for

implementing good working relationships. Management has delegated its responsibility for training to this department which will advise and assist the supervisors in their training work and in many cases do much of it for them.

POSITION OF TRAINING

The actual training of new employees is usually done by the supervisor of the department where they will be assigned to work. The staff department will assist the line executive in developing a systematic method of training and in many cases will actually give the induction training required. "The LINE organization has the responsibility for making continuing use of the knowledge and skills acquired through training as a regular part of the operating job. The STAFF provides plans and technical 'know how', and does some things FOR but usually works THROUGH the line organization."¹ Training usually follows the line of authority with the ultimate responsibility being that of top management. It is management's legal duty by common law to provide ".....adequate instruction for inexperienced workers."² The supervisors may be able to delegate their

1. U. S. War Manpower Commission, Bureau of Training, Training Within Industry Service, The Training Within Industry Report (Washington, D. C.: U. S. Government Printing Office, 1945), p. 46.

2. Dale Yoder, ed., Prentice-Hall Labor Course (New York: Prentice-Hall Inc., 1956), p. 9012.

training responsibility to one of the more experienced workers within the department where the new employee will be working.

MAJOR OBJECTIVES

The main objective or purpose of a training course normally is to increase productivity with its attending increase in profits. Employees have to be trained, hence training costs are inescapable. Management can only justify these costs by the results, which represent profits. Some types of training are measurable, others are not. Job-training can be measured as increased efficiency with less training time involved. Attitude-training can be measured to a certain extent, but the full value of this type of training cannot be definitely known. It would be like trying to accurately predict future weather conditions. Another major objective is to provide training that will improve labor-management relations. Companies can operate in a competitive industry only if everyone is working as one large cooperative working team. Cooperation and understanding are necessary for an efficient plant operation. Also, management wants to provide adequate training for present-day needs and to provide training which will produce capable personnel who will be able to fill future management positions.

SUBSIDIARY OBJECTIVES

By providing the necessary training, management expects to see tangible results which will justify the cost of training. Management is convinced that there is always a one best way to do a particular job. Training Directors continuously try to improve methods and techniques for doing these jobs and pass this information on to those in the organization who are in need of better instruction methods. Some of the tangible results or objectives which management expects to receive from better training methods and instructions are:³

1. Reduction of waste and spoilage. Waste and spoilage can be reduced by teaching better work habits and improving the attitude of the worker. Lack of understanding of the need for conservation will lead to improper work methods, carelessness, and extravagance in the use of materials.

2. Methods and procedure improvement. Good methods and procedures will stimulate an appreciation and interest in the employee's job. Employee suggestions are very helpful in this particular area.

3. Reduction of absenteeism. Poor supervision may make the employee feel insecure on his job. He may not have had

3. Earl G. Planty, William S. McCord, and Carlos A. Efferson, Training Employees and Managers (New York: The Ronald Press Company, 1948), pp. 7-13.

adequate training and may not, therefore, have adjusted himself to his work.

4. Labor turnover reduction. Usually the greatest rate of turnover occurs during the first few weeks of work. Lack of training may cause a workman to get discouraged and quit.

5. Reduction of learning time. A carefully planned procedure for training will not only develop a more efficient worker but simultaneously reduce the time required to learn.

6. Reduction of supervisory burden. A well-trained employee needs less supervision. If the training program has done an efficient job the employee should be trained sufficiently to use his own independent judgement and initiative.

7. Reduction of overtime cost. Training the supervisor to control his scheduling of work will cut down on overtime cost. Also, better trained workers will increase plant efficiency, which in turn cuts down the overtime cost.

8. Reduction of machine maintenance cost. Better instruction in handling equipment will save cost of maintenance, repairs, and replacement.

9. Reduction of grievances. Training can remove many of the causes of grievances. Better supervisory training will help the foreman to settle grievances before they go farther than the department, thereby saving time in grievance settlements.

10. Improvement of quality. Most companies depend upon the quality of the service or product which they sell. Encouraging employee participation actively in quality improvement will increase company sales, making possible the payment of larger dividends.

11. Reduction of accident rate. Special safety courses will reduce the accident rate. If there is danger in operating certain machinery, the employee must be made aware of this fact because it is management's legal duty by common law to provide ".....a safe place in which to work....."⁴

12. Encouragement of upgrading. Because of plant expansion, retirements, deaths, promotions, resignations, and transfers there are many vacancies that must be filled with competent employees. If programs are designed to train employees within the company for these positions, it will save time and money, and improve morale.

13. Improvement of communication. Planned meetings during which plans, grievances, suggestions, and items of general concern are discussed by staff and line personnel will improve the flow of communication from the upper levels of management to the lower levels and vice-versa.

4. Dale Yoder, ed., Prentice-Hall Labor Course (New York: Prentice-Hall Inc., 1956), p. 9012.

14. Improve employee versatility. Developing versatile employees who can do several different jobs provides a flexible working force which can fill positions in case of absences, vacations, resignations, and sudden increase or decrease in the demands for a particular type of operation. This will prevent loss of time and production.

15. Improvement of morale. Good training improves morale. Employees with high morale are better workers. They take great pride in their work and try to do a better job. They are more responsive to instruction and are more likely to make suggestions for improving methods of doing their work.

A planned and orderly method of training will provide employees with adequate information so they may have a greater appreciation of their work. It must be understood that any type of training is designed to meet a specific need and since these needs may not be the same for all organizations, various types of training programs will be necessary. Most organizations have some form of training, but there is great variation as to quality and results. If increasing productivity is to continue, a search for better and more effective training methods is always in order.

CHAPTER III

TYPES OF TRAINING PROGRAMS

Training programs are designed to meet the specific needs of individual plants or organizations. Because of the wide variation in the structure of these different plants and organizations, it is unlikely that there is one best method of training which would be applicable to all types of businesses. This chapter will be devoted to the discussion of several types of training which include: induction, rank and file or operative, foreman or supervisor, management development, and general education.

INDUCTION TRAINING

The induction training program is designed to help the new employee to adjust himself to his new job. Because of the high degree of turnover during the first few weeks of employment, this type of training has the objective of seeing that the new employee gets off to a good start with the company. The main purpose of this training is to emphasize to the employee that he will be part of a team and to try to give him a sense of belonging. In the larger organizations a handbook, which tries to answer some of the questions most commonly asked on such subjects as working conditions, vacations, insurance and similar matters, is usually given to new employees. Usually one of the requirements of employment is that the employee read this handbook

thoroughly and sign a statement to the effect that he has read it. Other questions not answered in this book can be answered either by the personnel department or by the foreman in the department where the new employee will be working. The responsibility for induction training is a line function but frequently in larger organizations it is a co-ordinated responsibility of both the personnel department and line personnel within the department where the new employee will be working. This is partly because induction is closely related to recruitment and selection, functions which have been assigned to a department which is specialized in these matters.

Because of the wide variations from company to company there is no one best method for induction training that would be applicable to all. Listed below are some of the more important topics that should be included or at least taken into consideration in conducting an induction training program:

1. A knowledge of company and department rules and regulations.
2. A knowledge and appreciation of and a desire to use company services.
3. A knowledge of what the company is, what the company does, and the importance of the company's products.
4. A knowledge and feeling of the place and importance of the individual worker in the company.
5. A feeling of being at home, a friendly feeling toward the boss and fellow-workers.

6. A feeling that the worker can expect fair and impartial treatment.
7. A feeling of confidence and pride in the company.
8. A feeling of freedom to ask questions, to criticize; the elimination of suppressed antagonisms and hostility toward the company.
9. An attitude of personal responsibility for the individual job, product, and company.
10. A belief in the interdependence of employee and employer.
11. A feeling of responsibility for waste and cost.
12. An appreciation of the necessity for regular work attendance.
13. A knowledge and practice of safety and health rules.
14. A knowledge and appreciation of pay deductions, insurance, etc.
15. A knowledge of local company lines of authority.
16. A knowledge of where to get personal, social, and job needs satisfied, and the feeling of freedom to do this.
17. An understanding of the problems of the company and a realization that everyone is expected to help solve them.
18. A feeling that the head office and the immediate supervisor are O. K.
19. A feeling that management respects the personal liberties of each employee.
20. A positive, constructive attitude in all job relations.
21. An early mastery of the job skill involved.

22. Little possibility of unjustified discharge; satisfaction with the job and its possibility for performance."¹

Preliminary Counseling Interview. The first contact the new employee makes with the company is usually with a staff member who is primarily engaged in selection and training. This meeting should be informal with a free flow of conversation between the employee and the staff member. An effort should be made to make the new employee feel at ease in this meeting, during which a great deal of the material in the handbook will be discussed. The staff member will inform the employee of parking facilities, locker rooms and rest rooms, how he will enter the plant, and other matters that he will need to know; also answering any questions that the employee might have. The new employee is usually taken on a tour through the plant and introduced to his foreman and fellow-workers.

Orientation Sessions. If there are only two or three new employees, this type of orientation can very well be done by extensive interviews included in the preliminary counseling. If there is a sizable group of new employees, it can be much more effectively accomplished by an organized plan, including detailed illustrated lectures on the material

1. Earl G. Planty, William S. McCord, and Carlos A. Efferson, Training Employees and Managers (New York: The Ronald Press Company, 1948), pp. 160-161.

to be covered. These lectures would include such subjects as the nature of the business, labor policy of the firm, employment practices, safety programs, and employee services which are provided by the company. A detailed plan of what is to be covered should be drawn up and followed very carefully to be sure not to neglect any of the information. Material on these lectures should be printed and distributed to the employees so that they will have a permanent copy. An organized tour of the plant would be appropriate at this time.

Introduction to Fellow Employees. It is very important that the new employee be introduced to all of his working associates. The personnel representative will take the new employee to the department where he will be assigned his job and introduced to his supervisor, if they are not already acquainted. At this point the supervisor will take over and introduce him to all of his working associates and explain how his job is related to other jobs within the department.

Sponsorship. The foreman normally has such a variety of duties to perform that he is able to devote only a small portion of his time to the new employee. For this reason a sponsorship program is sometimes used whereby one of the more experienced employees is asked to sponsor or be responsible for the new employee. He becomes acquainted with the new employee, joins him during rest periods and coffee breaks, explains rules and customs, and tries to tell him of any

information he thinks that the new employee should know. He tries to make him feel at home in the work situation. This gives the new employee a feeling of security. He feels that he has someone he can rely on in case he needs help on a problem or situation. The length of time for the sponsorship varies depending on the new employee.

Role of Unions. In companies where the new employee is expected or required to become a member of a labor union he should be informed of this fact before being employed. The employee should be given a copy of the union agreement which covers his employment. Some companies include sessions in which new employees are given the opportunity to meet and hear union officials who explain about union activities within the particular plant. Since labor contracts are usually complicated and difficult to read, they should be explained to the new employee. Union officials are usually expected to inform the new worker of his union rights,² but if belonging to a union is expected or required of all new employees, then management may take the initiative of including in the induction program a session or two in which they will invite

2. Title I, Sec. 105 of the Labor-Management Reporting and Disclosure Act of 1959 requires every labor organization to inform its members concerning the provisions of this Act. Since the chief benefactor of this Act is the individual, management should not depend upon the union but undertake to see that all of its employees know and understand their legal rights.

union officials to explain in detail all the agreements which are written in the contract.

Probation. Because of the complexity of union and labor agreements it is necessary to be sure that the new employee is competent and fit. A probation period which management and union officials have agreed on is for the purpose of proving the employee's competence and fitness. During this period he may be discharged if he does not meet certain prescribed standards. The new employee should be made aware of this probation period and its importance to his employment. He should know this so that he can put forth his best efforts in achieving performance and adjustment to his new job.

RANK AND FILE TRAINING

This type of training is given to all personnel who are not considered part of management and who have no supervisory duties or responsibilities. Foremen are considered as minor executives of management and therefore will not be included in this type of training. This type of training is designed to advance an employee's specific knowledge or skill to a satisfactory level of performance. Also, to train him in the best method and procedure for doing the job for which he was hired, and to teach him how to use the tools he will need to work with and what safety precautions should be taken to insure himself a safe workplace. Depending on

the type of work the employee will be doing, this may be a continuing training process since the invention and installation of new equipment and the change in methods and procedures for doing particular jobs make training necessarily a continuous function.

Some of the more important objectives of this type of training are: (1) to instruct the employee in the most efficient way of doing a job, (2) to improve the employee's morale by training him to be more competent and by developing his interest in the job, (3) to reduce waste in materials and damage to tools and equipment by training the employee to use better work habits, (4) to increase the speed and accuracy of the worker by showing him the proper procedure and method for doing the job, and (5) to make the worker feel that he is doing an important job and why he is doing it; to give him a feeling of belonging.

The types of training provided for the rank and file employees are many and varied. The following discussions are on some of the more important ones which should be considered.³

On-The-Job Training. This is the oldest and simplest method of training and its two general objectives are: "(1) the job instruction of newly hired employees or of employees

3. Perrin Stryker and the Editors of Fortune, A Guide to Modern Management Methods (New York: McGraw-Hill Book Company, Inc., 1954), pp. 78-79.

who have been transferred from other departments or from another job within the department, and (2) the training of employees who need correction or improvement in the jobs they are currently performing."⁴ The new employee is placed directly on the job he will be required to do or on one similar to the one that he will be doing. He is trained either by the foreman, by a training instructor, or by a skilled operator who may also have teaching ability. This was the type of training used to train millions of persons during the Second World War and it has been proven to be one of the most effective methods for rapid training of large numbers of unskilled and semi-skilled workers. But this type of program will not produce highly skilled workers quickly; it falls down in training them when speed is essential as it is during wartime when quick training is necessary to provide a new labor force to take the place of those going into military service. On-the-job training is essential to many industries where the jobs are too varied to permit duplication of the work involved and the cost of the machines used is too great to use one of them solely for training purposes. Also it is most common because in many cases it is the only type of training available. On-the-job training

4. Earl G. Planty, William S. McCord, and Carlos A. Efferson, Training Employees and Managers (New York: The Ronald Press Company, 1948), p. 205.

is strictly a line function of the first level supervisory personnel such as the foreman who may delegate an experienced worker to train the new employee. The personnel department usually plays no part in this type of training. The methods-study men might help out in the training program if it involves a better method of doing a particular job. They will train new workers and old in the better method or procedure for doing the job. The ultimate goal of this training program is gradual progress toward efficiency--starting with a light work-load, the employee works up to a full load. After he has been trained and is doing a normal work load, a check-up is made to see if he has any questions about his work and to see if he is using the right methods and procedures for doing the job. The results of this type of training depend on the foreman and the experienced worker who helps train the new employee.

In-Plant Training. This type of training program uses the same instructors as on-the-job training, the difference being that the employee is not engaged in production while undergoing training. The learner practices on equipment that is set aside from the regular production line.

Vestibule Training. In this type of training both speed and accuracy are emphasized. Large numbers of workers can be trained quickly to do specific jobs on special machines. This is supposed to be very effective means of training if emphasis

on the best method of doing the job is paramount. Usually a separate room is set aside for this purpose with a duplication as closely as possible of the actual workroom conditions existing within the plant. Machines and one or more full-time instructors will be required. Such a type of training has definite advantages. It will give the worker a better chance to adjust himself to the routine work involved in this particular type of operation before he actually goes on the production line. Some of the advantages of vestibule training are:

1. Planned instruction, and practices which will cut down supervisory time and speed up the training process.
2. Provision of greater specialization.
3. Use of superior instruction by a more qualified person.
4. Control of the situations in the school to meet the needs of changing technology.
5. Freedom of the employee to concentrate on the mastery of a skill without the pressure of getting out a certain production quota.

If close check is not kept on the relation of the training in the school to the methods used in the plant there may be a lag in procedures and techniques which will require retraining by the foreman when the employee actually starts on his job. This should be avoided because it may

cause a sense of failure to the employee.

Apprentice Training. This type of training is used to train employees in trades and crafts which require a considerable amount of time to develop skill and knowledge in a particular area of work.

"An apprentice is defined as a person at least 16 years of age covered by a written apprenticeship agreement, in a skilled trade, calling for two years of work experience, progressively increasing wages averaging 50% of regular rate, schedule work processes and operations, and 144 hours yearly in related instruction in most cases. A skilled trade is one customarily learned through training and at least two years of experience, but also requiring related instruction. The skill developed must be of application throughout the industry. Selling, retailing, managing, clerking, and professional fields cannot qualify."⁵

The employee is required to work under the supervision of a journeyman or master craftsman for a period of time which is covered by an apprenticeship agreement. These agreements are usually regulated by state law. "Thirty states have enacted voluntary apprenticeship laws, and twenty jurisdictions now have regulated and supervised plans for such training."⁶ After the employee has completed his prescribed training, he receives a certificate showing that he is a graduate craftsman or tradesman in that particular area.

5. Dale Yoder, ed., Prentice-Hall Labor Course (New York: Prentice-Hall Inc., 1956), p. 7086.

6. Dale Yoder, Personnel Management and Industrial Relations (Englewood Cliffs, N. J.: Prentice-Hall Inc., 1956), 4th ed., p. 308.

This type of training is very expensive, and, even after the company has trained the employee, it has no assurance that he will remain with the company.

Outside Training. Arrangements by the training director in cooperation with trade and vocational high schools, colleges, and universities to provide both classroom instruction and shop practice work for prospective employees. This type of training may also be used to supplement on-the-job training.

Many companies will make arrangements with high schools and colleges to hire a student on a part-time basis with the idea of hiring him permanently when he finishes school. The student usually receives compensation for his work. On the high school level this is usually done in relation to training for clerical, retailing, and manual jobs which can be easily coordinated with high school class work. On the college level this type of training is usually coordinated with students in the fields of engineering. Trainees will attend school one quarter and work the next quarter or under some similar alternating arrangement. After graduation from college, permanent employment with the firm is optional for the student.

Another type of outside training maintained by larger firms is central schools which are separate from the producing plants. These central schools do not replace on-the-job training but provide pre-training for local positions where employees will usually get on-the-job training. This pre-training

may include a large portion of the induction training. This type of pre-training is expensive and can only be afforded by the larger firms. These schools have a particular advantage in training effectively those persons who will be going into sales and service work.

Supplementary Training. This type may be accomplished either by vestibule training or on-the-job training. It is for the purpose of improving the skill of slow operators, or for training operators in new skills allied to their jobs. Also, this type of training is for training certain operators to be more versatile, that is, to teach them several different types of operations so that they may be qualified enough to replace other operators who are temporarily absent because of sickness or some other reason.

FOREMAN TRAINING

In most companies the foreman is one of the key men within the organization. He is the contact between the worker and management. The foreman is seen by the employees in the department as representing management. He is seen by management as representing the employees in that particular department. The foreman is often thought of as a minor executive having the responsibility of exercising a firm control over quality and cost so that certain standards for both are met. It is his responsibility to see that all the machines in his department are utilized and that efficient operations within the department are maintained. It

is also his job to plan and control the work of his unit so that schedules are met and the operations of the entire organization are facilitated. The foreman must have a thorough knowledge and understanding of the job he is expected to do. He must have an adequate knowledge of methods, materials, and machines which are used within the department. His most important function is leadership. He must be able to understand people. The foreman's general function is to "...promote the integration of workers, machines, materials, and time so that a given job can be accomplished efficiently and economically."⁷ Any organization should exercise most careful consideration in the selection of foremen. He should not be selected strictly on the basis of seniority nor solely because of his proficiency on his present job. Although these are pertinent factors, the foreman should be selected according to a carefully planned procedure which has established requirements according to job specifications for the foreman position within that particular department. Depending on the department, these requirements will differ. Usually the foreman will be promoted from within the department where he is already working. The reason for this is that he should be

7. Earl G. Planty, William S. McCord, and Carlos A. Efferson, Training Employees and Managers (New York: The Ronald Press Company, 1948), p. 170.

very familiar with all the operations within the department if he is to be responsible for the training of new employees within that particular department. Some of the more basic requirements that he should have include a thorough knowledge of the department, proven leadership ability, emotional stability, fairness, tact, and enthusiasm. He should have the acceptable level of intelligence which can be established by tests especially designed for this purpose. The importance of careful selection cannot be over emphasized since foremen are responsible for interpreting many and varied forms of business data. The training program is designed to increase the foreman's leadership ability, to make him a better trainer, to point out and help him provide a systematic procedure for handling employee grievances, and to facilitate his control of materials and records.

Management must keep certain basic aims constantly in mind in order to reap the full benefit of a training program.

Two basic aims of supervisory training are:

- "1. To develop supervisors who can carry out the functions assigned to them with maximum satisfaction to management, their subordinates, and themselves.
2. To insure the vitality and continuity of the organization by assisting each supervisor in the discovery and utilization of his potential abilities."⁸

8. Ibid., p. 171.

The above two major aims of the training program are also ultimate purposes of the program. These aims are brought about by keeping certain specific objectives in mind. The objectives are:

- "1. To familiarize the supervisor with company policies, practices, and procedures that affect his job directly or indirectly. This amounts to orientation of supervisors.
2. To acquaint the supervisor with principles and practices of scientific management--organizing, planning, commanding, controlling--and to assure observance of these principles in his daily work. Here the objective is to present those management skills that help to make supervision a profession.
3. To acquaint the supervisor with the basic principles of human behavior and to help him to recognize and utilize these principles in his day-to-day work. The goal is to make the supervisor a practical expert in human relations skills.
4. To provide supervisors with the technical knowledge and skill necessary for the successful performance of their jobs or for advancement to more important jobs."⁹

MANAGEMENT TRAINING

Training men for future executive positions has become of great concern to many businesses. Because of the expansion of their plants and the normal attention among the ranks of top officials, there appears to be a chronic shortage of well-qualified executives. One of the most disturbing things that can happen to any executive is for him to be moved into a position for which he has not been provided the perspective

9. Ibid., p. 172.

and breadth required to execute his duties properly. It is frequently alleged that managers are not born, that they are developed; and that great care and consideration should be taken in developing a planned program which will provide them with the necessary training needed to execute their duties.

The need for a training program should be demonstrated to top management if their unqualified support is to be obtained. College graduates do not come to a company as a finished product, so to speak. Graduates must be trained according to the specific needs of the company. Some of the more important reasons for having a planned executive training program are:

1. To further develop those executives who are already in managerial positions.
2. To attract better qualified people to come with the company--to get new blood with new ideas.
3. To provide qualified executives to fill important positions in new plants. Some of the larger companies are expanding at such a rapid rate that they cannot develop trained personnel fast enough to meet their own needs.
4. To replace personnel who are leaving the company because of retirement, resignations, and involuntary separations.

5. To better emphasize the importance of the executive training program.

The overall purpose of this type of training is to develop future executives. The main problem is to determine what kind of executive will be needed in the future. There are two major requirements of a good manager: "first, that he know how to handle people and gain their cooperation on the job; and second, that he develop those under him who are promotable, including one or more men capable of taking over his own job."¹⁰ Some of the more important qualities looked for in the prospective executive include imagination, vigor, good judgement, aggressiveness, initiative, and a dynamic personality. By far the most important skill that he should have is the ability to get along with people. As R. J. Cordiner, President of General Electric Company, has stated, "Today's manager is a man whose task is completely saturated with human relations."¹¹

The executive training program is planned and laid out for each trainee; it will usually require a one to two year period and in some companies as long as three years or more.

10. William M. Fox, ed., Readings in Personnel Management from Fortune (New York: Henry Holt and Company, 1957), p. 55.

11. "Atomic Energy", Time, Jan. 12, 1959, Vol. LXXIII, No. 2, p. 86.

This program is designed to include many and varied job assignments which will give the trainee a well-rounded background in the activities of the company. At the end of the training period he is placed on a regular job which he will keep until there is an opening in a higher-level position. Depending on his ability, he will move on up to top-management positions according to a careful selection procedure. Detailed records are kept on each trainee and are reviewed very carefully whenever the trainee is being considered for a promotion.

Job rotation is emphasized in this type of training so that the trainee may gain experience in several different areas. Management is not seeking a specialist but rather a well-rounded person for most of its executive positions. The trainee may gain experience by attending meetings where they are required to serve on various committees. Many of the larger companies have formal executive or management training programs. These programs are still in the experimental stages but for the most part they have proven to be very effective. Such a program will usually consist of a series of courses which are taught either during or after working hours. These classes may be conducted by officials within the company or by college instructors or other qualified persons within a particular field of study. The trainee for this type of program is usually recruited from

colleges and universities, but some companies feel that they should also select some of the more qualified men from the ranks and move them up to management positions as they demonstrate that they have the requisite knowledge and ability. If recruitment for managerial positions is confined to college graduates, there may be created a morale problem since the rank and file could well feel discriminated against. Management may be denying itself an important source of managerial skill; as pointed out years ago by John Stuart Mill, fully one-third of the nation's brains is submerged in the working class.

In many cases larger companies will have training programs arranged so that the employee may attend a college or university for a prescribed period of time. This type of training is desirable where the course is difficult and requires a great deal of time. Usually such training goes into more specialization such as marketing, purchasing, and selling. Many companies will encourage plans for self-development which will usually include outside courses taken at nearby institutions of learning. If the company approves the courses it will reimburse the employee for his tuition and books. The only stipulation involved is that the courses taken be related in some way to his job.

Because of the individual needs of the employees and the company, training methods necessarily differ. Executive

training activities can usually be divided into two general classes: those that occur on-the-job and those that occur off-the-job.¹²

On-the-Job Training. This type of training is the most popular method used. It provides working conditions and experience which could not be acquired any other way. Some of the more important methods used in this training program are: (1) coaching, (2) job rotation, (3) understudy assignments, and (4) lateral promotions.

Off-the-Job Training. These activities are provided on either an individual or a group basis. In some companies they are provided during working hours; in other companies they are provided after working hours. This type of training is not part of the regular job duties and may be either formal or informal. In many cases it is left up to the individual whether he will participate or not. Some of the training devices are: (1) role-playing activities, (2) company training courses, (3) committee assignments, (4) educational and professional organizations, and (5) professional readings.

GENERAL EDUCATION

Many companies in recent years have come to realize the importance of a general education program. This type

12. Herbert J. Churden and Arthur W. Sherman, Jr., Personnel Management (Cincinnati, Ohio: South-Western Publishing Company, 1959) pp. 177-184.

of education is that form of teaching which endeavors to build understanding and teamwork through discussion, analysis, and participation in fields that are not directly connected with job operations. It is hoped, however, that such training will improve employee job interest, pride in work, and shared responsibility which was taken away from him as a result of mass production. The modern corporation is a huge and complex organization which is not easily understood by most employees. It is not like the earlier company where a hired worker usually by himself built a complete unit of production in which he had great pride. That pride has been taken away from the employee. The general education program tries to replace it by building within the employee a regard for his company.

Employees who are not well informed are not first-rate workers. Well-informed and alert workers are the best workers and a sound company investment. Management helps them to be responsible citizens both in and out of the plant; good citizens are good employees. Understanding is necessary to develop attitudes of cooperation and teamwork which are preliminary and essential to obtaining full production and a high level of employee satisfaction. Three major principles which management has accepted as reasons for the inclusion of a general education training program are:

- *1. Management must take the responsibility for any deficiencies of the whole man which are not provided

for by other agencies or which industry can provide better than schools, churches, civic groups, etc.

2. Man works better at any isolated, specific job when he knows all the conditions, facts, and forces surrounding that job.
3. In complex, modern industrial society, we cannot leave it to chance that workers will meet and understand all the social and economic factors of business which are necessary to satisfied, productive employees. We must teach these facts."¹³

General education increases cooperation and minimizes conflict. It develops understanding through participation and teamwork. More important, it develops attitudes which usually result in greater productivity. Some areas normally covered by general education are:

Social and Recreational. Management tries to create social activities both in and out of the plant. Sports such as bowling, baseball, and basketball are encouraged. Also, the employees are encouraged to participate in activities such as contract bridge, social etiquette, public speaking, and many other activities which are not directly related to the job. Management may provide printed material on these subjects.

Self-development. To emphasize self-development in vocational or nonvocational areas management may encourage

13. Earl G. Planty, William S. McCord, and Carlos A. Efferson, Training Employees and Managers (New York: The Ronald Press Company, 1948), p. 239.

and arrange courses which the employee finds interesting or profitable and wishes to study. Management feels that if the employee will benefit by such courses the company will also benefit by them. The company's stipulation is that they be approved by management.

Economics. Training directors try to provide courses which may lead an employee to find interest, purpose, and enthusiasm in his job. These courses are designed to teach the worker about his company, its techniques and economy, so that he will cooperate more fully with its policies and purposes. Management tries to explain elementary principles of economics including relationships between product prices, cost, and wages. Also, they teach the employee about investments, capital accumulation, and profits.

Special Courses. This type of training may include any courses which is designed to create within all employees an enthusiasm for the firm and its products. It may include special courses which are designed to remedy common deficiencies in knowledge, understanding, and skill.

CHAPTER IV

CASE I - GENERAL ELECTRIC COMPANY

The General Electric Company's Industry Control Department located near Roanoke, Virginia, employs approximately 2,000 people. Their primary products consist of electrical control equipment for industry. Production is closely tied in with the future growth and expansion of automatic factories. Many of the jobs handled by this division are of an exceptional nature and require skilled labor of a highly specialized character. This type of industry necessitates a great deal of vision and insight into the future requirements of industry. To develop management personnel with the requisite knowledge and skills to cope with this situation, General Electric has designed a formalized training program which will provide their personnel with adequate background and experience insuring the Industry Control Department of continuous progress and prosperity.

General Electric has a staff service group known as the Personnel Development and Educational Relations Service. It has as its objective the development of business education courses that will provide its company components with improved educational plans. These programs are designed to provide more enlightened and effective leadership for the company's operations, together with a greater awareness and understanding

among individual employees of the fundamentals of business, its rules of conduct, and related subjects that will improve individual performance and opportunity. Many of the company's programs have been developed by this and other service groups. Some of these programs are over 25 years old and have proven to be very effective in developing employee understanding, skill, and knowledge. At the present time there are 500 documentary courses available to all of General Electric's training directors. Also, each individual plant has a training director whose responsibility is to meet that plant's needs by developing a program to train employees in problems that are of an individual nature. Therefore, each plant has program development from two different sources; those developed by the company-wide staff service, and those developed within the individual plants based on a local situation or need. These locally developed programs are made available to other plant locations which might have a similar need. General Electric has, for many years, been a leader in the field of training and is convinced that it is the best way to insure company progress. Each year the General Electric Company spends approximately 35 to 40 million dollars on over-all company training. This report does not represent the General Electric Company's entire training program, but only that which is being taught at the present time at the Industry Control Department in Roanoke.

INDUCTION TRAINING

Each new employee is given a four-hour detailed orientation which covers the company organization, department organization, company products, customer relations, time cards, hours of work, payroll deductions, reporting on time, pay scale, union relations, continuity of service, how reduction of work force is made, promotions, loss of continuous service, personal illness, and better living program. The latter program concerns the automatic pay increases which has amounted to over 20% during the past five-year period (1955-1960). Unlike many orientation programs, General Electric has procedural instructions, so as not to exclude any pertinent information. After this four-hour orientation period, the new employee is introduced to his supervisor who in turn introduces the beginner to his co-workers. The new employee is then shown where the locker rooms are located, time clock, and other minor but necessary details. Finally, he is presented to an experienced operator who will assist in his training.

HOURLY-PAID EMPLOYEES

Hourly-paid employees include those people who are directly performing manufacturing operations either on machines or working as indirect labor in the manufacturing function. All of these employees come under the supervision of a foreman or supervisor. Promotions are made by merit which is determined by progress reports made frequently during the first year and becoming less frequent after the employee

is well established on the job. These progress reports determine whether the employee has been well placed and how well he is performing on the job. The progress reports are also used for upgrading purposes. The wage level determines the amount of time involved in training as employees are paid according to the complexity of the job. Outside of the formal training sessions, a meeting with the foreman presiding is held once a month for all production people. At this meeting the foreman discusses with his workers the various problems within the department, such as good housekeeping, safety, quality, and procedure changes. This meeting may prevent a problem from becoming a grievance. The foreman endeavors to answer all questions, however, should he be unable to do so he seeks assistance from Employee Relations Personnel. Two specific programs particularly merit review, which are: the Apprentice Training Program, and the Manufacturing Studies Program. These programs are discussed in detail in Appendix A.

NON-EXEMPT EMPLOYEES

The non-exempt employees are salaried personnel who perform office or semi-technical work. They include clerical, office machine operators, and semi-technical people such as draftsmen and lab technicians. The non-exempt term is used to distinguish the salaried employees from the hourly-paid employees. The non-exempt personnel come under the Fair

Labor Standards Act, the same as the hourly paid group. No formal training program is designed for these employees but as the need arises, there are special courses offered to enable them to strengthen their knowledge and skills in certain areas of their work. A course in Effective Presentation is available to employees at General Electric. This course, together with several others such as Manufacturing Cost, Financial Trainee, and Introductory Accounting, are presently being taught for the non-exempt personnel. These courses are discussed in detail in Appendix A.

EXEMPT EMPLOYEES

The exempt employees include supervisors, managers, and professional people in the various technical fields. They are salaried employees who are exempt from the Fair Labor Standards Act. Their promotions are made basically the same way as the hourly people. The rating of exempt employees is, of course, more detailed because of the complexity of the work involved. Rotation is done at the Industry Control Department, both within the department and with other company departments. There are three broad classifications of management; first line supervisors or foremen, middle management, and top management.

In recent years the first line supervisor's responsibilities have increased because of the elimination of many second and third level supervisors. The company has simplified its organizational structure by placing more and more

responsibility on the first level foreman or supervisor. His duties are many and varied. His problem is mainly that of supervising those under him. Each week there is a foremen's meeting where problems are discussed and solved on various activities within the plant. A detailed discussion is made in Appendix A on a variety of studies presently being taught to foremen such as: Effective Human Relations, The Incident Process, and a Supervisor Refresher Course.

Considerable emphasis is placed on the training of middle management personnel at General Electric. Many of the courses are designed by the services divisions for company-wide application. These courses are offered to all management personnel. The courses presently being taught at the Industry Control Department are: Professional Business Management, Business Operations in Our Changing Environment, Applied Citizenship Training, and Better Business Operations and Relations. These courses are discussed in detail in Appendix A. Also, many programs have been developed for specific functional areas in the managerial and technical fields. Such courses are designed to improve the employee's skill and knowledge in his working position. Six of these courses are presently being taught at Roanoke; they are: Principles of Marketing, Introduction to Finance, Fundamentals of Electricity and Control, Motor and Control

Applications, Analog and Digital Components, and Automatic Feedback Control System Synthesis. These are also discussed in Appendix A.

Training of top management is not attempted on a local level. The General Manager and the five section heads receive their training at the Crotonville Institute, Crotonville, New York. This is a company-owned school which was designed specifically for the purpose of training top management personnel and to provide an educational service for the operating divisions of General Electric. The training period at this institution usually covers nine weeks.

OUTSIDE EDUCATION

Outside education is available to all employees. However, it is utilized more by the salaried employees than by the hourly-paid personnel. The employees at General Electric receive a great deal of counseling from the Training Director on outside educational facilities and advantages. This training may be at a college level, high school, technical school or by correspondence. Company policy for governing this type of education is as follows:

100% TUITION REFUND - SPECIAL COURSES

1. For special cases where courses are recommended by a Section Manager as necessary for the employee's job performance. This may apply to an employee with less than one year of continuous service.

2. For courses requested by the employee, related to his present job, and intended to improve the employee's effectiveness on the job. One year of continuous service is required.

100% TUITION REFUND - OBJECTIVE: TO EARN A DEGREE

1. Employee must have at least four semesters of credits already established.
2. Employee must have a letter of acknowledgement from the college, noting his acceptance as a candidate for a degree.
3. The degree must be intended to improve the individual's performance on his present or potential occupation.
4. Employee must have one year of continuous service.
5. Passing grades must be attained on all courses.

50% TUITION REFUND - PREPARATION FOR A DEGREE

1. The individual may have less than four semester hour credits, but the study must be considered important to the employee's performance of his job.
2. Employee should have at least one year of service.
3. Employee should have at least fifteen hours of established credit, and the courses should be assessed to aid him specifically in the performance of his job.
4. Passing grades must be attained.

GENERAL

1. Refund is based on tuition plus other required direct charges (such as laboratory fees and initial registration fees) billed by the institution. This does not include expenses incurred by the employee for items such as books, drafting equipment, laboratory breakage fees, dues in student organizations, thesis filing fees, thesis publication cost or examination fees.
2. Courses must be taken at an accredited college.
3. Participation in the Refund Program must be approved by the employee's Section Manager before the course is begun.
4. Employee must voluntarily enroll in the course.
5. Employee must be on the payroll at the end of the course in order to be eligible for the refund.

Tuition refunding can be a means of encouraging and assisting the personal development of employees while they continue to work a full-time schedule.

CHAPTER V

CASE II - HERCULES POWDER COMPANY

The Radford Arsenal is a government-owned installation operated on a cost-plus fixed fee basis by the Hercules Powder Company of Wilmington, Delaware. It is located on state route 114 two miles north of Radford, Virginia and presently employs approximately 2,500 workers from the surrounding area, including the towns of Blacksburg, Christiansburg, and the city of Radford. Its work consists of the manufacture of propellant powders used in various government military activities. Because of the nature of its work, the Radford Arsenal does not have a formalized training program which would extend over a period of years. The courses which are included in the Arsenal's training program are initiated by the Department Superintendent with the help of the supervisory personnel in that particular department. The courses, which are not usually repeated on a scheduled basis, are designed to improve management personnel in their supervisory ability and are given on company time. At the present time there is no training program for outside education such as tuition refund for college courses taken in connection with the employee's work. More emphasis is placed on supervisory training and management training than on technical courses. Employees

are promoted on the basis of periodic evaluations made by their immediate supervisor and the Department Superintendent who take into consideration the ability of the worker, his seniority, and the needs of the company. For the convenience of this report the following groupings will represent the labor force at the Radford Arsenal:

A. Hourly-Paid Employees

- a. Production Workers
- b. Clerical and Stenographic Workers
- c. Maintenance Helpers

B. Supervisors

- a. Area or Assistant Area Supervisor
- b. Shift Supervisor
- c. Line Foreman
- d. Area Foreman
- e. House Foreman (hourly-paid)

C. Top Management

- a. Plant Manager
- b. Assistant Plant Manager
- c. Production Superintendent
- d. Department Superintendent
- e. Production Supervisors (currently there are two, both located in the Smokeless Department)

INDUCTION TRAINING

There is no formalized procedure of induction training for hourly-paid employees. Due to the extensive operations

of the Radford Arsenal during World War Two, the surrounding area is well supplied with former Arsenal employees. By drawing on this pool of previous employees it makes induction training less essential at present. The new employee is briefed by the Employment Supervisor on certain information that is considered essential. The employee is then taken to the department where he is assigned to work and is introduced to his immediate supervisor, who introduces him to the other members of the department. The new trainee is shown the location and use of such facilities as the time clock, rest rooms, and locker rooms.

For the new engineers, there is a formalized induction program. The new employee is briefed on certain information by the Employment Supervisor and is then taken to the department where he will be assigned to work. Each new employee, under the guidance of the Training Supervisor, will make a visitation tour of not longer than one day in each department in the order listed below. He will meet the department heads of the respective departments and be assigned a qualified escort who knows thoroughly the work of the department. The tour will last for a period of two weeks and will be conducted in the following sequence:

- A. Acid - Nitroglycerine Area
- B. Nitrocellulose
- C. Smokeless Department (three days)
 - a. Green Area

- b. Finishing and Solvent Recovery Areas
 - c. Pilot "B" Area
 - d. Cast Area
 - e. Rolled Powder Area
- D. Technical
 - E. Maintenance
 - F. Engineering
 - G. Safety Department - Safety Manual and Handbook
 - H. Recreation Hall

After the departmental training, the Training Division will complete the orientation program with approximately four hours of classroom work, comprising the following general topics:

- A. Background information on the Hercules Powder Company and the Radford Arsenal.
- B. Union Contract.
- C. Rating Procedure and Incident Reports.
- D. Pertinent information for new employees from the Plant Procedure Manual.

As a part of the orientation tour a get-acquainted meeting is held with the Plant Manager.

HOURLY-PAID EMPLOYEES

Depending on the nature of the work, the hourly-paid employee receives varying amounts of on-the-job training. The new employee is assigned to an experienced worker who

assists him in performing his work. There is no formal apprentice training program because there is available, through the personnel office, a sufficient number of experienced craftsmen. As the need occurs, there are special courses given to the hourly-paid employees along with other groups in the company. An example of this type of course is the Plant First Aid Course which is discussed in detail in Appendix B.

Maintenance personnel are given special courses on safety precautions to be observed in the performance of specific jobs. The length of these courses varies with the amount of material covered and the complexity of the job.

SUPERVISORY TRAINING

More emphasis is placed on supervisory training than on any other type of training. Although there is no scheduled program for this type of training, it is taught when there is a recognized need for it. A typical supervisory training program is the Supervisors as Leaders Course which is discussed in Appendix B. The newly hired engineers will fall within this supervisory group. There is not a formalized program to teach technical skills to the new engineer. The new trainee is placed in a department according to his degree and ability, and works closely with an experienced engineer for a period of approximately three to

six months. After this period of training he is evaluated by the senior engineer and by the department head, and depending upon his proven ability, he is given individual assignments. The assignments are carried out entirely by the new engineer which may involve various phases of engineering, such as supervising drawing, drawing up specifications, and ordering materials. The new employee's previous experience is taken into consideration when he is being evaluated and promoted to a higher position. For example, if the new worker has had three to five years' experience in a similar type of engineering activity, he would normally be promoted to field engineer. If the new employee has had five to seven years' experience, he would probably be classified as a senior engineer. Each engineer works individually when he is assigned to a particular project. Although he works individually the trainee must use company procedures for the designing of a project where safety features are involved. Before the engineer starts on the project it is discussed with his supervisor, who makes available any needed assistance. In other words, the new engineer acquires his technical training by consulting with the senior engineers and with his supervisor. Except for electrical engineering, there is no special type of engineering at the Radford Arsenal. Most of the work done there is General Engineering, which includes all types of

engineering activities. In this respect the training at the Radford Arsenal is an excellent program for those engineering people who are looking for a well-rounded engineering background.

TOP MANAGEMENT

There is no training available on the local level for top management personnel. This type of training must be acquired by each individual upon his own initiative.

SPECIAL COURSES

From time to time there arises a need to teach a special type of program. These courses are usually given only once and are not repeated. An example of this type of training is the Movie Projector Training program which was given in 1956. The purpose of this course was to train a sufficient number of personnel in the operation of movie projectors so that any department head may select any one of several employees for the operation of these machines without interrupting the work force. There were 80 employees trained in this particular operation.

PROPOSED TRAINING PROGRAM

In order to fully meet the training needs at the Radford Arsenal, the Training Division has designed a program which will include five different types of courses. The two-fold objective of the program is: first, to have a well-organized Supervisory Development Program, and secondly, to handle

additional training needs and requests as they come up.
The plan for the program is as follows:

A. Training Courses - A forty-hour Supervisory Development Program consisting of the following subjects:

a. Safety (10 hours)

1. Attitudes and Responsibilities.
2. Pre-inspection and Investigation.
3. Selling Safety and Safety Training.
4. The Plan of Action.

(This course is now in preparation having had the general layout approved by the Safety Superintendent.)

b. Communications (10 hours)

1. How to Communicate - Up, Down, Across.
2. How to Write More Effectively.
3. How to Hold Meetings and Conferences.
4. How to Give Orders.

c. Industrial Relations (10 hours) - Actually a course in supervision.

1. Induction, Follow-Up, Correction.
2. How to Prevent Grievances.
3. Grievance Procedure.
4. Policy and use of Procedure Manual.

d. Cost Reduction (10 hours)

1. Methods Improvement.

2. (Materials from the Better Methods Group.)
- e. Other Training - Not included in the Supervisory Development Program, but given as the need arises.
 1. Maintenance Training Courses.
 2. Courses for special groups, for example:
Operation of Movie Projectors, Tank Rescue,
Driver Training, and Security Training.
- B. Coordination - A coordinator should be appointed from within each department to check the results of the training program. Training is of doubtful value without this type of coordination.

Suggestion

1. One coordinator in each of the departments where training is given.
 2. Coordinator is appointed by the Department Head.
 3. He must have support and some degree of authority.
 4. The coordinator will assist in area supervision and the Training Supervisor by following up on training and by recommending refresher courses when needed.
- C. Instructors - Theoretically the best instructor is the one who is thoroughly familiar with the subject matter and has teaching ability.
1. The Training Supervisor will normally teach one of the classes.

2. The instructors will be trained in presentation by the Training Supervisor.
3. The instructors are appointed by the Department Head, following consultation with the Training Supervisor.

D. Credit for Courses

1. Billfold-size card to be given to individual with indications as to the courses he has taken.
2. A record of the courses taken by each employee is kept in the Training Division office.
3. If the employee is leaving the company, a transcript of the courses he has taken is made and entered in his personnel jacket.

E. Time Estimate

Based on: 300 people to receive training
15 members per class group
40 hours training per person
4 courses of 10 hours each.

A class group will meet for two and one-half hours a day for four consecutive days, thus completing one course of the four-course program. The second, third, and fourth courses will be conducted in the same manner. Two class groups a week for ten months comprise the entire program.

CHAPTER VI

CASE III - CELANESE CORPORATION OF AMERICA

Celco is one of six plants of the Celanese Fibers Company, an operating division of the Celanese Corporation of America, and is located at Narrows, Virginia. Celco's primary products are: cellulose acetate flake, acetate filament yarn, acetate staple fiber, cigarette tow, and intercel fiber. Celco is the largest industry located at Narrows employing currently approximately 2,200 people. At the present time Celco does not have a formalized training program, but does have a well-planned procedure for training its employees. All indications are that the present procedure may become a formalized training program in the near future. The training program consists of several types of training such as: induction of new employees, hourly-paid employees, foremen, professional, management, special, and outside education.

INDUCTION TRAINING

Induction training is given to all new employees and consists of one full day of orientation. This program consists of two different types of induction training which differentiates the hourly-paid employees from the salaried employees.

Induction for Hourly-Paid Employees. After the hourly-paid employees have been interviewed, tested as to their

ability and aptitude, and given a physical examination, they are given a brief history of the Celanese Corporation. The company benefit programs and plant rules are explained to them at the same time they are provided with a booklet entitled, "Your Guide to Celco.". This publication contains the answers to those questions most commonly asked on such subjects as working conditions, vacations, insurance and similar matters. Employees are expected to read this booklet because it also covers many of the work rules which the employee will be held responsible for while he is employed at Celco. The employee's attention is directed to particular problems such as quality control while certain other matters are emphasized such as good attendance, and the reporting of absences in the proper procedural way. Safety regulations are explained along with a general explanation of the reason for the inclusion of the safety program. All of the above induction training is given by the personnel department after which the employees are taken to their individual departments where their job duties are outlined. After being introduced to their respective supervisors they are shown the location of the time clock, rest rooms, water fountains, and other necessary facilities. At this time the beginner is given a tour of his individual department. After a full day of induction training, the employee is placed upon his specific job training program within his

individual department. The employee's training will last for varying periods of time, depending on the particular type of job for which he is being trained.

Induction for Salaried Employees. This is essentially the same basic type of induction training as that for the hourly-paid employees with obvious changes to differentiate between the status of the employees according to the types of work they will be doing. Introduction is employed to a greater extent in this type of orientation since salaried employees are acquainted with superintendents and managers with whom they will be working within the plant. The organizational structure of the company is thoroughly explained together with an outline of their individual responsibilities. Such a procedure requires a much broader approach than that given to hourly-rated employees.

HOURLY-PAID EMPLOYEES

Hourly-paid employees include three broad classifications: production, maintenance, and employees of service departments. Of the 2,200 people employed by Celco, approximately 1,700 fall within the group designed as hourly-paid personnel. Training for this group consists primarily of the on-the-job type, with some classroom courses being given as a supplement to their job training.

The Synthetic Fiber industry requires rather highly specialized personnel; it being unusual to find a production

operator that is already qualified or having sufficient prior experience unless he was formerly employed in the same industry. Specialized training is given to the employee by the training foreman in the area where the trainee will be working. The production employee has an eight-week training period, which involves on-the-job training. The first two weeks are devoted entirely to classroom instruction and to observation of an experienced operator. The new employee, during this period, is not required to actually work on production. The second two weeks he is given minor job operations. The last four weeks he is actually doing the job for which he was hired, starting with a light work load and gradually increasing the amount of work he is doing until he has reached a standard work load by the end of his training period. The employee is expected to be a fully-trained worker within eight weeks. This is essentially the training provided the production worker along with instructions from the supervisor about work rules, identification of yarn, and other important matters.

Outside education is available for the production employee but is generally more utilized by salaried workers than hourly workers. There is not a great deal of incentive for hourly-paid employees to further their education, especially the female worker, since there are few higher rated jobs in the plant to which they may be promoted. The company does not use female employees as supervisors and

therefore they do not have the opportunity to progress to supervisory positions. However, there are other jobs for which they may qualify not involving shift work, but do pay a higher wage rate. The wage rate classifications are determined by negotiation with the United Construction Workers Local 153, District 50 of the United Mine Workers of America, which is the certified bargaining representative of the hourly-paid employees.¹ Under the union contract the employee may bid on higher rate jobs and if qualified, the senior production worker will receive the higher paying job. Merit is not involved in job promotions and so, therefore, the best qualified worker does not necessarily receive the higher paying job: the senior worker who meets the minimum requirements gets the job.² There is little incentive

1. Article I, Labor Agreement, 1959, United Construction Workers, (Local 153) affiliated with United Mine Workers of America, District 50, which states that "The Employer recognizes the Union as the sole and exclusive collective bargaining agent for all hourly rated employees of the Employer at its Celco Plant near Narrows, Virginia, but excluding office and clerical employees, watchmen, gatemen, firemen, and nurses, all other salaried employees, and any other supervisory employees with authority to hire, promote, discharge, discipline, or otherwise effect changes in the status of employees, or recommend such action."

2. Article VIII, Labor Agreement, 1959, United Construction Workers, (Local 153) affiliated with United Mine Workers of America, District 50, which states that "Provided other qualifications are equal, seniority rating shall be the basis as hereinafter provided in this Agreement for furlough, transfer to another seniority area, allocation of jobs under the bidding procedure, recall from furlough, bumping, or for promotion within the plant."

for the female employee to work toward advancement because of their limited opportunities. However, there is considerable incentive for promotions among the hourly-paid male employees because they can work toward foreman positions or they may progress into trade classifications which pay a higher rate. The tradesmen are generally promoted from the maintenance helper group and are expected to learn a trade by working with an experienced tradesman in one of the various trades or by studying such courses as electricity and plumbing. Primarily the incentive for male production workers is to progress to supervisory positions; few of them do, though, due to their educational qualifications or because their personalities have been determined not suitable for this type of position.

The Celco Plant does not have an apprentice training program. Their power house operators are generally promoted from the helper classification group within that particular department. If a qualified employee is not available the company will hire an experienced power house operator through the employment office. Such employees will generally have had experience with a utility company or perhaps another large industry which has provided them with experience in similar activities. According to the need of the company, some classroom courses are scheduled. The employees will participate in classroom activities which will involve training in the right procedure for operating equipment,

safety precautions, and related studies.

FOREMAN TRAINING

The Celco Plant acquires its foremen from two different sources. They are either upgraded from within the department, or they are hired as college graduates in engineering and rotated through several different departments within the plant to give them the necessary training needed. The foremen participate in a scheduled supervisor training program designed to increase their proficiency. Each department generally has a meeting once a month to discuss problems within the department. During this meeting they frequently have someone either from another department within the plant or someone from outside the plant to give a lecture on a particular subject that they feel will increase their proficiency. Celco might, for example, have a superintendent from another plant give an account of his experiences on certain types of quality problems. At such a meeting everyone is expected to participate by bringing up his particular problems and trying to solve them as a cooperative management team.

Another type of training which is provided by the Celco plant is that which is set up for a particular need. It is developed and given to each qualified person on a schedule basis. For example, it may be a 20-hour instruction course on human relations given to a group of 20 to 30 foremen.

Each foreman within the plant will be scheduled to participate in this program upon the completion of which he will be scheduled for another type of program.

Need for training is brought about by reviewing appraisals of the supervisors which may, for example, indicate that they are having difficulty in administering the labor contract. This being the case the training department, working closely with the labor relations group would prepare a course on the interpretation and application of the labor agreement. The need for training is usually determined by past experience. Because of the close correlation between the duties of foremen and higher management personnel, they usually participate in the same supervisory training programs.

PROFESSIONAL TRAINING

The professional employees are primarily staff personnel who work independently on such jobs as project engineering, engineering design, and manufacturing. Their training is in their several technical fields which generally fall within three broad classifications: (1) they gain proficiency by working with more experienced engineers in their day-to-day activities: (2) they receive technical literature, such as Chemical Engineering News, Chemical Week, Textile World, and various technical publications which give them an opportunity to keep up with the latest technological developments (3) and they attend seminars on an individual basis to improve

their knowledge in specific areas pertaining to their work; also, they visit other company locations to observe their operations.

The Celco plant has a technical seminar committee which plans a monthly meeting for all professional employees. It is this committee's responsibility to arrange the meeting and select a speaker for each session. Approximately half of these speakers are company personnel from other locations. An example of this is that recently the director of research for their affiliated company, The Amcel Propulsion Company, which manufactures rocket propellents, gave a lecture before the technical seminar. Frequently the company brings in an individual from outside the organization, such as representatives of other companies and industries as well as college professors. These people lecture on various subjects pertaining to or similar to Celco operations. Illustrative of this type of lecture is that recently a representative from another company gave a lecture on static electricity, considered to be a quality problem in the manufacture of yarn.

MANAGEMENT TRAINING

Management training is essentially the same type of training that the professional employees receive, except that the emphasis is more on management than technical proficiency. Management trainees also have the opportunity to participate in seminars which are sponsored by an organization such as the American Management Association. These

trainees are rotated through several different types of positions to broaden their experience and of course, to have the opportunity to work under more experienced and more qualified management personnel. This training is available only if the employee has shown an ability or a potential to progress into higher positions. Whether he has this ability or not is determined by an appraisal of his performance rating. At Celco the rating is ordinarily made by the employee's immediate supervisor.

SPECIAL COURSES

Special courses of short duration may include almost any topic, depending upon the needs of the plant. The program usually consists of about 16 hours of instruction given to a class of 20 to 30 employees. Such courses are usually given during working hours, but occasionally they are scheduled for after working hours. They are designed and based on the needs of the employee as determined by an appraisal of his performance rating. The program may include either supervisory or technical training, depending upon the need. It may be a course in human relations or it may be a course in statistics. The groups that normally participate are dependent upon the type of course given.

Occasionally, the plant has the opportunity to give a program that is not built into their regular training program. An example of this is that recently a lecture was given and a

film shown by a representative of the local telephone company on the correct method for answering the telephone. This type of training is relatively inexpensive since the only direct cost to the company is the employee's time participating in the program.

OUTSIDE EDUCATION

The Celanese Corporation has a program for outside education which provides for an employee to be reimbursed for the cost of attending night school, taking a correspondence course, or other forms of training. In order to qualify for approval, the outside training must be related to an employee's work, and the course must be approved prior to enrollment.

CHAPTER VII

EVALUATION AND CONCLUSION

To say that there is no value in training is the same as saying that there is no value in education. It does not seem entirely logical to believe that all the time, effort, and money devoted to training has been wasted. In most cases, "Training is absolutely essential for the successful absorption of new employees with a minimum of time and expense."¹ This does not mean that every company should have a training director or staff training division; it does mean however, that someone should be responsible for the training function. Many companies are too small to afford the cost of a full-time training director: it is equally impractical to have a training division where the number employed is too small to justify the cost for such a department. As for the larger companies, it is not only practical but highly essential that they have such a staff since as the company grows, its training problems will increase in number and complexity. By having such a department, the company can develop better training methods, in as much as more time is devoted to that particular phase of the business.

1. Walter Dill Scott, Robert C. Clothier, and William R. Spriegel, Personnel Management (New York: McGraw-Hill Book Company, 1949), 4th ed., p. 296.

If one training director could improve the efficiency by a mere one percent, a company employing more than 100 persons would profit by having such an official. On the other hand, if the cost of training exceeds the percentage increase in efficiency, it would be impractical to have such a personnel man. The only basis upon which the investment of money in a training program can be justified is that it is directed toward bringing about improvement in the performance of the work organization which will in return represent an increase in profits.

Training costs money but so does inefficiency; the problem is, which is going to cost more? It has long been recognized that training is a necessary function of any business or organization. Employees will have to be trained one way or another. Which is the most economical way, the job absorption way or a planned procedure for training? Since training is an inescapable function of management, the question today is not whether to have a training program but rather what type of training program to have. Training is becoming an increasing problem due to the growth and expansion of modern business units. Knowledge and skill can be attained only by training and education; therefore it is assumed that education will provide the best solution to most problems. Without understanding there cannot be intelligent judgement. Skills, attitudes, and knowledge are so related to work that

they are inseparable; and for a training program to be successful, management must recognize this relationship. What management is seeking is a well-rounded employee, not merely a person who can sit day-in and day-out and do a large volume of repetitive work. Machines can be designed to do this type of work.

Convinced that training is a worthwhile function, management would not hesitate to include a training program in its organizational structure if it were not for the cost. This situation was very evident during and immediately following the Second World War. Management was very much in favor of training while the government was sponsoring the program, but when the war ended, managements' interest in training began to fade, because of cost and the availability of skilled workers. Training programs are not fully appreciated largely due to the lack of effective means for accurately measuring the results of such a program. Most companies rely on faith alone that training will improve efficiency; this is a false assumption because training will increase efficiency only if it is geared to meet a specific problem which will improve production. All training programs should be designed to work toward one major company objective, which invariably is increased efficiency. Management's main obstacle in training its employees is its failure to recognize the need for such a program. In many cases the need cannot be easily recognized

unless management personnel themselves have been trained to search for better methods and procedures. Once the problem is recognized, it is then the responsibility of the training department to devise an appropriate program.

There are three different ways to increase company efficiency: (1) better selection and placement of employees when hiring, (2) training programs designed to improve the skills, knowledge, and attitudes of employees already hired, and (3) motivation of the employee to do better work. Assuming that the best selection and placement has already been accomplished, increased efficiency can be obtained only by better training or motivation. Since motivation is usually the result of training, it would be logical to assume that training would be one of management's prime objectives. To really gain company efficiency, management must be able to recognize the problems causing or contributing to inefficiency and decide which type of training will correct this deficiency. Also, in order to have an effective training program, management must recognize certain basic facts about training its employees, which are: "First, that the development of workers' skills is merely one step in a process that needs to be carried up through all levels of management; second, that good training is as important for successful operations as good engineering, merchandising, and financing; and third, that training in skills and knowledge may be much less important

than training in attitudes."² Training involves many interrelated activities which should be taken into consideration before the planning for any program is completed.

Management is still inclined to choose the type of training primarily on the basis of immediate cost, which is usually the on-the-job type of training. This type of training is essential in many cases but should be scrutinized very carefully to be sure that there is not a better and less expensive way. Many outside organizations such as universities and trade schools have recognized the need for certain types of training and have designed programs which offer training assistance in specific areas. If the company is relatively small, this may be the only practical way to train its employees. Larger corporations, however, have found that the best and most economical training methods are those worked out and applied by their own staff and line executives. Larger companies, such as the General Electric Company, find it necessary to have a professional training service.

The success of any training program depends almost entirely on the training director or the person in charge of the training function, whose responsibility it is to measure and evaluate the results of the training program. This is

2. William M. Fox, Readings in Personnel Management from Fortune (New York: Henry Holt and Company, 1957), p. 44.

too often neglected because the training director, in many cases, does not understand the techniques of measurement. Skills and knowledge can be measured fairly accurately; but probably the most important problem, the measuring of attitude, has been neglected since it involves intangibles which prevent it from being interpreted in monetary terms. As mentioned before, the only justification for the inclusion of a training program is that it will increase profits. It is important that the program be measured and evaluated so that the results can be demonstrated to management (otherwise their support may be difficult to obtain). Each training director should take the initiative and make an attempt to evaluate each training program, measuring quantitatively those factors which can be so measured, and evaluating as accurately as possible the intangible factors, such as attitudes. An effort to evaluate may solve many of the training problems or at least bring them to light so that they can be viewed more carefully. Evaluation, however, is not enough. Interpreting the evaluation of the training program to management is important; it may mean the difference between continuing or discontinuing the program. Three reasons have been suggested as to why training directors fail to evaluate and measure their training programs: *Failure to realize the value of evaluation. Lack of knowledge of the mechanics of evaluation. Fear of the

results of evaluation."³ Because of this lack of understanding, only a very small portion of present-day training programs are being evaluated in concrete, quantitative terms.

Because of the wide variation in the training needs of individual businesses and organizations there is no one best training program which may be applicable to all. Separate programs should be designed for each organization and effective techniques of evaluation used to check the results. In conducting any training program, it is important to keep two general principles in mind:

- "1. Goals and needs must be precisely defined. If goals and needs of training are not set up in terms of improving performance, eliminating problem areas or bottlenecks, and meeting definite long range objectives, the evaluation of training, if not training itself, will be meaningless.
2. Before and after measures must be taken on both the trained and control groups. This is the only way the amount of improvement can be attributed solely to training. If this type of design is not used, other factors may obscure the improvement due to training, or the training may receive too much credit for accomplishing improvements."⁴

In order to gain the full value of a training program, tests should be given to each employee to see if he has the

3. Robert A. Thisdell, "Why Not Measure Training Results?" Journal of the American Society of Training Directors, Oct., 1959, Vol. XIII, No. 10, p. 9.

4. Robert Besco, Dr. Joseph Tiffin, and Dr. Donald C. King, "Evaluation Techniques for Management Development Programs" Journal of the American Society of Training Directors, Oct., 1959, Vol. XIII, No. 10, p. 24.

potential ability before starting him in any particular program. Insofar as possible, the program should be geared to the individual interest of the employee. Training programs should be given on a selective basis. If the employee does not have the potential to progress into higher positions, it would be logical to assume that sending him through such a program would be a waste of time and money. His failure to progress satisfactorily in the program may cause him to lose interest in his work. The problem of discrimination may occur to the employee who may wonder why some are trained and others are not. This situation has long been an educational problem from the high school level on up through the college level. How does one design an effective program which is geared to the interest of the entire group? The training for some will seem too simple and therefore will become uninteresting; to others it may seem too difficult, as a result of which they will fail to grasp the full benefit of the course. A possible solution to this problem is a careful selection of participants and an explanation to those who have not been selected. The selection could be made by giving the employees an aptitude test, thereby weeding out those who are unable to receive the full benefit of the course. Those found to have exceptional ability could be given special courses or study cases which will improve their skill and knowledge.

An important subject which is too often forgotten in the induction training program is an explanation of fringe benefits.

Although this alone would take several hours, it would give the new employee a more accurate realization of how much actual money he will receive. Each benefit should be broken down in terms of dollars and cents and explained to the trainee as a part of his over all remuneration. These benefits, representing a considerable expense to the company, should not be ignored. The employee's knowledge of these additional costs to the company may create in him a better feeling toward the firm. The idea of fringe benefits is to promote a greater appreciation for the company. If these programs fail to accomplish this purpose, then there is little justification for giving such benefit programs.

Managements who have set up carefully planned training programs have found that training is a sound and profitable means of performing four essential services:

First, training can help people to perform the work normally expected of them. It can do so in office, store, or plant, and at managerial and technical levels as well as on the production line.

Second, training can help people to understand business, production, and management so that they may become enlightened participants, or at least understanding cooperators, in helping to meet the worthy goals of their employers.

Third, training can help management to understand employees and thereby satisfy those social and emotional needs upon which cooperation and teamwork depend.

Fourth, training can contribute to the growth and well-being of the individual on his job and also as a member of his community and his nation."⁵

If training programs are developed by a careful well-planned procedure to correct certain problems of inefficiency, they may be the most effective means for insuring company growth and prosperity.

5. Earl G. Planty, William S. McCord, and Carlos A. Efferson, Training Employees and Managers (New York: The Ronald Press Company, 1948), p. 269.

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APPENDIXES

APPENDIX A

GENERAL ELECTRIC COMPANY TRAINING PROGRAMS

APPRENTICE TRAINING PROGRAM

The apprentice training program at Roanoke is a system of rotational training assignments within the department, including the required outside class work. Trainees work in such areas as Toolroom, Machine Room, Job Shop, Sheet Metal, Plant Maintenance and Drafting.

Purpose

The specific purpose of the program is to train qualified young men who are interested in a career in manufacturing, and eventually qualify for jobs which require these skills and background.

Content

Trainees will work on various assignments, operating such machines as: saw, drill press, shaper, lathe, milling machine, grinders, and bench work. The classroom work is conducted by the University of Virginia Extension Division and includes the following:

1. College Algebra
2. Mechanical Drawing
3. Trigonometry
4. Descriptive Geometry
5. Strength of Materials
6. Shop Theory
7. Analytical Geometry
8. Metallurgy
9. Machine Drawing
10. Engineering Economics
11. Calculus
12. Introduction to Machine Engineering

Duration

The program covers a three and one-half year period. Trainees starting in September, 1960, will complete the required work in February, 1964. A minimum of 6800 hours shop work and 700 hours class work is required. Trainees

will work a 40-hour week and attend six to ten class hours per week.

Cost

Cost studies indicate that the company pays approximately \$102 per student, per semester, for tuitions, books, and supplies.

MANUFACTURING STUDIES

This course is a three-year program of studies related to manufacturing. Related classroom work is provided for further development in the field of manufacturing. Each year, selected internal employees are given the opportunity of participation in the related classroom work.

Purpose

The studies are planned as an integral part of the manufacturing training program. The curriculum's broad objective is to present a comprehensive and integrated plan of study on the graduate level. In scope, it covers manufacturing knowledge that should be possessed in common by all members of manufacturing management.

Content

The related classwork consists of instruction given by competent department personnel using material provided by the Manufacturing Services Personnel Development Organization. Text books, as such, are given limited usage. The courses are planned series of cases and problems or projects. To aid in solving these problems, students are furnished reference materials, standard handbooks and texts, General Electric Publications and pertinent books and materials. The inductive approach, that is, exposing the student to the learning situation through the solution of specific problems or cases, is used. Following is a summary of the classes covered in the Manufacturing Studies Program:

First Year

1. Manufacturing Organization and Supervision
2. Effective Presentation
3. Machine Capabilities
4. Materials Management Fundamentals
5. Corporate Problems in the National Economy
6. Quality Control Fundamentals
7. Manufacturing Cost Fundamentals

Second Year

1. Quality Control
2. Product Cost Analysis
3. Manufacturing Engineering
4. Materials Management
5. Employee Relations in Manufacturing

Third Year

1. Plant Engineering
2. Manufacturing Economics
3. Effective Human Relations
4. Cases in Manufacturing
5. Manufacturing Engineering - Project Development

Duration

The Manufacturing Studies Program is a continuing program. During the current year (1960), it offered both first and third year studies. During the year 1959-1960, it offered second and third year studies. This allows internal employees who have started the program to complete all three years of the studies without interruptions. Classes are held on the employee's own time, from 5:00 to 7:00 p.m. Each class meets two times per week for two hours. Classes are held from the second week in September through the first week in June each year.

Cost

Cost studies indicate that the company pays approximately \$128 per student, per year, for instructor fees, texts, and materials.

EFFECTIVE PRESENTATION

This is a course in the fundamentals of public speaking, letter writing, conference leadership, and related subjects, including actual speaking and writing assignments for the students.

Purpose

To improve oral and written presentations for more effective communication.

Content

The backbone of the course is the student's textbook containing educational material for each session. Organization,

clarity and conciseness of expression, platform personality, and diction are stressed. Instructors and assistants conduct the sessions to implement the textbook material. Oral and written assignments are evaluated by instructors and classmates so that constructive criticism can be given to each individual in an effort toward self-improvement.

Designed For

This course is designed primarily for marketing personnel, however, it is now officially a part of the Manufacturing Studies Program and is equally valuable for personnel in all functions, as it applies to their type of communication. At the present time there are three classes being taught.

Duration

Each class will last for a period of sixteen weeks. There will be two hours of classes each week, after regular working hours.

Cost

Cost studies indicate that the company pays approximately \$35 per student to cover materials and instructors fees.

ELEMENTS OF MANUFACTURING COST

This is a course which involves the study of the factors which make up General Electric's manufacturing cost.

Purpose

This course gives department personnel a general education on the elements of manufacturing cost so that they may better practice expense control and be more familiar with the cost of General Electric's products.

Content

This course consists of the study of direct material, direct labor, cost variances, and manufacturing losses. Also the determination of manufacturing cost and cash flow.

Designed For

This course is designed to give educational assistance to all non-financial personnel on the subject of manufacturing cost.

Duration

The duration of this course is nine weeks. Each week a one-hour class is given after regular working hours.

FINANCIAL TRAINEE COURSE

This is a study which utilizes the company prepared business training course material for the classroom program. In addition to the class work, the trainee is given rotating assignments of six months to one year duration in the various functions of the finance section.

Purpose

To develop supervisory and managerial personnel for the finance section.

Content

This study consists of courses taken in principles of accounting, financial analysis, product cost accounting, tax problems, money flow and banking, credit and collections, insurance, supervision and communications, auditing, budgets and measurements, distribution cost accounting, and systems and procedures.

Designed For

The Financial Trainee Course is designed for financial trainees only.

Duration

This course consists of six semesters of sixteen weeks each. Class is held from 5:00 p.m. to 7:00 p.m. each Monday evening with outside preparation of four to six hours per week. There are four one-half-hour quizzes and two two-hour quizzes each semester. A student must receive a grade of 80 or better to proceed to the next semester.

INTRODUCTORY ACCOUNTING COURSE

This is the first three semesters of the company prepared business training course and covers principles of accounting, financial analysis, and product cost accounting.

Purpose

To teach the basic techniques and theory following the accounting and reporting operations of a business with emphasis on company and departmental practices.

Content

The Principles of Accounting course is designed to provide the student who has had no previous formal training in accounting with an adequate background of basic accounting techniques. Attention is given to the various methods of analyzing and recording accounting transactions and their presentation in financial statements.

The Financial Analysis course is designed to cover the general accounting practices within the company. Beginning with the study of financial and operating statements prepared by the product department. Emphasis is placed upon the detailed general accounting principles underlying the various accounts found on these statements. Consolidated financial and operating statements are also studied. The course is built around the General Electric operating statements with company practice being emphasized. Trainees taking this course should have had Principles of Accounting.

The Product Cost Accounting study is a basic course in cost accounting presenting the practices and procedures followed within the company in collecting, analyzing and controlling the costs involved in the manufacture of the company's products. Employees taking this course should have had Financial Analysis.

Designed For

The Introductory Accounting Course is available to all employees at General Electric.

Duration

The duration of this course is three semesters consisting of sixteen weeks each. Class is held from 5:00 p.m. to 7:00 p.m. each Monday evening with outside preparation of four to six hours per week. There are four one-half-hour quizzes and two two-hour quizzes each semester, and students must receive a grade of 80 or better to proceed to the next semester.

Exempt Employees

The exempt employees include supervisors, managers and professional people in the various technical fields. They are salaried employees who are exempt from the wage-hour laws. Their promotions are made basically the same way as the hourly people. The rotation of exempt employees is, of course, more detailed because of the complexity of the work

involved. Rotation is done at the Industry Control Department; both within the department and with other company departments. There are three broad classifications of management: first line supervisors or foremen, middle management, and top management.

In recent years the first line supervisor's responsibilities have increased because of the elimination of many second and third level supervisors. The company has simplified its organizational structure by placing more and more responsibility on the first level foreman or supervisor. His duties are many and varied. His problem is mainly that of supervision. Each week there is a foremen's meeting where problems are discussed and solved. His training program includes a variety of studies such as: Effective Human Relations, The Incident Process, and a Supervisor Refresher Course.

EFFECTIVE HUMAN RELATIONS

This course consists of a series of meetings using case histories to discuss principles of human relations.

Purpose

The purpose of this course is to provide better understanding of human situations. Also, to improve skills in recognition of potential problems and taking action.

Content

Cases point out:

1. The need for approval.
2. The need to feel important.
3. The need for security.
4. The need to belong.
5. The need to participate.
6. The need for self realization.
7. Protection of prestige and status.
8. How group actions affect individual behavior.
9. The strength of emotion in blocking reason.

Designed For

This course is designed for all management personnel who need improvement in their supervisory ability.

Duration

The course consists of twelve weeks - two-hour sessions each week - one class made up of first shift supervisors -

another class made up of second shift supervisors. This course is given to employees after regular working hours.

THE INCIDENT PROCESS

The Incident Process consists of a series of discussions of local union and arbitration cases.

Purpose

The purpose of the course is to develop a fact finding technique; to become more familiar with the technical details of General Electric's union contract and local supplement; to show the importance of action by the foreman in dealing with the union.

Content

Local cases and national arbitration cases are used in this course. Some of these cases will be prepared and presented by participants from their experience.

Designed For

Manufacturing management.

Duration

Approximately twelve weeks, two hours each week, after regular work hours.

SUPERVISOR REFRESHER COURSE

This is a program to provide supervisors and key specialists with a knowledge of employee and plant community relations objectives and programs.

Purpose

The purpose of this course is to acquaint supervisors with material in the management handbook. Also, to review objectives and procedures.

Content

This course consists of courses in fringe benefits, security, employee services, wage and salary administration, personnel practices, communication, personnel relations, training, and community relations.

Designed For

This refresher course is designed for all supervisors and key specialists who feel that they have a need for review.

Duration

The duration of this course is seven meetings - one per week - two hours each session. These meetings are given after the regular working hours.

PROFESSIONAL BUSINESS MANAGEMENT

This is a course consisting of a series of discussion conferences that appraise past and future trends in various business activities. Considerable emphasis is placed on this type of training at General Electric. Many of the courses are designed by the service divisions for company-wide application. These courses are offered to all management personnel.

Purpose

The purpose of the Professional Business Management course is to develop management methods in planning, organizing, integrating and measuring work. Also to show the relations of policy, objectives and goals for each manager and specialist, and to help provide a broader outlook on business activities.

Content

This course consists of studies which involve General Electric growth, looking ahead, individual responsibility, decentralization, organization structure, managing as a profession, planning, organizing, over-all results, new methods, the changing environment, action planning-component, and action planning-individual. Individual participation is encouraged at these conferences.

Designed For

This course is available to all of General Electric's management personnel.

Duration

This course consists of three hours each week for sixteen weeks plus three hours preparation each week. The course is given on employees' own time after regular working hours.

BUSINESS OPERATIONS IN OUR CHANGING ENVIRONMENT

This is a program developed for conducting the foundation course in "Business Operations in Our Changing Environment" in the Industry Control Department.

Purpose

The specific purpose of this course is to help the participant improve his decision-making by acquiring a greater awareness of the influences of economic, political, and social developments on business operations.

Content

This study consists of courses in relation to:

1. Your Business and the Economic Problem.
2. The Manager as a Decision-Maker.
3. Our Changing Population.
4. Government and Your Business.
5. Taxation and Business.
6. Business Operations and Inflation.
7. Employment Policy and Steady Work.
8. The Workings of Competition in Your Business.
9. Pricing in Your Business and Industry.
10. Productivity.
11. Profitability.
12. Public Opinion and Business Operations.

Designed For

The Business Operations in Our Changing Environment course is available to all management personnel at General Electric.

Duration

The duration of this course is twelve weeks. Three-hour sessions are given each week after regular working hours.

APPLIED CITIZENSHIP TRAINING

The Applied Citizenship Training course is a study in political education.

Purpose

The course is designed to make the employee aware of political activities with the hope that it will improve his participation in such activities.

Content

The Applied Citizenship Training course consists of lectures on the following topics:

1. Introduction
2. What is politics?
3. The election district.
4. City or county committees
5. State and Federal committees
6. Auxiliary groups - a report on how to go into politics.
7. Patronage
8. Convention tactics
9. Parliamentary practice
10. Campaign techniques
11. Election
12. Summation of the course.

Designed For

This course is designed for all management personnel.

Duration

The duration of the course is two and one-half days of full discussion.

BETTER BUSINESS OPERATIONS AND RELATIONS

This course was formerly known as better business management, and entails the selection and development of an actual product by a group of 16 members. It involves the problems of starting and operating a business. Each member serves in a functional area other than his present assignment to get insight into other functional problems.

Purpose

The specific purpose is to demonstrate the principles and problems of operating a business, thereby learning how each function is interrelated.

Content

Commercial possibilities of a selected product are explored. Market forecast is made - product is designed - a manufacturing plan is drawn up - a marketing approach is developed and the financial aspects are reported. Relations of management to employees and community are stressed.

Designed For

This course is available to all management personnel.

Duration

Fourteen weeks - one two-hour session per week and approximately three hours per week of outside preparation. The course is given after working hours.

Many programs have been developed for specific functional areas in the managerial and technical fields. Such courses are designed to improve the employee's skill and knowledge in his working position. Six of these courses are listed below with brief descriptions.

PRINCIPLES OF MARKETING

A course covering the various functions of marketing.

Purpose

This course is designed to: give participants a clearer understanding of General Electric's marketing philosophy; give participants specific knowledge of the nature of marketing work and how it is accomplished in each of General Electric's seven marketing functions.

Content

Courses in marketing research, Production Planning, Sales, Marketing Administration, Advertising and Sales Promotion, Product Service, and Personnel Development.

Designed For

This course is designed for marketing personnel with each class consisting of approximately 20 students.

Duration

Eight weeks - approximately one and one-half hours each week, after regular working hours.

Cost

Cost studies indicate that the company pays approximately \$15 per student.

INTRODUCTION TO FINANCE

A seminar type course covering the financial function at the department and company level.

Purpose

To broaden an individual's knowledge of the work of the finance function.

Content

Accounts and Journal Entries; The Trial Balance, Working Papers, and Financial Statements; Financial Statement Analysis; Introduction to Cost Accounting; Total Product Cost for Decision Making Purposes; Inventory Cost for Income Determination Purposes; Responsibility Accounting and Reporting; Cost Control; Nature and Problems of Distribution Cost Accounting; Budgets; Break Even Point Analysis and Cost-Volume-Profit Relationships; Measurements Project; Federal, State and Local Taxes; Money Flow and Banking; Credit and Collections; Systems and Procedures; Data Processing; and Glossary of Terms.

Designed For

Non-Financial and Financial personnel who, in the opinion of their managers or themselves, will benefit by such a course.

Duration

The duration of the course is ten weeks - two hours each week after regular working hours.

FUNDAMENTALS OF ELECTRICITY AND CONTROL

This is a basic technical course of an engineering nature.

Purpose

To acquaint engineering technicians and others with basic electrical and control fundamentals.

Content

There are 16 sessions which include subjects on:
(1) Electron Flow Theory - Ohm's Law and Units of Measurements,

(2) Series and Parallel Circuits, (3) Kirchoff's Law, (4) Electromagnetic Theory and Inductance, (5) AC Theory, (6) Part 1 - DC Machines, (7) Part 2 - DC Machines, (8) AC Machines and Transformers, (9) Wires and Cable - Resistors and Rheostats, (10) Instruments, Transformers, Capacitors, Rectifiers, (11) Part 1 - Fundamentals of Control, Part 2 - Major Type of Control, (12) Part 3 - Components and Accessories, Part 4 - Control Selection, (13) Part 5 - Control of Constant Speed Motors, Part 6 - Control of Adjusting Speed Motors, (14) Part 7 - Interlocking and Sequence Control, Part 8 - Feedback Control, (15) Part 1 - Control Circuits, (16) Part 2 - Control Circuits.

Designed For

Trainees, draftsmen and engineering technicians who have had little or no technical education. Places are available for people outside of the engineering function, including marketing men.

Duration

Sixteen weeks, one class two hours per week, after working hours. Approximate number of participants is 27. Approximate total cost is \$330.

MOTOR AND CONTROL APPLICATIONS COURSE

Deals with characteristics of various types of large motors, machinery and loads, with control requirements and systems for industry.

Purpose

To give Industry Control Department engineers who have not worked in General Application Engineering a knowledge of the characteristics of various motor-driven loads so they may better apply control to industry.

Content

The course includes: Selection of Drive Capacity, The Induction Motor, Synchronous Motors and Controls, DC Motors and DC Adjustable Speed Drives, Adjustable and Variable Speed Drives, Regulating Systems, Power Converters, Short Circuit Protection, and Control Components.

Designed For

People with an engineering degree and others who have successfully completed the Industry Control "Fundamentals of Control Course (Advanced)", or the equivalent. Places are available for people outside of the engineering function, including marketing men.

Duration

The duration of the course is 24 weeks, two hours per week, after working hours. There are approximately 20 participants taking this course. Cost studies indicate that the company pays approximately \$364 for the entire program.

ANALOG AND DIGITAL COMPONENTS COURSE

A study of the operating characteristics and application rules for Industry Control analog and digital components.

Purpose

The specific purpose of this course is to improve the knowledge of the engineering personnel so that they may facilitate incorporating the new devices into product designs for static switching and automation.

Content

The course consists of eight sessions on Digital Components and eight sessions on Analog Components.

Designed For

Engineering graduates and technical specialists. Places are available for people outside of the engineering function, including marketing men.

Duration

Duration of the course is 16 weeks - two hours per week, after working hours. Approximate number of participants is 25 to 30. Approximate total cost is \$300.

AUTOMATIC FEEDBACK CONTROL SYSTEM SYNTHESIS

A course to give the engineer a working familiarity with the Laplace transform, the fundamental concept of feedback theory, the ability to synthesize appropriate compensation

networks, become familiar with the statistical methods of design and the basic techniques available for considering non-linear systems.

Purpose

The specific purpose of this course is to improve the employees' knowledge on automatic feedback control systems.

Content

Based on a text book by Professor John G. Truxal, Head of the Department of Electrical Engineering, Brooklyn Polytechnic Institute.

Designed For

Engineers who have previously had "Complex Variables" and "Operational Methods" or the equivalent, who want additional information about the theory of control systems.

Duration

Two to three quarters, ten weeks each, two one and one-half hour sessions per week, after working hours. There are approximately 18 participants taking this course. Cost studies indicate that the approximate total cost per quarter is \$760.

APPENDIX B

RADFORD ARSENAL TRAINING PROGRAMS

PLANT FIRST AID

A series of lectures given by a qualified instructor in the fundamentals of first aid.

Purpose

The purpose of the "Plant First Aid" course is to provide a knowledge of basic first aid treatment on specific accidents and injuries.

Content

A handout pamphlet covering all main headings to be discussed will be given out at the end of the first session.

The group is encouraged to study this pamphlet and bring up questions on those points which are not clear to them. The sessions are as follows:

Session I - General Background Information and Control of Bleeding.

Objectives:

- To establish the purpose of first aid training.
- To recognize the need for first aid training.
- To point out the general directions to follow in first aid.
- To explain how to recognize and how to control the various types of bleeding.
- To provide for practice in controlling bleeding.

Session II - Burns and Artificial Respiration.

Objectives:

- To define the four kinds of burns.
- To define and discuss the three degrees of burns.
- To explain and discuss the treatment for burns.
- To explain and demonstrate the principles of Artificial Respiration.

Session III - Shock and Splinting of Fractures.

Objectives:

- To define shock.
- To discuss and explain the symptoms of shock.
- To discuss and explain the treatment for shock.
- To discuss the two different types of fractures.
- To show and practice the methods for applying fixed and traction splints.

Session IV - Transportation and Test

Objectives:

- To point out the dangers of careless handling of an accident victim.
- To show the proper way to move and transport an injured person.
- To provide for practice in moving and transporting an injured victim.

Designed For

This course is available to all Radford Arsenal employees.

Duration

The course consists of four two and one-half hour classes given on company time and conducted during the period of one week. Absence from any session will have to be made up.

Maintenance personnel are given special courses on safety precautions to be observed in the performance of specific jobs. The length of these courses varies with the amount of material covered and the complexity of the job.

SUPERVISORS AS LEADERS

More emphasis is placed on supervisory training than on any other type of training at the Radford Arsenal. Although there is no scheduled program for this type of training, it is taught when there is a recognized need for it. This course consists of conferences with a leader serving as a guide rather than as a lecturer. The instructor's function is to keep group discussion active while, at the same time, following a manual and putting over certain ideas.

Purpose

The course is designed to give supervisors and foremen a greater realization of the importance of people. To help accomplish this, proved methods of handling people are stressed throughout the training program.

Content

The course consists of five two-hour sessions, with every topic complete in itself. However, continuity is maintained by each topic's following and being linked with the preceding one in logical order, which is as follows:

Session I - Importance of People.

Objectives:

- To introduce and sell the course to the group.
- To impress upon the group how dependent all supervision is upon workers.

- To show the desirability of getting a new man started right.
- To bring out the most important things the new man should know.

Session II - Attitude of Supervisor.

Objectives:

- To emphasize the importance of the right attitude on the part of the foreman.
- To establish ways of showing the right attitude.

Session III - Attitude of Worker.

Objectives:

- To suggest ways of achieving and sustaining the proper attitude.
- To learn to recognize early signs of improper attitude.

Session IV - Ways of Improving Improper Attitude.

Objective:

- To suggest ways of improving improper attitudes.

Session V - Responsibilities of Supervisors.

Objectives:

- To remind the group of the responsibilities of supervision.
- To instill in the trainee the necessity of applying the principles on their every-day job.

Designed For

This course is available to all supervisory personnel at the Radford Arsenal.

Duration

The course consists of five two-hour sessions given on company time within the period of one week.

EVALUATION OF INDUSTRIAL
TRAINING PROGRAMS

by

William Eugene Hunt

ABSTRACT

This study is concerned with the desirability or undesirability of a well-planned training program which will improve the employee's over-all efficiency by improving his skill, knowledge and, attitude.

A careful survey has been made of the material already published and available on the subject of training programs, consisting of a historical background of training, consideration of the placing of the responsibility to see that the employee is properly trained, and a detailed discussion on the different types of training programs. Case studies have been made of several selected industries and personal interviews made with management and training officials to determine their attitude toward training.

An evaluation has been made as to the justification of training programs, pointing out some of their weaknesses and suggesting possible solutions.