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**A METHOD OF EVALUATING  
FIRST LINE SUPERVISORY TRAINING**

**by**

**Benjamin I. Killian**

**A Thesis Presented to the Graduate Faculty  
Of Western Michigan University In  
Partial Fulfillment of the Requirements For  
the Degree of Master of Business Administration**

**Western Michigan University  
Kalamazoo, Michigan  
March 1962**

## PREFACE

This study is prepared to establish a method of evaluating supervisory training. An attempt to evaluate the following hypotheses will be considered: (1) There is a method of selecting the basic performance areas of a first line supervisor. (2) There are acceptable standards of performance in the basic areas. (3) Performance appraisals prior to the introduction of training will determine sub-standard performance in the selected areas. (4) Follow-up performance appraisals will indicate the effectiveness of training in improving performance without undue contamination of the criteria by other influences.

During the study other areas of investigation to be examined are: (1) Defining the supervisor's job and training. (2) Theoretical aspects of training. (3) A survey of evaluative methods. (4) A method of performance appraisal. (5) Training to improve performance.

The procedures followed are: (1) Establishing basic supervisory areas of responsibility from general analysis and descriptions of the supervisory position. (2) Creating standards of performance in areas of responsibility. (3) Developing a method of evaluating performance. (4) Evaluating training as it affects performance. These will be accomplished by conferences with Personnel Administrators, supervisory personnel, and research in the theoretical aspects of evaluation.

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## INTRODUCTION

In any competitive business the need to increase efficiency and productivity and to reduce the cost per unit produced is in the interest of the five parties of the enterprise. These are: 1) the investors, 2) the management, 3) labor, 4) the consumer, 5) the government. Satisfaction of these primary interests is difficult to achieve and the complexities encountered, although they may be common to all, are very difficult to reconcile in the first line supervision.

The first line supervisor must be trained to keep abreast of the changes in a dynamic situation. He is the buffer zone between higher level management and the employee. What the supervisor does, reflects management's policies in the eyes of the employee and the community, since neither of them are in direct contact with the company's policies except as these policies are interpreted by the supervisor. Therefore, since these policies must be assumed to reflect management's best judgment and understanding, the necessity of training the supervisor to understand and demonstrate the company's viewpoint is a necessary top management decision.

It is to be understood that "training for training's sake" is not the objective of any well organized company. The primary consideration is the benefit of training to fulfill the company's objectives. To spend money on any unproductive program will increase the cost of production and affect the competitive position of the company. A training

program must further the objectives of the company and must result in greater efficiency of supervision or the cost of training is wasted. To evaluate the training in relation to the objectives then becomes a problem which confronts management today.

Although a search of the literature does show that many people have given thought to methods of evaluating training, this study intends to establish a standard method of evaluating first line supervisory training.

The need and importance of the research undertaken in this study was engendered from several sources. One primary source was the literature of, or related to, industrial training evaluative techniques. An increasing number of articles concerning evaluation seem to be appearing each year in the journals of training, psychology, and business. Each article usually attempts to shed light on some facet of evaluation. However, there has been no single comprehensive piece of research encompassing a total evaluation program nor the systematic use of such a program for evaluation of supervisory training.

This piecemeal approach has resulted in an evaluative method of one facet of training evaluation with relatively little value within itself, but which may be of some value in the total evaluation of a training program. Kirkpatrick<sup>1</sup> lists, in his opinion, three main neglects, one of which is: "To evaluate training programs and make use of evaluation results." Kirkpatrick goes on to emphasize that while results of training

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<sup>1</sup>Donald L. Kirkpatrick, "The Most Neglected Responsibilities of the Training Department", Journal of the American Society of Training Directors, XIII, April 1959, pp. 32-35.

evaluation cannot be transferred from one company to another, evaluation techniques and procedures can be transferred and adapted frequently.

The present evaluating techniques are not adequate nor standard. In many cases the supervisor who is participating in the course does the evaluation through a testing procedure. Whether the tests are subjective or objective, the results or grades will be indicative of the supervisor's grasp of the subject matter but will not predict the final use of the material in an actual problem in the work atmosphere. Another method is the use of questionnaire forms which are distributed to the trainees. This method falls short of being reliable because the trainee may not be interested in the training program and his evaluation will be critical without factual basis. Dependence upon any one individual's evaluation of training is not as adequate as two or more evaluations of the performance of a supervisor subsequent to the training program.

Another problem confronting the training evaluator is the time element between the training and the use of the training in a performance situation. This necessitates the full use of the kind of follow-up evaluation which in a majority of the companies studied is wholly inadequate.

## CHAPTER I

### THE SUPERVISOR'S JOB AND TRAINING

#### Introduction

Before considering the problem of evaluating training as it affects the performance of a supervisor, we must look at (1) the aspects of a supervisor's job, and (2) the determination of training objectives to improve the performance of the supervisor. With a basic understanding of what areas within the supervisor's position the training is to be directed, the evaluation of the training to improve the performance within the areas selected will be more apparent and useful.

This chapter deals with a review of supervisory responsibilities and characteristics and with a survey of Supervisory Training Principles and Techniques.

#### Defining the Supervisor's Job

There are at least four groups which may be used to define the supervisory position. These include (1) upper levels of line management, (2) consultants and researchers, (3) the supervisors themselves, and (4) the people in the supervisory unit. In this section presentation will be given to the definition of groups 1, 2, 3 and 4. An attempt will be made to synthesize the various approaches, and to establish basic responsibilities of the first line supervisor.

### Definition by Upper Levels of Line Management

George D. Halsey gives some insight into the thinking of line executives when reporting a research finding resulting from a questionnaire sent to sixty-three companies. The executives were asked to list the main responsibilities of their supervisors. The ranking in importance of the principle supervisory responsibilities was:<sup>1</sup>

1. Job Instruction Training
2. Production Control
3. Cost Control
4. Handling Grievances
5. Health and Safety
6. Hiring and Firing
7. Plant Housekeeping
8. Records
9. Methods and Work Simplification
10. Job Analysis
11. Explaining Company Policies

There is no indication of time spent in each area. Halsey, in addition, reports another descriptive list of the duties of a supervisor:

1. Human Relations
  - a. Selection
  - b. Induction
  - c. Training
  - d. Rating and Recommending
  - e. Correction and Discipline
  - f. Grievances
  - g. Morale
  - h. Developing an Assistant
2. Work Production
  - a. Control of Quality and Quantity
  - b. Control of Costs
  - c. Suggesting and Improving Methods

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<sup>1</sup>George D. Halsey, Selecting and Developing First-Line Supervisors, Harper and Brothers, New York, 1955, pp. 39-40.



3. Accident Prevention
4. Supplies and Equipment
5. Record Keeping
6. Compliance with Labor Laws
7. Carrying out Provisions of the Union Contract
8. Working with Other Departments.<sup>1</sup>

This statement of duties is a composite of the views of many organizations, according to Halsey. Presumably it reflects the thinking of staff departments as well as of line executives.

Although this list of supervisory duties is very broad and encompassing and in many cases outlined in the supervisors job description, it is interesting to note that many staff departments assist in the fulfillment of the supervisor's responsibilities in performance. This composite list if fully attained would represent the epitome of first line supervisors. The partial fulfillment of these responsibilities by performance may be attained through training and performance evaluation in relation to the training program, but complete fulfillment is a utopian goal of supervisory development.

#### Definition by Researchers

One of the most exhaustive studies of supervisory activities is reported by Milton Mandell and Pauline Duckworth.<sup>2</sup> The report summarizes a study of more than 850 supervisors over a period of 108 days and

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<sup>1</sup>Ibid. pp. 34-39.

<sup>2</sup>Milton M. Mandell and Pauline Duckworth, "An Objective Scrutiny of the Supervisor's Job", Selection of Management Personnel, Edited Association, (New York: 1957), Vol. 1, pp. 84-91.

includes 4,988 activities. Table I presents the detailed findings obtained in interviews, observations, and reports.

#### BREAKDOWN OF SUPERVISORY ACTIVITIES

<u>Nature of Activity</u>	<u>Activities</u>		<u>Time</u>
	<u>No.</u>	<u>%</u>	<u>%</u>
Assigning jobs .....	789	16	8
Planning for, obtaining, maintaining, and allocating equipment and materials .....	566	11	10
Reviewing employees' work for quality and quantity, and instructing and correcting workers in these two respects .....	1669	33	27
Control and use of physical environ- ment .....	96	2	1
Keeping records .....	498	10	14
Scheduling work .....	941	19	18
Devising Improvements .....	14	(*)	1
Receiving training, including staff conferences .....	34	1	4
Exercising personnel responsibilities of the supervisor .....	309	6	6
Improving human relations .....	72	1	1
<b>TOTAL</b>	<b>4988</b>	<b>99-</b>	<b>100</b>

TABLE I

The study further found that the supervisors devoted thirty-nine percent of their time in dealing with subordinates, while the remainder of their employee contact time was spread among supervisors, staff officials, colleagues and others. Twenty-seven percent of their time was devoted to non-personal contact in such activities as record keeping, report writing and reading. The report makes considerable

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\* Less than 1%

reference to two other studies which tend to validate the findings. These studies are identified as "A Study of the Critical Requirements of Foremanship" by R. B. Finkle, a doctoral dissertation abstract for the University of Pittsburgh, and the Watson-Gallogher study.

### Activities and Behavior of Production Supervision

The general conclusions drawn from these projects are:

1. Most activities of supervisors are directly related to production.
2. Supervisors have to work on many different things, with many different people, spending brief periods on and with each.
3. Supervisors are not required to write or read much, they have to listen and talk.<sup>1</sup>

From these general conclusions may be derived a need to use objective criteria in evaluating the performance of the supervisors responsibilities. Such objective criteria including production and employee relations are important to relate supervisory performance to the activities and behavior of production supervision.

### Definition by Employees

As might be suspected, when employees are given an opportunity to describe what they consider to be good foremanship, their viewpoint departs considerably from that of management as they are likely to view the supervisor's position as they feel they should be treated rather than to think in terms of the functional responsibilities.

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<sup>1</sup>Ibid, p. 90.

This conclusion is borne out by a research project performed among 110 hourly paid production workers in three different companies in Boston. The three companies had different industrial relations environments; one was strict, one lax and the other well balanced. In spite of these variations there was amazing similarity in the responses. This project concluded that:

1. Employees expect justice, courtesy and consideration.
2. The foreman must be technically competent.
3. The foreman must know his men's performance.
4. The foreman must have control over his work group.
5. The foreman must be straightforward and decisive.
6. The foreman is expected to avoid over-familiarity.
7. The foreman should help the employees to attain their goals, economic and social.<sup>1</sup>

#### Definition by Supervisor

In a prior study of the Supervisor's Definition by the Continental Can Company, a position questionnaire was utilized. This form was passed out to all first level supervision. They were asked to define their responsibilities and activities and to give an indication of the time spent on each. While the forms were not all returned, or uniformly completed, they are indicative of the view held by the company's supervisors of their own position.

From the position questionnaire, the position as described by 67 company supervisors includes:

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<sup>1</sup>Daniel M. Colyer, "The Good Foreman - As His Men See Him," Supervisory Management, (New York; American Management Association, October 1957) Vol. II, No. 11, pp. 2-9.

## 1. Communication

- a. Meetings with subordinates
- b. Meetings with superior
- c. Meetings with other departments

## 2. Inspection and Control

- a. Quality
- b. Rate of production
- c. Job layout
- d. Equipment maintenance
- e. Reports of production
- f. Spoilage
- g. Job tickets
- h. Work progress

## 3. Organization and Planning

- a. Make work assignments
- b. Assign material and space
- c. Production scheduling
- d. Next day's work
- e. Methods improvement
- f. Stock for jobs

## 4. Record Keeping

- a. Vacations, seniority and other personnel items
- b. Requisition labor
- c. Production reports
- d. Pass out pay

## 5. Grievance Handling and Labor Relations

## 6. Instruct and Supervise Workers

It is interesting to note the various approaches. Upper management and staff departments are prone to define the supervisory position as a management function, researchers and consultants in precise time and duty elements with consideration to the multiple nature of the job, while employees will normally describe the position in terms of their personal

goals. The supervisors, on the other hand, are apt to describe their job as a production function with little emphasis on their employee relations responsibilities.

#### Other Considerations

Spriegel divides the supervisor's job into functional areas, planning, organizing, and activating or operating.<sup>1</sup> There is a detailing of these areas.

Milon Brown also gives an exhaustive list of duties and responsibilities for supervisors, but categorizes the list into four areas: Planning jobs, using authority properly, passing information, and getting results through people.<sup>2</sup>

In the Mandell project, higher level supervisors were asked what they regarded as the most important duties of first-level supervision and what differences there were in the behavior of good and poor supervisors. They responded that the most important duties were (1) planning work to meet schedules, (2) training workers, and (3) getting along well with their men. In regard to the behavior of good and poor supervisors, the weaknesses and strengths were as follows:<sup>3</sup>

#### Most Common Faults of Supervisors

1. Insufficient trade knowledge
2. Tends to be argumentative

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<sup>1</sup>William R. Spriegel, Edward Spriegel and William B. Spriegel, Elements of Supervision, (2nd Edition; New York: 1957) pp. 2-3.

<sup>2</sup>Milon Brown, Effective Supervision, The Macmillan Company, (New York: 1957) p. 4.

<sup>3</sup>Mandell and Duckworth, Selection of Management Personnel, p. 89.

3. Is critical of changes
4. Is lax in discipline
5. Lacks initiative
6. Doesn't meet deadlines
7. Lacks patience
8. Does little training
9. Becomes excitable and unnerved under stress

#### Favorable Factors for Supervisors

1. Has all-around knowledge of trade
2. Cooperates when changes are needed
3. Requires little supervision
4. Is industrious, interested in work
5. Meets deadlines
6. Plans and organizes work well
7. Continually increases in trade knowledge
8. Continually seeks improvements in methods
9. Is respected by his men
10. Keeps superior informed on work progress
11. Trains men well
12. Is honest and straightforward
13. Has a sense of humor

#### Synthesis of the Various Approaches

On the basis of the previous explanation and examination of the lists of responsibilities, some of the basic elements of the supervisory task are:

1. Managerial or Administrative - to include the broad functions of planning, organizing and controlling in the technical sense.
2. Production Responsibilities - measured, generally, qualitatively, and cost-wise.
3. People Handling Responsibilities - dealing with the broad aspects of motivation, discipline, grievances, etc.

4. Communications - including instructing, ordering, training, questioning, interpretation of policy and procedure, etc.

#### Establishing the Basic Responsibilities

The writer is of the opinion that a valid synthesis of the significant aspects seem to be contained in Continental Can Company Performance Appraisal forms which includes:

1. Technical knowledge of the positions he is to supervise.
2. Personal attributes
  - a. Intelligence
  - b. Judgment
  - c. Creativity
  - d. Personality
  - e. Maturity (emotional)
  - f. Initiative
  - g. Ambition
  - h. Enthusiasm
  - i. Cooperativeness
3. Knowledge in particular areas, other than precise job knowledge
  - a. Management principles
  - b. Company policy
  - c. The labor contract
  - d. Human nature
  - e. Product
  - f. Motivation
4. Satisfactory attitudes
  - a. Respect for authority
  - b. Loyalty to management
  - c. Loyalty to employees
  - d. Desire and willingness to learn
  - e. Willingness to accept responsibility
  - f. Safety, cost and quality
5. Abilities and skills
  - a. Communication skill
  - b. Ability to organize
  - c. Ability to plan
  - d. Ability to control
  - e. Ability to listen



- f. Ability to cooperate
- g. Ability to make decisions
- h. Ability to delegate

#### 6. Satisfactory history

The items under each of the above categories are meant to be indicative rather than exhaustive. There are records of other lists. For example, the Armco Steel Corporation lists twenty-three personal qualifications for supervisory selection.<sup>1</sup> Shawinigan Water and Power Company uses a list of behavior traits which totals ninety-nine items.<sup>2</sup>

Halsey suggests a list of qualities he would seek in supervisory personnel. He bases his choice upon two considerations: (1) they were included in a majority of lists studied by him, and (2) they are subject to measurement with reasonable accuracy by means of tests, observation or interviews.<sup>3</sup> He expresses the belief that such qualities, when possessed, are significant in predicting the success of a potential supervisor. He cites the following extensive list of qualities:

1. Motivation, ambition and family backing
2. Health and energy
3. Personal appearance
4. Persuasiveness, including enthusiasm, tact and convincing manner
5. Friendliness and willingness to help people with their problems
6. Ability to teach
7. Initiative, including courage, self-confidence, decisiveness, and constructive inventiveness

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<sup>1</sup>William J. Saunders, Jr., "Armco Steel Corporation," Selection of Management Personnel, Edited by Joseph Doohar and Elizabeth Marting, (New York: American Management Association, 1957), p. 264.

<sup>2</sup>Deryck Adamson, "Shawinigan Water and Power Company," ibid, pp. 90-93.

<sup>3</sup>Halsey, Selecting and Developing First-Line Supervisors, pp. 42-53.

8. Thoroughness
9. Cooperativeness, including respect for authority
10. General intelligence (learning ability and problem solving ability)
11. Language facility
12. Judgment regarding human relations in industry
13. Mechanical comprehension
14. Job knowledge and skill
15. Self-improvement on own initiative
16. Emotional maturity and control

In a pamphlet published by the United States Government, supervisory qualifications are suggested as including learning ability and such personal characteristics as emotional maturity, self-confidence, flexibility, liking of people, warmth in relationships with people, persuasiveness, etc.<sup>1</sup>

Although Halsey feels these qualities are measurable to a reasonable degree by tests, observations, and interviews, it is the purpose of this study to delineate only objective criteria which may be measured through performance appraisal. Many of the qualities cited in these studies are to be used in the secondary purpose of evaluation which is to point out trouble spots or substandard performance not found in the basic responsibilities but which may effect performance in the basic responsibilities.

#### Synthesis of Responsibilities and Characteristics

From the lists of responsibilities, characteristics, qualities and attitudes of the first line supervisor, it is possible now to standardize the areas of performance which will serve as the basis for the evaluation

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<sup>1</sup>Selecting Supervisors, Personnel Methods Series No. 2, Revised Edition, United States Civil Service Commission, (Washington, D.C.: 1956) pp. 9-12.

of training program. The following lists of responsibilities and characteristics are used in Performance Evaluation by the Continental Can Company, Incorporated, and tend to fulfill the objective criteria for training evaluation:

### 1. Performance of Responsibilities

- a. Employee relations
- b. Maintenance
- c. Quality
- d. Production
- e. Inventory
- f. Costs

### 2. General Characteristics

- a. Cooperation
- b. Initiative
- c. Ambition
- d. Decisiveness
- e. Self-control
- f. Dependability
- g. Manner
- h. Self-expression
- i. Job knowledge
- j. Plan and organize
- k. Self improvement
- l. Delegation

In Chapter IV the use of the above responsibilities and characteristics in an appraisal form will be discussed as a method of evaluating training. These lists of (1) Basic Responsibilities and (2) General Characteristics, are indicative of the responsibilities and qualities used for performance appraisal both by Continental Can Company and the Bendix Corporation. Although the use of the basic responsibilities as listed is essential for standard performance appraisal, the use of General Characteristics will vary dependent upon the use to which the evaluation is intended. The characteristics used will reflect in the total evaluation only as they effect basic performance responsibilities.

## Analyzing and Determining Training Needs

The proper and accurate determination of training needs for any given group is not always an easy task. However, there are several approaches to this important phase of supervisory and management training that should be most carefully considered as a means of delineating objective training material.

- a. Top executives in an organization are usually well aware of some of the inadequacies of their subordinates.
- b. The supervisory group itself may feel the need for additional knowledge and information in certain areas of responsibility.
- c. Certain tests, surveys, questionnaires, etc. have been designed to enable us to pin-point supervisory and management needs.
- d. Performance records of both individuals and groups help us determine the course and direction that our training programs should take to achieve effectiveness.<sup>1</sup>

Whatever approach we use, the end result of our efforts is to determine where the greatest weaknesses exist so that we can combat them with information and knowledge gathered from experience in like situations.

Below are examples of questions posed by the Bendix Corporation.

1. Does it seem as if your supervisors are unaware of the high cost of waste, scrap and rework?  
Are they conscious of what they can do to reduce costs?  
Are they invested with the philosophy of continuous cost control as a regular and integral part of their jobs?
2. Are your supervisors unable to communicate downward; in other words, are they unapproachable by subordinates?

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<sup>1</sup>Organizational Development, Industrial Relations Department, Continental Can Company, Inc. (October 1958).

3. Are any of your supervisors failing to communicate upward?

Are they doing a poor job of keeping management informed?

4. Are your supervisors handicapped by their inadequate planning?

Are things being taken care of in the department in a more-or-less hit-or-miss basis and would it help to show the supervisor how he can achieve effectiveness by more adequate planning?

5. Are your supervisors spending too much time on some duties and neglecting others?

In scheduling his own work, does he know what steps to take in order to keep important jobs from being delayed because of attention to less important duties?

6. Do your supervisors fail to enforce plant rules?

7. Are your supervisors sometimes indifferent to employee attitudes?

Do they sometimes fail to correct worker misunderstanding of company policies and practices?  
Are they failing to understand the importance of the worker as an individual?

8. Are they failing to properly or adequately instruct new workers?

Are they doing the best possible job of breaking in workers both old and new?  
Do they realize the importance of effective job instruction?

9. Are any of your supervisors weak in maintaining the highest possible standards of workmanship and productivity?

10. Are any of your supervisors completely satisfied with the kind of job they are doing?

Are they "coasting" or are they taking steps to prepare for a better job and more responsibility?<sup>1</sup>

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<sup>1</sup>Management Memo, Industrial Relations Department, Bendix Corporation.

Although these questions may be used in determining training objectives, it is not the purpose of this study to pursue the answers of such questions. However of primary interest is to ascertain through the objective training evaluation, if the training objectives established on the basis of such questions have been attained subsequent to the training program.

After it has been determined that training is needed to better performance, as it is suggested by the foregoing questions, it is necessary to understand the methods of establishing a realistic training program to insure attainment of the training objectives. Therefore, we may be interested in examining some of the components of a satisfactory training program.

#### Examples of Some of the Generally Accepted Principles of Supervisory and Management Development Training Programs

1. A systematic planned approach to the development of personnel is preferable to hit-and-miss, nonstructured, trial-and-error experiences or so-called "development by absorption."
2. People who demonstrate outstanding achievement on their present jobs usually are good risks for promotions and further development.
3. Good people are apt to develop best in a work climate which offers understanding leadership, challenging work opportunities, and high demands on present competence.
4. Subordinates whose immediate superiors are growing in competence and maturity give better work performance than subordinates whose immediate superiors are "static".
5. Supervisors who are concerned about the growth and development of their subordinates tend to accelerate their own development.
6. Some types of training are more effective than others - that "the more nearly the learning situation is identical to the operating situation, the more effective the learning process is apt to be".

7. The "employee-centered" manager is more likely to have a supervisory work group characterized by flexibility, high morale, and above-average work performance.
8. The most dominant factor in the growth climate of a supervisor is the kind of leadership his immediate supervisor gives him.
9. The individual's concept of himself and his potential is a highly significant factor in his developmental progress.<sup>1</sup>

### Understanding the Principles of Supervisory Training Programs

We have seen that the principles we have just discussed concerning certain practices in Supervisory Training Programs bring forth many questions. The answers to these questions will be important to a healthy evolution of our concept of supervisory development. It is a primary concern of all those who have any responsibility whatsoever for the development of personnel to continue to throw a critical light on the following questions:

1. Is supervisory performance really less satisfactory in a "work-centered" climate than it is in an "employee-centered" climate?
2. Can top management expect to get improvement in the effectiveness of its down-the-line supervision after policy-making changes have been initiated at the top?
3. What effect does a formal program for the development and training of personnel have on the promotability of people in supervisory or management jobs? Does it increase the probability of promotion from within?
4. What are the relationships between an "employee-centered" leadership in a work group and the development of personnel within the work group? How important is good leadership to the subordinates who want to get ahead in the organization?

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<sup>1</sup>Management Memo, Central Industrial Relations Dept., Bendix Corp.

5. Which methods of development and training used by supervisors produce the greatest results in equipping employees for promotion?
6. Are there any significant relationships between present job performance and promotability? Training methods and promotability?<sup>1</sup>

### Training of Supervisory Personnel

From the preceding analysis, one may conclude there are at least two reasons for following the selection process with a training program which includes concepts other than job experience: (1) To strengthen the supervisor in the performance of basic responsibilities, and (2) To inform the supervisor of new information and techniques in supervisory functions.

The process of determining training needs involves evaluation of the supervisor against acceptable performance standards. The tools for gathering information on performance include observation, interviews, application blanks, tests, rating scales, superior's knowledge, the man himself, conferences and performance appraisal.

The areas in which supervisors should be trained are those directly determinable from the job description and job specifications and include job knowledge, management principles, people handling skills and attitudes. These areas are selected to conform with the improvement of performance in basic areas of supervisory responsibility.

### The Process of Evaluation and Training

After one has decided upon what the position is, what its specifications are and then a standard method of appraisal, the next step is

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<sup>1</sup>Management Memo, Central Industrial Relations Dept., Bendix Corp.



to make an evaluation of the supervisors qualifications against the specifications. There are many devices for doing this, some of which are quite complex.<sup>1</sup>

The following table, though simple, serves an illustrative purpose of indicating the relationship between specifications, qualifications and training. This method of rating applicants is used in Continental Can Company Incorporated as a tool in selection.

A. (Required and if not possessed then no further consideration.)	Specifications <sup>2</sup>	Qualifications Possessed by Man		To Be Made Up By Training
		I	II	
	Intelligence	X	X	
	Creativity		X	
	Judgment	X	X	
	Personality	X	X	
	Good Work Record		X	

(MAN I REJECTED)

B. (Desired but not crucial as a training program can be utilized.)	Knowledge of Co. Policy	X	
	Ability to Communicate		X
	Labor Contract Knowledge	X	
	Economic Knowledge		X
	Knowledge of Management Principles		X
	Ability to Handle People		X

TABLE 2

This relationship is pointed out in a publication of the United States Civil Service Commission as suggested by the statement below:

The attack on bad supervision must be made on three fronts if it is to be successful. Good supervisory selection is salient, but if not supported by good supervisory training ... it will be substantially

<sup>1</sup>See, for example, Doohar and Marting, Selection of Management Personnel, Vol. II, Chapters 9 and 10.

<sup>2</sup>The specifications are assumed for purpose of illustration only.

nullified. On the other hand, giving good supervisory training to those who lack the personal qualities and abilities needed by supervisors is as futile as watering a garden where nothing is planted.<sup>1</sup>

There are no generally accepted uniform ways or standards in industry that are applicable to measuring specific results (at least with any degree of accuracy or reliability) of the various Supervisory and Management Training Programs now in operation. However, industry is beginning to look for results in this area of performance, and it is therefore incumbent on Management to determine the degree to which certain goals and objectives have been reached and to interpret progress by finding out to what extent the Supervisory and Management Development Program is beginning to --

1. Improve technical performance of individual people.
2. Improve the leadership of our supervisors in the direction of better delegation and better assignments.
3. Improve inter-department cooperation.
4. Correct individual personality weaknesses that have acted as barriers to a man's growth and progress.
5. Attract and hold good men in the company.
6. Provide recognition for good work that might otherwise be overlooked.
7. At each management level, provide an awareness of the potential that exists in the levels below.
8. Increase the competitive spirit of subordinates and thus encourage them to qualify for consideration when promotions and new appointments are being made.
9. Implement a sound promotion-from-within policy by pointing up the development of personnel to the immediate and long-range needs of the company.

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<sup>1</sup>Selecting Supervisors, United States Civil Service Commission, p. 2.

10. Decrease the number of indispensable men, both in present positions and in back-up jobs.
11. Increase the versatility of people and make it possible to use them more flexibly in new assignments.
12. Uncover and correct organizational problems.
13. Broaden key men in middle management positions.
14. Clarify and sharpen job descriptions to provide more specific standards of quality, quantity, and safety in supervisory job performance.
15. Reduce the frequency of "crises" and "emergencies" through planning and anticipation of needs ahead of time in the selection and promotion of people.
16. Pave the way for sound judgment and fair treatment in the severance of employment of incompetent employees.
17. Increase work group morale.<sup>1</sup>

#### SUMMARY

In the foregoing chapter a review of the supervisor's job and responsibilities was presented. From the lists of responsibilities and characteristics of supervisors submitted by researchers, employees, and supervisors, a synthesis of basic responsibilities and general characteristics found in the Continental Can Company Incorporated's organizational development appraisal forms were suggested as the basis for supervisory training evaluation to be discussed in Chapter IV.

With the supervisors job and responsibilities outlined the question of training objectives and training programs was discussed. Although the questions presented in the text of the first chapter can be used to determine training objectives and training programs, it is necessary to remember that the applicability of using such an approach may be de-

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<sup>1</sup>Management Memo, Central Industrial Relations Dept., Bendix Corp.

pendent upon the total organizational objectives. The questions presented are guides which may be used in establishing training criteria.

Therefore, with an understanding of supervisory responsibility and a basis for establishing training procedures, the evaluation of the training through performance appraisal in the basic responsibilities was outlined.

## CHAPTER II

### PURPOSES OF EVALUATION

In this chapter a review of the purposes of evaluation will be presented. This review is illustrative of the literature found in education, psychology, and business applicable to industrial supervisory training and development programs.

Many articles pertaining to training evaluation have become more frequent in recent years in the Journal of the American Society of Training Directors. Managers and training men are becoming more aware of the necessity to evaluate the training programs. Thus we see many approaches and techniques to evaluate training in the literature.

This chapter begins with the purposes of evaluation followed by principles of evaluation developed from the literature. After the steps in the evaluative process are set forth, the techniques of evaluation are discussed in detail. The chapter concludes with techniques of evaluation outlined in chart form.

Tyler, well known for his research and writing in evaluation, and whose work often serves as a basis for later authors in the area of evaluation, lists six basic purposes of evaluation.

Paraphrased they are:

1. To make a periodic check on the effectiveness of the program thus indicating the points where improvement in the program is necessary.
2. To validate the hypothesis upon which the training department operates. In some cases the hypothesis

is not valid and the organization continues for years in less than the most effective manner.

3. To provide information basic to the effective guidance of individual students (managers). There is a need to find out where he is progressing and where having difficulties.
4. To provide a certain psychological security to the education staff, the students and parents (the managers and their supervisors).
5. To provide a sound basis for public relations. Many criticisms can be met and turned into constructive cooperation if concrete evidence of accomplishments is available.
6. To help both education staff and managers to clarify their purposes and see more concretely the directions in which they are moving. Definition of results sought serves to guide the efforts of both teacher and learner.<sup>1</sup>

Schwartz and Tiedeman explain the purposes of evaluation also in a broad sense, yet applicable to most situations.

Evaluation can be used by the administrator:

1. To gather data upon which an appraisal of the entire school (training department) can be based.
- ✓ 2. To study the effectiveness of instruction.
3. To provide necessary data for appraisal of curriculum offerings. (education program offerings)
4. To furnish data for public relations purposes. (To justify the training department)
- ✓ 5. To secure data to base recommendations for additional needs.
6. To get a gross measure of teaching effectiveness. (conference leader effectiveness)

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<sup>1</sup>Ralph H. Tyler, "General Statement of Evaluation", Journal of Educational Research, (No. 7; 1942), Vol. XXV, pp. 492-494.

7. To encourage the staff in self appraisal.
8. To develop a continuous pattern of action research.

(Selected items, paraphrased from Schwartz and Tiedeman)<sup>1</sup>

A final exposition desirable for inclusion on the purposes of evaluation is one by Borosage. This is somewhat similar in content to the writings cited above but is significant in that it relates evaluation purposes directly to the training field.

1. "The chief purpose of evaluation is to validate the total approach to training that is used in the organization.
2. "The second purpose is to determine whether content in a training program is functional.
3. "The third purpose is to determine needed modifications in instructional method.
4. "The fourth purpose is to provide greater psychological security and morale to the staff responsible for training both individually and collectively.
5. "The fifth purpose is to provide information basic to effective guidance in an individual development program. Only as we appraise individual achievement are we in a position to plan additional improvement.
6. "The sixth purpose of evaluation is to provide a sound basis for public relations.
7. "The seventh purpose is to examine the extent to which financial resources have been used effectively."<sup>2</sup>

Harria, in the Encyclopedia of Educational Research, outlines a number of general principles of evaluation that seem worth noting here.

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<sup>1</sup>Alfred Schwartz and Stuart C. Tiedeman, Evaluating Student Progress in the Secondary School, (New York: 1942) pp. XI, 550.

<sup>2</sup>Lawrence Borosage, "Progress Report: Michigan Vocational Education Evaluation Project - Quarterly Report", (East Lansing, Michigan: June 30, 1959).

In essence they are: (a) Evaluation offers the greatest potential benefit if it is conducted over a period of time, if it is continuous and a built-in part of the total training process. (b) Evaluation should be concerned with results rather than effort or energy expended. (c) Self appraisal is usually better than evaluation by outsiders. Sometimes a combination of self and outside appraisal is still better. (d) Everyone concerned should be involved in evaluation, and (e) Evaluation should be multi-dimensional as well as multi-level in the arrival at conclusions.<sup>1</sup>

In the implementation of the above principles and adding others in a cooperative evaluation research project of vocational education in Michigan, Borosage lists the following principles of evaluation serving as guides for direction of the project. While the report concerns itself with an evaluation of vocational education, the principles nevertheless seem applicable to most any cooperative or team type of research.

1. "A cooperative evaluation research project must have plans built into it to help those affected learn evaluation theory and practice.
2. "A cooperative evaluation research project must be multi-level and multi-dimensional to include all levels and facets of the vocational education structure since all levels and facets impinge upon each other.
3. "A cooperative evaluation research project to be maximally effective must involve all individuals to be affected.
4. "A cooperative evaluation research project as the name implies considers that self-appraisal is more effective than appraisal of outsiders, although a combination of both is frequently better.

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<sup>1</sup> Chester W. Harris, Editor, and others, Encyclopedia of Educational Research, (New York: June 1960) pp. XXIX 1564.



5. "A cooperative evaluation research project must be undergirded by an experimental point of view.
6. "A cooperative evaluation research project is concerned with the effectiveness of means employed to achieve the ends.
7. "A cooperative evaluation research project has its genesis in the educational objectives and beliefs based upon the needs of contemporary occupational complex and the needs of the learner.
8. "A cooperative evaluation research project must employ a combination of evaluative instruments and techniques appropriate for the objectives being appraised.
9. "A cooperative evaluation research project must be characterized by frankness, security and freedom from suspicion, threat or fear."<sup>1</sup>

Some last points in the present discussion are offered by Belman and Remmers as basic principles of evaluation that ought to be observed. The authors are speaking primarily of industrial and business training, yet it is interesting that these principles could have wider application.

1. "Programs based upon specific needs can be most easily evaluated." Here Belman and Remmers' point is that training in such things as waste and accident reduction, housekeeping, quality improvement and the like can be more easily measured than training aimed at bringing about "attitude change". This touches upon one of the questions of the present study: measuring the effectiveness of management programs designed to bring about "attitude change".

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<sup>1</sup>Borosage, "Progress Report", p. 1.

2. "It is difficult to evaluate long-range training programs," that is, it is usually more workable to separate a program into short units each of which can be evaluated right after completion."
3. "It is desirable to establish control groups to make training evaluation significant." While this is not always possible, Belman and Remmers encourage this technique to enable the evaluator to have a basis for comparison.
4. "Variables should be isolated and taken into consideration." This is necessary so that the evaluation will be as accurate as possible. "It is important," say the authors, "to recognize that the results of any training activity can be more easily identified if the evaluation is concentrated on a specific aspect when it is evident that irrelevant elements have been removed or have been taken into account."
5. "Evaluation requires clear-cut operational definitions of the purposes of the training activity." Without this "... it is very difficult to place any measurement of worth on the program or the results."
6. "Evaluation may be an informal activity." After stressing evaluation, heretofore, as a formal organized activity, Belman and Remmers depart and mention that the evaluation doesn't always have to be formal. Opinions and attitudes may be obtained through interviews and other contacts of a more casual nature and are also of evaluative value.

7. "Provision should be made for evaluation during the planning stages of training programs." The caution here is that evaluation should not be thought of as an appendage at the end of a program. This leads to Belman and Remmers next point.
8. "Evaluation should be continuous, systematic and comprehensive" with results embracing all phases of a program.
9. And last, "Results of the evaluation should be expressed in terms that are understandable to those involved." While mathematical terms or the language of statistics often most accurately expresses the results, common sense dictates the interpretation of the data should be made in the terminology of the organization, the people involved or the consumers of the results.<sup>1</sup>

In summary then, of the portion of this present chapter on the theory of evaluation, various authors have suggested what appears to them as principles of evaluation. Although the principles outlined may be of value in evaluation, it should be noted that many of the points can not be applied to the objective criteria proposed in this study. Measuring "attitude change", the use of control groups, isolation of variables, opinion and attitude surveys, are techniques of evaluating training only insofar as the evaluator is able to tie them into the objective criteria of performance in the basic areas of responsibility.

Beyond the definition and purposes of evaluation, a discussion of

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<sup>1</sup> Harry S. Belman and H. H. Remmers, "Evaluating the Results of Training", Journal of the American Society of Training Directors, (1958) pp. 31-32.

principles might well be considered as pertinent, yet general, thoughts or ideas building a framework within which the evaluator operates.

### Steps in the Evaluative Process

A number of authors<sup>1</sup> of evaluation theory list what they term as steps or guides in the evaluative process. While there is some variance in details, it is interesting to note that writers from diverse fields of training agree on the content of a series of steps in an evaluative procedure. A synthesis of these recommended steps from the various sources, related to training in general and to industrial management education and development in particular, follows:

1. DEFINITION. The first step involves definition of the problem to be studied, the purposes and content of the study or the identification of the situation to be evaluated. In industry, the education and training may have been or will be based on a "needs survey". Thus in this step, the task would be to re-define needs in terms of the overall problem or situation.
2. OBJECTIVES. Second, it is suggested that the purposes or objectives which the training is to accomplish should be established. It may also be necessary to re-define the

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<sup>1</sup>Chester W. Harris, Editor, and others, Encyclopedia of Educational Research, p. 482.

H. H. Remmers and N. L. Gage, Educational Measurement and Evaluation, (New York: Harper and Brothers: 1959) p. 50.

L. David Korb, Training the Supervisor, (Washington, D. C.: United States Civil Service Commission: 1956) p. 97.

Evaluation in Extension, (Washington, D. C.: United States Department of Agriculture, Federal Extension Service: June 1956) p. 15.

goals and objectives of the company, as well as that of the training program. These objectives become the "guide-posts" or "targets" in program development and later evaluation. Without the formulation and classification of objectives, various levels of specificity and generality often make evaluation and treatment impractical.

3. ANALYSIS. The next step is related to the previous one and encourages the analysis and clarification of the purposes or objectives in terms of measurable behavior change. Otherwise, the objectives may be vague and nebulous and the behavior they imply is not clear.
4. IDENTIFICATION. The fourth step suggests the identification of situations where the changes in behavior may be noted in the day-to-day work situation. This may include the selection of available tests or measures or a "test situation" appropriate for the major objectives as outlined in Step Two.
5. APPLICATION. Included in this step is the trial and refinement of the most promising methods or instruments for accurately obtaining and appraising evidence regarding each objective. The refinement may include the evaluation of the evaluative device or method itself in terms of the degree it serves its purpose.
6. RESULTS. The sixth step proposes to analyze, interpret and use the results of evaluation. The data have their complete meaning only after they have been interpreted and related to the purpose and content of the program.

Further, the results of the evaluation should be in a form that can be interpreted by the intended reader, be he school administrator or personnel director.

7. IMPROVEMENT. Finally, evaluation is intended to be an integral and continual part of the educational process. The results of evaluation normally would result in modification and improvement in the educational program.<sup>1</sup>

While seven steps in the evaluative process have been listed here, it should be pointed out that the contributors are not in agreement as to the number of steps involved. However, agreement is not necessary. Some writers specify less than seven and some others more than seven steps. More important is the implication that an orderly process containing effective evaluative philosophy and methods be followed, and that the exact number of steps should be considered flexible to meet the demands of the program to be evaluated.

#### Techniques of Evaluation --- What and How to Evaluate

The present chapter has presented evaluation techniques from time to time but the topic will be further expended presently. First of all, there is the admonition that the only thoroughly acceptable evidence of the effectiveness of a training or educational program is the evidence of a desirable change in the participants of the training or educational

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<sup>1</sup>Carl J. Schafer, "A Study of the Evaluative Practices in Management and Development Programs in Selected United States Industries", Unpublished Ph. D. dissertation, University of Michigan, 1960.

program. The evaluation of the structure, process or any other aspect of a formal program is no guarantee that change has occurred in the individuals.<sup>1</sup>

While the above point is probably in the interests of the best type of evaluation possible, this aspect of evaluation appears least attempted because of cost, time, and difficulty involved.

Korb<sup>2</sup> points out some of the problems of assessing the change due to training in individuals in industrial situations. "Where training is in repetitive productive operations, where results can be measured in units of work per units of time, the problem of evaluation is relatively simple." But, the more removed the training is from job skills and ". . . approaches the functions of cognition, judgment and personal effectiveness, the more difficult it is to determine the existence of measurable causal relationships between training and its effects." Korb reminds us that the use of control groups, one of the highly respected evaluative techniques which is somewhat difficult and expensive to develop and administer especially in industrial situations, still involves the use of elements of judgment. "The techniques of scientific methodology may be firm, but the evidence upon which the conclusions are based are still largely subjective." This means that people are doing the evaluation in which judgment is a factor. Possibly the evaluators do not have objective criteria upon which the evaluation is to be based. Further difficulty in the evaluation of industrial supervisory and management training and development programs might be

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<sup>1</sup>Chester W. Harris, "Encyclopedia of Educational Research," p. 483.

<sup>2</sup>L. David Korb, "Training the Supervisor," p. 94.

experienced by what can be termed "contamination". An organization that sponsors a management education program is probably carrying on a large number of other activities which may also contribute to the manager's change in effectiveness. The implication here appears to caution against publishing flowery training results after evaluation of courses when many more factors may be involved in the manager's improved personal effectiveness. Nevertheless, while evaluation may be difficult, costly and time consuming, Korb is not implying that evaluation cannot or should not be done. Rather, a careful eye on the pitfalls, a systematic approach, a planned method and the assessment of training in terms of clearly defined objectives is recommended. But perhaps a "quest for certainty" of answer in desirable change in individuals is unreasonable to expect. Evaluation, in a practical sense according to Korb, then becomes that of seeking with as little bias as possible with reasonable time and cost, as much knowledge of the results of training as can be practically secured.

Having the first point in mind then: that change in the individual is probably the most desirable determination of the effectiveness of an educational program, the literature is replete with indications that evaluative efforts which assess other aspects of an educational program are also valuable for the improvement of education. Donald L. Kirkpatrick, one of the more prolific authors in the area of training evaluation, wrote a recent series of four articles for the Journal of the American Society of Training Directors, which exhaustively discuss



and categorize four aspects of evaluation: "Reaction"<sup>1</sup>, "Learning"<sup>2</sup>, "Behavior"<sup>3</sup>, and "Results"<sup>4</sup>.

Kirkpatrick<sup>5</sup> describes the aspect of "reaction" as ". . . how well the trainees liked a particular program. Evaluating in terms of reaction is the same as measuring the feelings of the conferees." He further points out that it is important to recognize that a measurement of reaction does not include a measurement of learning. But measurements of reaction, what people think about the mechanics of the training program itself, are important for ". . . decisions by top management are frequently made on the basis of one or two comments they receive from people who have attended," Kirkpatrick declares. There is the additional thought that for maximum motivation and learning, there must be interest and enthusiasm.<sup>6</sup> Although it is necessary to stimulate the trainee, the achievement of the training program's objectives are most important. Whether the supervisor has improved his performance is the measure of the objective performance appraisal and not the individual's reaction to the program.

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<sup>1</sup>Donald L. Kirkpatrick, "Techniques for Evaluating Training Programs, Part I Reaction", Journal of the American Society of Training Directors, (No. 11; November 1959), Vol. XIII, p. 3.

<sup>2</sup>Donald L. Kirkpatrick, "Techniques for Evaluating Training Programs, Part II Learning", Journal of the American Society of Training Directors, (No. 12; December 1959), Vol. XIII, p. 21.

<sup>3</sup>Donald L. Kirkpatrick, "Techniques for Evaluating Training Programs, Part III Behavior", Journal of the American Society of Training Directors, (No. 1; January 1960), Vol. XIV, p. 13.

<sup>4</sup>Donald L. Kirkpatrick, "Techniques for Evaluating Training Programs, Part IV Results", Journal of the American Society of Training Directors, (No. 2; February 1960) Vol. XIV, p. 28.

<sup>5</sup>Kirkpatrick, "Reaction", Vol. XIII, No. 11, p. 4.

<sup>6</sup>Kirkpatrick, "Reaction", Vol. XIII, No. 11, p. 8.

Kirkpatrick's<sup>1</sup> second aspect or category of evaluation, "learning", is defined as, "What principles, facts, and techniques were understood and absorbed by the conferees." The evaluator is not concerned with the on-the-job application of these principles, facts and techniques at this point.

It is more difficult to measure training results than reaction. But where communication of principles and facts is the objective, the training director evaluating in terms of "learning has . . . objective data to use in selling future programs and in increasing his status and position in the company."<sup>2</sup>

An interesting position is taken by Wrightstone, Justman and Robbins<sup>3</sup> in their discussion of knowledge of facts or learning. They remind that information or principles play a significant role in the thinking and problem solving process. The facts which are relevant bear directly upon the possible courses of action available to the individual. In this sense, they say, facts have a functional or meaningful context rather than an independent existence. On the other hand, the question might be asked-what part of the behavior exhibited is due to the facts acquired?

In the third article, Kirkpatrick<sup>4</sup> covers the evaluation of behavior. Here the evaluation problem, of the man who knows principles and techniques

<sup>1</sup>Kirkpatrick, "Learning", Vol. XIII, No. 12, pp. 21-22.

<sup>2</sup>Kirkpatrick, "Learning", Vol. XIII, No. 12, p. 26.

<sup>3</sup>J. Wayne Wrightstone, Joseph Justman and Irving Robbins, Evaluation in Modern Education, (New York: American Book Company; 1956) pp. 377-378.

<sup>4</sup>Kirkpatrick, "Behavior", Vol. XIV, No. 1, p. 13.

but doesn't practice them on the job, presents itself. Evaluation of training programs in terms of job behavior is still more difficult than reaction or learning evaluation according to Kirkpatrick.<sup>1</sup> "But it is worthwhile and necessary if training programs are going to increase in effectiveness and their benefits made clear to top management."<sup>2</sup>

In Kirkpatrick's<sup>3</sup> final article on results he alludes to the same difficulties in evaluating results that Korb<sup>4</sup> does in earlier paragraphs of this portion of this chapter -- that is, the reference to contamination or complicating factors which make it extremely difficult to evaluate certain kinds of programs in terms of results. Kirkpatrick<sup>5</sup> sees results evaluation as being very important, yet the most difficult and ". . . progressing at a very slow rate." "At the present time," he says, "our research techniques are not adequate." He notes few attempts to penetrate the difficulties encountered in measuring results of supervisory development programs or courses in human relations, decision making and the like.

Looking at Kirkpatrick's four aspects of evaluation just discussed, it appears that he is concerned with evaluation in respect to what happens to the trainee and/or the organization as a result of the trainee's change. Other authors set up "what to evaluate" with different categories of that which seems to them to be important to evaluate. For

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<sup>1</sup>Kirkpatrick, "Results", Vol. XIV, No. 2, p. 4.

<sup>2</sup>Kirkpatrick, "Behavior", Vol. XIV, No. 1, p. 18.

<sup>3</sup>Kirkpatrick, "Results," Vol. XIV, No. 2, p. 28.

<sup>4</sup>Korb, Training the Supervisor, pp. 94-95.

<sup>5</sup>Kirkpatrick, "Results", Vol. XIV, No. 2, p. 32.

instance, Besco, Tiffin and King<sup>1</sup> after a survey of management development evaluation techniques classify the "Evaluation of Methods" and the "Evaluation of Results". Their terminology of results evaluation is somewhat more inclusive than Kirkpatrick's definition, but is not in disagreement.

Evaluation of results according to Besco, Tiffin and King<sup>2</sup> includes all four aspects Kirkpatrick is talking about, namely, "reaction, learning, behavior and results". To Besco, Tiffin and King, results are "How well does this training program satisfy the needs and meet the stated objectives?"

Besco, Tiffin and King's<sup>3</sup> other category or area to evaluate, "methods", seeks to answer the question, "Are there better methods of training that could be used that would be more effective in reaching the stated objectives?" Throughout Besco, Tiffin and King's article there is the thought and emphasis that evaluation should concentrate on improving a program, not merely justifying its existence.

It is interesting to note the overlapping of "what to evaluate". Each author seems to have a few central points in common with the others and perhaps one or two aspects of evaluation that are different. Messer<sup>4</sup>, for another example, emphasizes:

1. "SCOPE and GOALS of the overall training program to help determine the extent to which training...

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<sup>1</sup>Robert Besco, Joseph Tiffin, and Donald C. King, "Evaluation Techniques for Management Development Programs", Journal of the American Society of Training Directors, (No. 11; October 1959), Vol. XII, p. 13.

<sup>2</sup>Besco, Tiffin and King, "Evaluation Techniques", p. 21.

<sup>3</sup>Besco, Tiffin and King, "Evaluation Techniques", p. 18.

<sup>4</sup>Elizabeth F. Messer, Assessing and Reporting Training Needs and Progress, (Washington, D.C.: U. S. Civil Service Commission; 1956), pp. 36-37.

is most needed to further efficient operation and mission accomplishment, and, what changes, if any, are needed in coverage and emphasis.

2. "ORGANIZATION and ADMINISTRATION of having to help determine adequacy of organizational and administrative provisions for training and whether training operates efficiently and economically.
3. "THE TRAINING ITSELF to help determine the extent to which trainees understand and accept what is being taught, and how the training process can be improved.
4. "RESULTS OF TRAINING to help determine the extent to which trainees learn and apply what was taught; the extent to which changes desired as a result of training actually occur; and how improvements can be made."

Lastly, Borosage<sup>1</sup> and Korb<sup>2</sup> agree to a great extent on most of the important evaluation aspects of an educational program. Also, Borosage says<sup>3</sup>, "Evaluative considerations involve a variety of facets each providing evidence to determine the extent to which a training program is meeting its goals. All of these areas must be considered rather than a fragmented approach." Borosage calls his categorization of what to evaluate "areas of evaluation" while Korb terms his "levels of evaluation". In essence, here are the areas or levels of evaluation deemed important by Borosage and Korb.

1. The administrative arrangement of training function
2. The course of instruction
3. Effect on participants while in training

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<sup>1</sup>Lawrence Borosage, "Some Considerations Regarding Evaluation of Training", (East Lansing, Michigan: National Project in Agricultural Communications; 1958), pp. 2-6.

<sup>2</sup>Korb, Training the Supervisor, pp. 99-104.

<sup>3</sup>Borosage, "Some Considerations", p. 2.

4. Group, intergroup and organizational effects
5. In course evaluation of participant's progress
6. Measuring impact on the supervisors or participants after the educational program
7. Determining the impact on the organization

Thus far, "what to evaluate" has been listed and discussed with little reference as to "how to evaluate", the other important half of the techniques of evaluation. The scope of this paper does not permit a lengthy discussion of the various methods (i.e. pre and post-testing, control group, questionnaire, etc.) of actually assessing change other than to mention the methods and where they might be used. But Kirkpatrick<sup>1</sup>, Besco, Tiffin and King<sup>2</sup>, Messer<sup>3</sup>, Borosage<sup>4</sup>, and Korb<sup>5</sup> all supply a variety of ideas for determining the value of, assessing change or "how to evaluate" the various aspects of the educational program. There seems to be a central thread in the thinking of these various authors on evaluation, yet each writer's ideas are (sufficiently) different and desirable for inclusion.

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<sup>1</sup>Kirkpatrick, "Reaction", Vol. XIII, No. 11, pp. 3-9.

Kirkpatrick, "Learning", Vol. XIII, No. 12, pp. 21-26.

Kirkpatrick, "Behavior", Vol. XIV, No. 1, pp. 13-18.

Kirkpatrick, "Results", Vol. XIV, No. 2, pp. 28-32.

<sup>2</sup>Besco, Tiffin and King, "Evaluation Techniques", pp. 13-27.

<sup>3</sup>Messer, Assessing and Reporting, pp. 44-64.

<sup>4</sup>Borosage, "Some Considerations", pp. 2-6.

<sup>5</sup>Korb, Training the Supervisor, pp. 99-104.

The last task of this chapter, then, will be to set forth into functional form the various aspects, categories, areas or levels of evaluation with appropriate techniques and suggestions from these authors in chart form. Chart 1, "Evaluation Techniques for Industrial Management Training and Development Programs" while follows on the next pages, captures and summarizes much of the thinking of the latter portions of this chapter into operational form.

While a "Fragmented approach"<sup>1</sup> of evaluation is not recommended, it probably would not be feasible to use every technique as listed. Rather a selection of techniques from the "How to Evaluate" column compatible with the training program, the organization, the time and the budget would, possibly, be the practical way to approach the suggested items. It should also be noted that many of the suggested techniques are informal rather than formal attempts at evaluation -- nevertheless deemed important by the evaluation veterans.

The information embodied in Chart 1 coupled with the "Principles of Evaluation" and the "Steps in the Evaluative Process" discussed earlier in this chapter suggest a well-rounded approach to the evaluation of industrial management training and development programs.

The chart is a synthesis of the material found in many of the authors in the field of evaluation. Kirkpatrick<sup>2</sup>, Besco, Tiffin and

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<sup>1</sup>Borosage, "Some Considerations", p. 2.

<sup>2</sup>Kirkpatrick, "Reaction", Vol. XIII, No. 11, pp. 3-9.

Kirkpatrick, "Learning", Vol. XIII, No. 12, pp. 21-26.

Kirkpatrick, "Behavior", Vol. XIV, No. 1, pp. 13-18.

Kirkpatrick, "Results", Vol. XIV, No. 2, pp. 28-32.

King<sup>1</sup>, Messer<sup>2</sup>, Borosage<sup>3</sup>, and Korb<sup>4</sup> have all made contributions to this chart arrangement.

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<sup>1</sup>Besco, Tiffin and King, "Evaluation Techniques", pp. 13-27.

<sup>2</sup>Messer, Assessing and Reporting, pp. 44-64.

<sup>3</sup>Borosage, "Some Considerations", pp. 2-6.

<sup>4</sup>Korb, Training the Supervisor, pp. 99-104.



## CHART I

Evaluation Techniques for Industrial Management  
Training and Development Programs

## What to Evaluate:

The ADMINISTRATIVE ARRANGEMENT of Training Function

## How to Evaluate:

The goals of the organization and educational program in harmony with each other.

An overall tone or climate in the organization receptive to education. Attitude of all levels of management toward training.

Training function clearly assigned, recognized and accepted in organization.

Relationship of staff to line in training responsibility properly delineated with adequate provision for coordination. Line training responsibility recognized.

Training competence of line supervisors.

The conduct of training governed and supported by a policy framework high in the organization.

A clear statement of training policy.

Adequate program planning based on organizational needs.

Adequate physical facilities and equipment for training.

Resources such as library, reference materials, audio visual aids. Interchange of professional information.

Opportunity for professional society attendance and participation. Visits to other training operations.

Recognition for trainers' professional achievement.

Adequate budget to fulfill training needs.

## What to Evaluate:

### GOALS AND OBJECTIVES of the Overall Training Program

## How to Evaluate:

Training program and criteria of evaluation in line with the long-range goals and objectives of the company.

Training program based on present and future needs of the organization (e.g. company expansion, contraction; changes in organization, functions and methods.)

Training aims precisely defined.

Comparison of aims with standards representing the judgment of experts.

Program cognizant of last training results and impact on organization.

Program encourages managers' self-development.

Training to be given is determined actually needed, and most needed.

Program designed and implemented so that organization and department climate, or "reward structure", supports rather than nullifies training.

## What to Evaluate:

The TRAINING PROGRAM Itself or Course of Instruction.

## How to Evaluate:

Logical procedure followed in determining needs.

Content selection based on needs and related to problems.

Participation in design of program by line organization.

Program ties in with participants personal needs, interests, backgrounds and previous training.

A written plan.

Objectives clear to instructor and participants.

Methods appropriate for the material, workable and acceptable to participants.

Effective presentation with variety.

Methods consistent with psychological principles of learning.

Methods economically possible.

Minimum of wasted time.

Requires active, positive participation by managers in training.

Provides experience as well as information.

Practical and theoretical phases of education in balance.

Provision for evaluation and follow-up built into program.

**What to Evaluate:**

**DURING PROGRAM EVALUATION of Participants' Progress.**

**How to Evaluate:**

Course material information tests.

Performance on task assignments.

Use of attitude questionnaires.

Amount of participation, interest, acceptance and enthusiasm on the part of managers in the program.

Extent to which participants bring in questions and problems.

Attendance, arrival on time by participants.

Listen to unsolicited participants' comments.

Ask the trainee the practicality and effectiveness of the program.

Trainees say, "My boss should have this training."

Interview the participants' supervisors on trainee progress.

Reports of "process observer".

**What to Evaluate:**

The REACTION OF PARTICIPANTS to the Educational Program.

**How to Evaluate:**

Use of questionnaires anonymously filled out by participants with space allowed for writing "additional comments". (Valuable for reactions to technique, e.g. lecture vs. discussion, for reactions to subject and to performance of conference leader.)

Amount of participation, attention, interest, discussion and reaction, i.e. participants should react favorably for maximum "learning".

Extent to which participants brought in questions and problems.

After program unsolicited participants' comments.

Ask the participants their reaction to the program.

Interviews with participants' supervisors as to general reaction to program.

**What to Evaluate:**

**The LEARNING OF PARTICIPANTS as a Result of the Educational Program.**

**How to Evaluate:**

Equivalent forms of the same test at the beginning and end of training.

Use of control and experimental groupings.

End of program informational tests.

Scores on supervisory judgment tests. (Some standard supervisory information can be compared with accepted norms.)

Task assignments,

Attitude questionnaire prior to and on completion of training.

Trainee comments on what they believed they learned.

Amount of participation by trainees, extent to which trainees bring in problems and questions.

Attendance. (If not regular, then not exposed to "learning situation". Measurable increase in learning perhaps due to outside factors.)

Reports by outside observers.

**What to Evaluate:**

The RESULTS, EFFECT or IMPACT on the Group, Inter-group Relationships, or Organization as a Result of the Educational Program.

**How to Evaluate:**

Study by impartial outside agency, measuring specific results against specific objectives or aims of the program.

Internal attitude or communications survey.

Survey by specially appointed internal committee.

Various personnel studies, management audits, analyses of records. (e.g. customer complaints, turnover, grievances, review of merit ratings, training time of new employees, etc.)

Increased effectiveness of staff conference functioning.

Reduced intergroup or interdepartmental friction.  
Improved relationship of managers and their supervisors.

Improved overall group or organizational functioning.  
Reduction of "bottleneck" situations.

Consulting consumers of product or service offered by the organization.

Expressions by employees and employee groups of satisfaction with managerial force. Improvements in communication and morale.

Participant behavior flowed over and favorably affected behavior and attitudes of non-participants.

More adequate reservoir of talent to meet present promotion and future expansion needs.

## What to Evaluate:

The BEHAVIOR OF PARTICIPANTS as a Result of the Educational Program.

## How to Evaluate:

Job measurement techniques. Systematic appraisal of on the job performance on a "before and after" basis.

Direct observation of managers in action after education program. Extent and duration of change.

Use of a check list with objectives of the program noting behavior changes resulting from the training. Also use of this check list asking participants' supervisors if they have noted favorable changes.

"Depth interviews" with participants and supervisors.

Having participants fill out a questionnaire on how they benefited from the educational program.

Asking participants at intervals following completed training how they have benefited, giving concrete illustrations and incidents, successful and unsuccessful applications of the training.

Use of post training meetings where behavior as a result of training is reviewed.

Compare behavior of those trained with those not trained, i.e. control grouping. (Without use of control grouping, responses could be due to factors other than training.)

Evidences of increased "professional" attitude by managers.

Spot check of consumers' attitude toward service rendered. Improved efficiency.

Organizational attitude surveys.

Obtaining reaction of peers or those familiar with participants' performance before educational program. Also reactions of employees to performance of their superiors who were in the program.

Use of records on absenteeism, suggestions, turnover, grievances, etc. in the managers' work groups.



The principles of evaluation are many and varied. Principles might well be considered as pertinent, yet general, thoughts or ideas building a framework within the evaluator operates. These appear significant for the industrial trainer.

- a. Evaluation offers the greatest potential benefit if conducted over a period of time and a built-in part of the total training process.
- b. Evaluation should be concerned with results rather than effort expended.
- c. Programs with specific objectives can most easily be evaluated but variables which may influence results should be isolated and taken into consideration.<sup>1</sup>

A synthesis of recommended steps for evaluation from various sources<sup>2</sup> indicates an orderly yet flexible process that should be used in evaluative endeavors:

- a. DEFINITION of the problem to be studied or evaluated.
- b. OBJECTIVES, the education is to accomplish, should be formulated or re-defined.
- c. ANALYSIS or clarification of objectives in terms of measurable change.
- d. IDENTIFICATION of a "measure" or "test situation" where changes may be noted.
- e. APPLICATION and/or refinement of the "measure" or evaluative device.
- f. RESULTS are then to be analyzed, interpreted and put in usable form.

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<sup>1</sup>Harris, Encyclopedia, p. 38.

Belman and Remmers, "Evaluating", pp. 31-32.

<sup>2</sup>Borosage, "Progress Report", p. 1.

Borosage, "Some Considerations", p. 2.

Wrightstone, Justman and Robbins, Evaluation, p. 26.

Evaluation in Extension, (Washington, D.C.: U. S. Department of Agriculture, Federal Extension Service; June 1956', p. 15.

g. **IMPROVEMENT** or modification of the educational program.

There is ample discussion in the literature of what to evaluate, i.e. what should be the focus or level of evaluation of a management education and development program. Kirkpatrick<sup>1</sup>, Besco, Tiffin and King<sup>2</sup>, Messer<sup>3</sup>, Borosage<sup>4</sup>, and Korb<sup>5</sup> designate a variety of items, when evaluated, provide evidence to determine the extent a course of a program is meeting its goals. The authors emphasize that several of these areas should be considered for a comprehensive evaluation:

- a. The **ADMINISTRATIVE ARRANGEMENT** under which this training program was given.
- b. The **GOALS AND OBJECTIVES** of the training program.
- c. The **METHOD OF PRESENTATION** of the training program (conference techniques, conference leaders).
- d. The **PARTICIPANTS' PROGRESS** during the training program.
- e. The **FEELING OF PARTICIPANTS** about the training program.
- f. The **LEARNING OF PARTICIPANTS** as a result of the training program (different actions back on the job resulting from the program).
- g. The **BEHAVIOR OF PARTICIPANTS** as a result of the training program (different actions back on the job resulting from the program).

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<sup>1</sup>Kirkpatrick, "Reaction", Vol. XIII, No. 11, pp. 3-9.

Kirkpatrick, "Learning," Vol. XIII, No. 12, p. 21.

Kirkpatrick, "Behavior", Vol. XIV, No. 1, p. 13.

Kirkpatrick, "Results", Vol. XIV, No. 2, p. 28.

<sup>2</sup>Besco, Tiffin and King, "Evaluation Techniques", p. 18.

<sup>3</sup>Messer, Assessing and Reporting, pp. 36-37.

<sup>4</sup>Borosage, "Some Considerations", pp. 2-6.

<sup>5</sup>Korb, Training the Supervisor, pp. 99-104.

- h. The RESULTS, EFFECT, IMPACT on the group, intergroup relationships or organization as a result of the training program.

Lastly, a sampling of techniques of how to evaluate the above areas or levels of evaluation, as suggested by their authors, reveals the following as most often suggested or used in industrial management and education programs:

- a. Course material information tests:
  - Before program
  - During program
  - Directly after program
  - Sometime after program
- b. Attendance at program
- c. Amount of participation by participants
- d. Interviews with, or questionnaire to:
  - Participants
  - Participant's supervisors
  - Participant's employees
  - Participant's peers
- e. Check of consumers' attitude toward service or product rendered by participants' department
- f. Use of participant questionnaires on:
  - Changed attitudes
  - Feelings about program
  - Benefits from program
- g. Control and experimental groupings
- h. Reports by outside observers
- i. Direct observation of participants actions on job after program
- j. Organizational attitude or communications surveys
- k. Use of records on absenteeism, material waste, turnover and/or grievances in the participant's work group
- l. Significant increases in "performance review" ratings or the participants by their supervisors.

### CHAPTER III

#### REVIEW OF EVALUATIVE STUDIES IN THE LITERATURE

This chapter is presented to review and analyze those evaluative studies or experiments concerning management training and development which have been reported in the literature. Articles in journals and magazines, reports in pamphlet form, as well as portions of texts, from the fields of education, psychology and the general area of business have been investigated for significant pieces of evaluative research having to do with, or related to supervisory training.

A number of evaluative experiments are given in the literature. But to review all of the writings or even every detail of those desirable for inclusion, would demand much more space than is allowable in a study of this compass. Thus only those writings which appeared significant in scope, pioneering or unique in method have been included.

It becomes somewhat difficult to separate the evaluative practices, as mentioned by the various experimenters, from the results of the management training program as revealed by their evaluations. But in keeping with the purpose and scope of this study, the evaluative practices as reported in the literature have been accented. However, some of the results and conclusions by a particular author may be cited, as needed for the understanding of the study or of the appropriateness of the evaluative technique.

For convenience, the studies reviewed have been categorized according

to their purpose of inquiry. First, several industry-wide studies are included to lend insight in scope of supervisory training and development, along with two studies which describe management training programs as conducted by universities. A small number of studies were located which attempted to survey specific evaluation practices in industry and are reported. Finally, a number of studies are reviewed and included because of their uniqueness of purpose, scope, evaluative technique or design not reported in any of the other studies.

#### Industry-Wide Studies Relating to Specific Evaluative Practices

In one industry-wide study secured relating to evaluative practices, in this case the evaluation of a management training and development program at the foreman level, the Bureau of National Affairs<sup>1</sup> conducted a survey by questionnaire of 160 of their members regarding the members' foremen training activities. At the time of the study, 1952, apparently the most popular subject area for foremen training was the "broad category known as human relations", i.e. foremen were given information on "how to handle employees under them, how to be a leader, how to discipline workers, how to understand workers' problems -- in general, how to be a better boss."

Of importance to the present research was the Bureau of National Affairs' findings concerning the evaluation of their members' programs. Only about one-fourth of the companies reporting indicated "... that they try to evaluate the results of the program through questionnaires or

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<sup>1</sup>Foreman Training, (Washington, D.C.: The Bureau of National Affairs, Inc.; January 1952), p. 17.

other techniques."<sup>1</sup> Following is the entire reporting of evaluative methods as revealed by the survey:

"An attitude survey is made by distributing mimeographed questionnaires at training sessions. They are returned voluntarily and anonymously. Replies are tabulated and analyzed to determine attitude toward training and company policies."

"We use a questionnaire filled out by each conference participant."

"At the end of each year (30 sessions) participants fill out an attitude survey form." (Dixie Cup Co., Easton, Pa.)

"Opinion polls are conducted periodically." (Minneapolis-Moline)

"We use an occasional questionnaire which asks foremen for their comments on instruction given and for discussion topics that are in line with their current problems." (Cherry-Burrell Corp., Cedar Rapids, Iowa)

"We test attitudes and opinions, maintain charts on number of grievances, suggestions, etc." (Kendall Refining Co., Bradford, Pa.)

"Informal and formal analysis in terms of individual reaction, production rates, safety records, quality records, and the like."

"True and false types of quizzes are used before and after training." (Square D Co., Detroit, Michigan)

"Have used Princeton Research Institute and also used our own post program evaluation." (Johnson and Johnson, New Brunswick, N. J.)

"We conducted an employee attitude survey and used the results, among other things, to develop training needs." (New York Central System, New York, N.Y.)

"Use employee attitude surveys, supervisory merit rating, personal interviews." (Atlas Boxmakers, Inc., Chicago, Ill.)

"We have a psychometrist that gives I.Q. tests for supervision." (Armstrong Tire and Rubber Co., Natchez, Miss.)

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<sup>1</sup> Foreman Training, Bureau of National Affairs, Inc., p. 11.

In another study located, this one smaller, yet distinctive, the American Management Association<sup>1</sup> outlines a twenty company survey to ascertain company "satisfaction" with results of their management education and development programs in general. Most companies in the survey cited "satisfaction", but that this satisfaction was based on evaluation methods they considered inadequate.

"Companies that did attempt systematic evaluation most frequently used availability of replacements for higher level positions or improvements in job performance as a standard." The American Management Association study also found "reactions of top management, the men developed, other employees and outside consultants..." being given by the companies as evaluative indicators.<sup>2</sup>

The third and last study located concerning specific evaluation practices on an industry-wide basis seems to bear out to a great extent the vexing factors of evaluation as cited by the previous studies reviewed here -- that is, the lack of evaluation of management training programs, few serious attempts of evaluation by industrial concerns and the general difficulty of performing adequate evaluation. Business Week Magazine reported the study by Walter R. Mahler of the Psychology Corporation who was under an Army contract. Mahler's job, as an industrial psychologist, was to gather data from business and industry concerning training and the results to be handed over to the Army as a means of guidance for its own training. According to Business Week the inquiry

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<sup>1</sup>"Research and Information - Evaluating the Results of Management Development Activities," Management News, (Edition No. 5; April 1953), Vol. XXVI, p. 7.

<sup>2</sup>Ibid.

"...turned out to be a general indictment of training research in business."<sup>1</sup>

To get the information Mahler surveyed 253 companies in the United States. Returns came in from 150 companies and out of these Mahler picked thirty companies whose answers to the questionnaire "...showed enough solid information to warrant an intensive study of their methods of training research."<sup>2</sup>

In a thumbnail summary of the results, according to Business Week, the following was revealed:

1. "WHAT HAS INDUSTRIAL TRAINING ACCOMPLISHED?  
Most companies really don't know.
2. "HOW ARE TRAINING NEEDS DETERMINED?  
Not much science to this -- mostly a matter of what the boss wants.
3. "WHICH TRAINING METHODS WORK BEST?  
Many companies have no idea, use trial and error system."<sup>3</sup>

Specifically, Mahler's study found "...that about one in ten companies used any systematic research at all to find out what training was necessary. Only one in forty actually studied the relative merits of the training methods available. As for results of training, the big majority of the 150 companies depend chiefly on somebody's opinion to find out whether a particular training program has been effective."<sup>4</sup>

All this is compelling evidence to Business Week that industrial training methods and evaluation is far from being on scientific footing.

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<sup>1</sup>"Psychologists Give Management a Quiz on Training Methods", Business Week, (August 16, 1952), p. 106.

<sup>2</sup>Ibid

<sup>3</sup>Ibid

<sup>4</sup>Ibid



"...Industry is still far from certain just what constitutes good training."<sup>1</sup>

Other Evaluative Endeavors with Management Education  
and Development Programs in Industry

Merrihue and Katzell<sup>2</sup> in the Harvard Business Review also explore one of the more complex approaches to "measuring performance" that was located in the review of research. At the time Merrihue and Katzell wrote the article, the ERI (Employee Relations Index) was still in its preliminary stages of development and the authors did not deal directly with evaluation of training programs. But, Kirkpatrick<sup>3</sup> cites their idea as being worthy of consideration as a "measuring yardstick" for training effectiveness.

Basically, the ERI may be described as a measurement of that which is common to a number of different personnel statistics. The statistics all being symptomatic of the extent to which employees accept and perform in accordance with the company policies and objectives. A low or falling ERI "may signify the need to search for weaknesses in manpower management..." say the authors. "A high or rising ERI lends support to existing practices and encourages further improvement along the same lines."<sup>4</sup>

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<sup>1</sup>"Psychologists Give Management", Business Week, p. 107.

<sup>2</sup>Willard V. Merrihue and Raymond A. Katzell, "ERI - Yardstick of Employee Relations", Harvard Business Review, (No. 6; November-December 1955), Vol. XXXIII, pp. 91-99.

<sup>3</sup>Donald L. Kirkpatrick, "Techniques for Evaluating Training Programs", Journal of American Society of Training Directors, (No. 2; February 1960), Vol. XIV, p. 31.

<sup>4</sup>Merrihue and Katzell, "ERI - Yardstick", pp. 91-92.

Specifically the ERI implemented at the General Electric Company brought into play a set of indicators registering hourly employees insofar as:

1. "Periods of absence.
2. "Separations (all types).
3. "Initial visits to the dispensary for occupational reasons.
4. "Suggestions submitted through the suggestion system.
5. "Actions incurring disciplinary suspension.
6. "Grievances submitted through the formal grievance procedure.
7. "Work stoppages.
8. "Participation in the insurance plan."<sup>1</sup>

The statistical calculations are not necessary for explanation of the idea, but out of some thirty-three proposed indicators, the above eight were selected because of their "convenience, objectivity and demonstrated relationship to a general factor."

While the above index is attempting to measure "employee relations", it is conceivable that a similar set of indicators could be set up in a particular situation which would give somewhat of a measurement of effectiveness of a management education and development program. However, the "contamination" factor, would necessarily have to be reduced or in some way taken into account as an uncontrolled factor.

Merrihue and Katzell<sup>2</sup> list a number of points that should be con-

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<sup>1</sup>Merrihue and Katzell, "ERI - Yardstick", pp. 94-95.

<sup>2</sup>Merrihue and Katzell, "ERI - Yardstick", p. 93.

sidered in choosing the indicators or criteria which go into the index.

These again, perhaps could have application to a set of training effectiveness criteria.

1. Each statistic or indicator should reflect behavior that is somewhat optional on the part of the employees. For example: "absenteeism" would be a suitable criteria but "layoffs" would not.
2. The behavior should have implications as being either in accord with the objectives of the business or at variance with such objectives.
3. The figures should be applicable and comparable for employees in a wide variety of work situations. Production data, according to the authors, is rarely suitable.
4. For practical reasons, the statistics should be relatively easily available and be subject to accurate determination for computation purposes.
5. The authors suggest six to ten indicators as being desirable meeting the above standards.

The second General Electric study, later and as yet unpublished, was obtained from a representative of General Electric. It is entitled "The Observed Changes Inquiry" and makes very elaborate use of a fifty item questionnaire.

The program evaluated was General Electric's three month "Advanced Management Course". As Sorensen<sup>1</sup> spells out, in General Electric's eyes there are three levels of evaluation:

1. "Immediate" - The feelings and attitudes of men attending the Course, their immediate evaluation of it, their intentions for the future possible shifts in values or attitudes during or shortly after the Course, content knowledge gained.

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<sup>1</sup>Olav Sorensen, "The Observed Changes Enquiry", (Crotonville, New York: The General Electric Co.; 1958), Unpublished mimeograph study, p.2.

2. "Intermediate" - Has the graduate changed in his behavior, and sustained a change in his behavior for some time after the end of the course -- say a year -- back in the environment from which came? What kinds of changes have occurred? Is he aware of such changes? What do others with whom he works see? What does his manager see? What do his men reporting to him see? Is this change in behavior seen by himself and others...
3. "Ultimate" - What are the results of such changes, if any, in behavior? Do they affect business results in such a way as to make it evident that ... the components these men manage have moved closer to their business objectives."

And Sorensen says the General Electric inquiry is focused at the second or "intermediate" level. This is important only to the extent that a questionnaire technique may be used in evaluation.

Two groups were given questionnaires one year after completion of the course. The groups were graduates of the "Advanced Management Course", and a control group of non-graduates, but who were next scheduled to attend the course. Each graduate and non-graduate was sent six like questionnaires, one to be used by himself, two questionnaires to be given to men reporting to him, two questionnaires given to peers to fill out and one questionnaire given to his supervisor. Personal anonymity of the rater was promised.<sup>1</sup>

Thus the "intermediate" evaluation was evolved through a "contrast and comparison" of graduates and non-graduates, as seen and reported through:

1. Themselves (looking at self)
2. Men reporting to them (looking up)

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<sup>1</sup>Sorensen, "The Observed Changes", pp. 2-3.

3. Their peers (looking sideways)

4. Their managers to whom they reported (looking down)

A few words about the questionnaire: twenty-five of the fifty items on the questionnaire were selected with the intention of tapping "the work-centered aspects of managing, the planning, organizing, integrating and measuring". The other twenty-five items were intended to tap three personal attributes "considered in literature about managers to be important . . . These were 'Guts' or items referring to drive, force or initiative; 'Grace', items of social skill and personal pleasantness; and 'Grey Matter', items of knowledge or analytical approach."<sup>1</sup>

Results were tabulated from 122 questionnaires returned by graduates, 159 questionnaires from non-graduates and 1,274 returns from those looking "up, sideways or down" on graduates and non-graduates. This was a 53 percent usable return. Lastly, a very brief and general summary of many pages of Sorensen's<sup>2</sup> findings indicate that:

1. "...there was no overwhelming tendency to attribute changes in graduates to the Advanced Management course -- or any part of it. The changes were observed more frequently in graduates than in non-graduates but were attributed to the personality of the man, the impact of his manager, the changes in organization structure, the pressure from his peers and the revolt of those working for him.
2. "When the Advanced Management Course was considered a major or contributing factor, the contact with other participants was most frequently stressed.
3. "Being absent from the job in itself was considered valuable ... as an opportunity to mull over long

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<sup>1</sup>Sorensen, "The Observed Changes", pp. 5.

<sup>2</sup>Sorensen, "The Observed Changes", p. 40.

continuing problems ... also to introspect and work out new values and purposes ... Some were grateful for the change and rest.

4. "What was taught tends one year later to be seen as indistinguishable from what was received from many other sources. . ."

#### The B. F. Goodrich Company Study

Goodacre<sup>1</sup> describes a study which also tries to go beyond mere knowledge obtained from a training program and into the area of job performance. The research was done at the B. F. Goodrich Company with the 800 people eligible for training divided randomly into two groups of 400 each, one group to serve as the experimental (trained) and the other as the control (untrained group). Statistical "t" tests were used to compute any significant differences between the groups.<sup>2</sup>

Goodacre's results appear to have most application in the B. F. Goodrich situation so will not be reviewed here. However, his objectives and the criteria used to measure these objectives probably have wider application and seem desirable for inclusion here. Table 3 summarizes the "Objectives and Criteria for Testing the Results of the B. F. Goodrich Training Program".<sup>3</sup>

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<sup>1</sup>Daniel M. Goodacre, III, "The Experimental Evaluation of Management Training: Principles and Practice", Personnel, (No. 6; May 1959), Vol. XXXIII, pp. 534-538.

<sup>2</sup>Goodacre, "The Experimental Evaluation", pp. 536-537.

<sup>3</sup>Goodacre, "The Experimental Evaluation", p. 538.

TABLE 3

Objectives and Criteria for Testing the  
Results of the B. F. Goodrich Training Program

Objectives - To achieve significant improvement in:	Criteria (Measure)
Attitudes toward the company	Attitude scale
Attitudes toward the employees	Attitude scale
Job satisfaction	Attitude scale
Self confidence in dealing with:	Attitude scale
Understanding human behavior	
Decision making	
Selecting employees	
Developing and improving employees	
Job evaluation	
Knowledge of:	Achievement tests
Human behavior	
Decision making	
Selecting employees	
Developing and improving employees	
Job evaluation	
Job Performance:	Ratings by immediate superior
Handling behavior	
Decision making	
Selecting employees	
Developing and improving employees	
Job evaluation	
Overall job performance	

However, a final caution is given by Goodacre. It was his experience that ratings by superiors were somewhat biased by the raters knowledge of who was and who was not trained and therefore should be viewed with this reservation of validity.

### The General Motors - AC Spark Plug Division Study

In this piece of research the "interview technique" was used almost entirely, mainly to improve the various management courses being offered on a plant-wide basis. After giving a number of management courses over a thirteen year period, AC Spark Plug Division of General Motors Corporation<sup>1</sup> attempted an exhaustive evaluation via systematic interviews with 243 or 81 percent of the supervisors that had attended the various courses. As a result of the survey, "weak courses" were studied on an intensive basis for possible revision, some were "abandoned completely" and a "new approach" to the same problem was taken on still others.

The questions asked in the personal interviews were:<sup>2</sup>

1. "What courses in management training have you taken in the past ten years or so? (Each supervisor was brought up-to-date through use of his individual training record.)
2. "What were the three most valuable courses?
3. "What reasons can you give for this? Why were they valuable?
4. "What were the three least valuable courses?
5. "What reasons can you give for this? How could they be improved?

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<sup>1</sup>"Management Development Program", (Flint, Michigan: Education and Training Department, AC Spark Plug Division of General Motors Corporation; January 1956), Unpublished mimeographed paper, p. 4.

<sup>2</sup>"Management Development Program", AC Spark Plug, pp. 1-2.



6. "What is your opinion of the last course you took?"
7. "Can you give us a specific way that you have been able to use any of this training?"
8. "What can you suggest to improve any of the courses offered?"
9. "Are there any new courses or subjects you would like to see offered?"
10. "In the final analysis, considering the time, effort and cost that management has put into this training (as well as your own time and effort) have we accomplished anything? Has the training made your work as a supervisor easier for you?"

The AC Spark Plug report makes specific mention that "all answers were strictly voluntary". "The only help or prompting given the supervisor was to bring him up-to-date on his training record."<sup>1</sup>

While the present researcher is concerned mainly with the evaluative techniques used, it is interesting that the 243 men interviewed considered a course called "Knowledge of AC" most valuable with "Pre-Supervisory" and "Supervisory Orientation" courses next most valuable in that order. The "Maintaining Schedules" course was least interesting, as indicated by the interviewees, out of the twenty courses offered and evaluated.<sup>2</sup>

#### The Monsanto Chemical Company Study

This is an example of an effort to evaluate the effectiveness of the Company's "problem solving" conferences, that is the conference agenda was mainly discussing problems of current importance in the plant.

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<sup>1</sup>"Management Development Program", AC Spark Plug, p. 2.

<sup>2</sup>"Management Development Program", AC Spark Plug, p. 3.

In an effort to get answers to the effectiveness of the sessions, the plant used a "three-sided measuring stick";<sup>1</sup>

1. Evaluation of performance of each conference participant on a before-and-after basis by each participant's supervisor.
2. Attitude surveys of the participants.
3. The voluntary attendance at the scheduled meetings.

To evaluate the performance each superior rated his subordinates attending the sessions on "seventeen performance factors". Appraisal of the same factors a year later showed a "pronounced improvement in interdepartmental cooperation". The later appraisal also indicated that the foremen and other supervisors in the program increased their "knowledge of company policies" and "learned to express themselves more effectively".

The attitude survey used as a part of the evaluation was to get the participants' thinking on such items as communications and inter-departmental cooperation, also to get their general reactions to the training program. One result, according to the report, was that ninety-six percent of the conferees believed the training was "helpful to them".<sup>2</sup>

Finally, on the third measure of effectiveness by Monsanto, a close record was kept of attendance which had been set up on a voluntary basis. They found "sustained interest" in their program by the steady upward trend in attendance from the first meeting and as the program was continued.<sup>3</sup>

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<sup>1</sup>Louis A. Allen, "Evaluating a Management Development Program", Management Record, (No. 7; July 1954), Vol. XVI, pp. 264-265.

<sup>2</sup>Allen, "Evaluating", p. 265.

<sup>3</sup>Allen, "Evaluating", p. 265.

### The Meadow and Parnes Study

In the only study located which has to do with "creative problem solving", Meadow and Parnes<sup>1</sup> report a thirty hour course which has to do with Osborn's<sup>2</sup> brain-storming and related methods. While the study is performed with experimental and control groups (fifty-four in each group) of students at the University of Buffalo, it may have application to industrial management groups. Hence it is included here.

Three hypotheses were tested in Meadow and Parnes' study: "The method employed (creative problem solving) in the course would produce a significant increment (a) in quantity of ideas, (b) in quality of ideas, and (c) in three personality variables -- need achievement, dominance and self-control."<sup>3</sup>

A battery of nine test measures were given to the matched experimental and control groups at the beginning and end of the course:

1. "AC Test of Creative Ability (quantity and quality)
2. "Plot Titles Low (quantity and quality)
3. "Gilford Unusual Uses (quality)
4. "Apparatus Test (quality)
5. "Thematic Apperception Test - Originality (quality)
6. "Thematic Apperception Test - Need Achievement
7. "California Psychological Inventory - Dominance Scale
8. "California Psychological Inventory - Self-Control Scale
9. "Wechsler Adult Intelligence Scale - Vocabulary"<sup>4</sup>

So much for the tests as evaluative techniques. In passing, Meadow and Parnes summarize their results: "(a) The experimental as compared with the control group attained significant increments on the two measures

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<sup>1</sup>Arnold Meadow and Sidney J. Parnes, "Evaluation of Training in Creative Problem Solving", Journal of Applied Psychology, (No. 3; June 1959), Vol. XLIII, pp. 189-194.

<sup>2</sup>Alex F. Osborn, Applied Imagination, Principles and Procedures of Creative Thinking, (New York: Charles Scribner's Sons; 1957).

<sup>3</sup>Meadow & Parnes, "Evaluation of Training", p. 193.

<sup>4</sup>Meadow & Parnes, "Evaluation of Training", p. 190.

of quantity of ideas; (b) the experimental as compared with the control group attained significant increments on three of the five measures of quality of ideas; (c) the experimental as compared with the control group showed a significant increment on the California Psychological Inventory Dominance scale."<sup>1</sup>

### The Sharp and Dohme Company Study

An interesting technique, not heretofore mentioned as being used by an industry, is an adaptation of the "sociometric rating" applied to an industrial training program at Sharp and Dohme, Inc. Rich<sup>2</sup> used sociometric ratings by the conference group as an indication of personal relations within the group. He believes this may also have a bearing upon their work relations outside of the conference group, e.g. day-to-day work communications. According to Rich something should happen to the individual during his experience in the program in addition to the facts, techniques and skills which he learns from the course content. And, "the sociometric method seemed to offer a way of testing this belief."

The researcher had several conference groups of fifteen persons made up of men from four or more major divisions of the company. Each man made sociometric ratings of his conference group. Each group had the opportunity to rate their fellow conferees four times:

1. The "friendship test" the first day, i.e.
  - a. This person is one of my best friends.
  - b. This person is a friend of mine.
  - c. This person seems all right to me.
  - d. This person may be all right but I don't know.

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<sup>1</sup>Meadow and Parnes, "Evaluation of Training", p. 193.

<sup>2</sup>Joseph M. Rich, "Measuring Supervisory Training: The Sociometric Approach", Personnel, (No. 1, January-February 1952), Vol. XXIX, p. 79.

- e. This person I would not enjoy having as a friend.
  - f. This person I would not want as a friend of mine.
2. The "work companionship test" the second day, i.e. substituting "work companionship" as a criteria for judgment instead of "friendship".
  3. The "friendship test" repeated next to the last day of the fifteen conference series.
  4. And the "work companionship test" repeated on the last day of conferences.

Results of the first two tests were reported back to the group members during the second week of conferences in such a way so that each could tell how the group felt toward him but could not identify other conferees' results on the ratings.

Without going into detail reporting the specific results of Rich's evaluation and the positions and changes of various members as the ratings were made, Rich's conclusion that "the sociometric method had been shown as a useful tool in gauging group atmosphere and in measuring some aspects of group development "is sufficient to indicate the possibilities of this technique. Rich says that perhaps this technique can be used to "...help predict the future success of an individual in getting along with others on the job?" Or perhaps "...those who are not readily accepted can be helped to gain acceptance and thereby make themselves and the talents they possess more useful in the organization?"<sup>1</sup>

"Learning," submits Rich, "which takes place during the course is by no means limited to the topics scheduled for discussion. The other changes which take place may have an even greater influence upon the

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<sup>1</sup>Rich, "Measuring Supervisory Training", p. 83.

quality of supervision and the quantity of production. These changes are primarily in the area of group relations," concludes Rich.<sup>1</sup>

### The Savitt Study

In quest of the effectiveness of management education and development in a government organization, Savitt<sup>2</sup> utilizes a before and after questionnaire for evaluative purposes. Although the study was in a government organization, the evaluative techniques would likely be applicable to industrial situations and thus desirable for review here. In this instance the sample for study was thirty-seven middle-management level people representing engineering, accounting, administrative, maintenance, police and educational governmental functions.

Savitt<sup>3</sup> administered a questionnaire on the first day of the program and a like questionnaire at the end of the ten-week program to determine the increase in "knowledge of management principles and practices". Additional information was obtained from the conferees with respect to age, formal schooling, supervisory and administrative experience and mental ability (Otis test).

The findings of Savitt<sup>4</sup> are summarized in Table 4.

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<sup>1</sup>Rich, "Measuring Supervisory Training", pp. 83-84.

<sup>2</sup>Morris A. Savitt, "Is Management Training Worthwhile?", Personnel, (No. 2; September-October 1957), Vol. XXIV, p. 79.

Morris A. Savitt, "The Retention of Management Training", Journal of the American Society of Training Directors, (No. 2; February 1959), Vol. XIII, p. 28.

<sup>3</sup>Savitt, "Is Management Training Worthwhile?", p. 80.

<sup>4</sup>Savitt, "Is Management Training Worthwhile?", p. 82.

TABLE 4

Effect of Various Factors on Test Scores of Trainees

Factors Compared	Group with Previous Training* 13 Men	Group with No Previous Training* 24 Men	Difference Between Groups	Significance of Difference ("t" test)
Quiz Score (Max. 90)				
First Test	58.9	53.7	5.2	Significant
Second Test	67.5	61.7	5.8	Significant
Improvement in Score	8.6	8.0		Significant
Age **	40.0	39.5	.05	Not Significant
Formal Education**	15.6	12.2	3.4	Probably Significant
Administrative and Supervisory Experience**	12.0	10.3	1.7	Not Significant
Mental Ability***	63.0	48.0	15.0	Highly Significant

\* Figures given are averages for the group.

\*\* Years.

\*\*\* Otis Gamma raw score.

According to Savitt's use of the "t" test, the difference between the test scores of the two groups, both on the first use of the test and the second use, was significant. But this significance is not likely because of the "age" or "administrative and supervisory" factors. More likely, the difference between the two groups' scores was due to "formal education" and "mental ability" which turned out significant in Savitt's experiment.

And finally, following Savitt's conclusions, which he indicates are highly tentative, "intelligence" and "management training" had greater influence on learning as indicated by the "management principles and practices" test scores than did "formal education", while "age" and "job experience" apparently had none.<sup>1</sup>

### Summary

1. Management education and development programs receive formal or planned attention in most companies, large and small, and are provided for all levels of management, as revealed in industry-wide surveys by the American Management Association<sup>2</sup> and Dun's Review and Modern Industry Magazine.<sup>3</sup> Fifty-five percent of the surveyed industries are quoted as being "very pleased" or "satisfied" with the results of their training.

Significantly, courses, conferences and meetings of various determination are relied upon heavily as the method of management education and development in these industries. At the time of the surveys, "people-centered", "money-centered", and "overall" type management courses were most offered as subject matter in these industries' programs.

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<sup>1</sup>Savitt, "Is Management Training Worthwhile?", p. 82.

<sup>2</sup>Current Practices in the Development of Management Personnel, (New York: American Management Association; 1955), p. 35.

<sup>3</sup>"Does Management Training Pay Off?", Dun's Review and Modern Industry, (No. 11; November 1959), Vol. LXXI, Unpagged reprint.



2. Huneryager<sup>1</sup> in his survey of purposes of university programs for industrial management people concludes that the "broadening" and "group association" concepts are the "outstanding values of university programs". While these university programs do not produce managers or executives, they do sharpen talents and are frequently used to supplement in-company programs, it was reported. A more detailed Opinion Research Corporation<sup>2</sup> study on university programs for management people concurs with Huneryager<sup>3</sup> that the overriding objective of the company use of these programs was to instill "... a new breath of vision".
  
3. Few studies were located which gave an industry-wide picture of evaluation practices. None were comprehensive in the sense of covering adequately specific evaluation practices. Most revealed only miscellaneous data and indictments about the lack of evaluation.  
  
A Bureau of National Affairs<sup>4</sup> questionnaire found only one-fourth of the companies surveyed using specific training evaluation techniques. Another American Management Association<sup>5</sup> study revealed company "satisfaction" with management

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<sup>1</sup>S. G. Huneryager, "An Evaluation of University Executive Programs", Journal of the American Society of Training Directors, (No. 3; March 1960), Vol. XXIV, pp. 37-42.

<sup>2</sup>Getting Real Value from Executive Development Programs at Universities, Opinion Research Corporation, (1958), pp. 34-35.

<sup>3</sup>Huneryager, "An Evaluation of University Executive Programs," pp. 37-42.

<sup>4</sup>Foreman Training, Bureau of National Affairs, Inc., p. 11.

<sup>5</sup>"Research and Information - Evaluating the Results", Management News, p. 8.

education programs but indicated their opinion was based on evaluation methods they considered inadequate. Mahler<sup>1</sup> found that about "one in ten" companies used any systematic research to find out what training was necessary, only "one in forty" studied the merits of their training methods, and the "big majority" of the survey indicated they used "somebody's opinion" as to the effectiveness of their training.

4. The evaluation of "human relations" type management programs apparently is a favorite with industrial trainers. Several varied attempts are reported in the literature. The foremost located, in terms of elaborate research procedures used and most often cited in the literature, was the Ohio State - International Harvester Company study by Fleishman, Harris and Burt<sup>2</sup>. They used a 150 item questionnaire designed to measure leadership attitudes in foremen. The questionnaire was given before, immediately after and sometime after the training program to the control and experimental groups.

The Bell Telephone Company study by Stroud<sup>3</sup> was similar to the Ohio State study in the research techniques used and in that attempts were made to ascertain improved performance

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<sup>1</sup>Psychologists Give Management", Business Week, pp. 106-107.

<sup>2</sup>Edwin A. Fleishman, Edwin F. Harris and Harold E. Burt, Leadership and Supervision in Industry: An Evaluation of a Supervisory Program, (Columbus, Ohio: Ohio State University; 1955), pp. xli and 110.

<sup>3</sup>Peggy V. Stroud, "Evaluating a Human Relations Training Program", Personnel, (No. 6; November-December 1959), Vol. XXXVI, pp. 52-60.

and organizational effectiveness resulting from the training. But both studies concurred in the inadequacy of the "self rating" type of test directly after a program to determine increased performance and effectiveness.

The Ohio State Study<sup>1</sup> was interesting in that four external organizational criteria ("absenteeism, accidents, grievances and labor turnover") were used as a measure of improved organizational effectiveness. A Detroit Edison study reported by Seashore<sup>2</sup>, on the other hand, used a morale survey with extensive "feedback" to trainees, their supervisors and other employees, as a measure of organizational effectiveness.

Kirkpatrick<sup>3</sup> tested the results of his human relations training program for foremen with "comment sheets" after the program -- to reveal their "feelings" or like of the program. Pre and post test scores on a "human relations test" were used to ascertain increased knowledge from the program. And correlation of these "test" scores with job performance back at the trainee's company was performed -- but with apparently incon-

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<sup>1</sup>Fleishman, Harris and Burt, Leadership and Supervision, pp. xxii and 110.

<sup>2</sup>Stanley E. Seashore, The Training of Leaders for Effective Human Relations (Paris, France: United Nations Educational Scientific and Cultural Organization; 1957), p. 43.

<sup>3</sup>Donald L. Kirkpatrick, "Evaluating Human Relations Programs for Industrial Foremen and Supervisors", (Madison, Wisconsin: Unpublished Doctoral Thesis Submitted at the University of Wisconsin; 1954) p. 144.

clusive relationships. Soik's<sup>1</sup> study at the Allen Bradley Company was patterned after Kirkpatrick's with the addition of "group participation" as an evaluative indicator.

To evaluate the effectiveness of training administration and training methods and to determine future training needs, the Proctor and Gamble Company<sup>2</sup> employed a systematic and intensive interview program with foremen candidates and with the candidate's supervisors.

In the last human relations training evaluative attempt located, Osterberg and Lindbom<sup>3</sup> used a delayed questionnaire, (three years after program) sent to program participants, in an effort to determine any lasting behavioral or organizational change resulting from the training.

5. Several other evaluative endeavors with management training and development programs, other than university conducted or "human relations" type, were noted in the literature. Three studies available, two from the General Electric Company<sup>4</sup>, and

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<sup>1</sup>Nile Soik, "An Evaluation of a Human Relations Training Program", Journal of the American Society of Training Directors, (No. 3; March 1958), Vol. XXII, pp. 34-49.

Nile Soik, "An Evaluation of a Human Relations Training Program, A Follow Up To", Journal of the American Society of Training Directors, (No. 7; July 1958), Vol. XXII, pp. 31-33.

<sup>2</sup>Seashore, The Training of Leaders, p. 43.

<sup>3</sup>Wesley Osterberg and Theodore Lindbom, "Evaluating Human Relations Training for Supervisors", Advanced Management, (No. 9; September 1953), Vol. XVIII, pp. 26-28.

<sup>4</sup>Herrihue and Katzell, "ERI - Yardstick", pp. 91-99.

Sorensen, "The Observed Changes Enquiry", p. 48 and appendices.

the other performed at the B. F. Goodrich Company<sup>1</sup>, reported attempts to measure changed behavior or improved performance as a result of management training. In the one case an intricate composite index of various personnel statistics was used as a basis of evaluation. The second attempt utilized control and experimental groupings and series of questionnaires, one year after the program, to the program participants, their peers, those they supervised and the participant's supervisors. The Goodrich evaluators similarly used questionnaires, but only those ratings by superiors. Additionally, a series of participant attitude and achievement tests were employed in the Goodrich study.

Savitt<sup>2</sup> went into an involved experiment to measure increased knowledge, as a result of management training, and then interestingly correlated before and after test scores with the participants' age, formal education, supervisory experience and tests of mental ability.

The Monsanto Chemical Company<sup>3</sup> held a series of "plant problem" conferences which were also considered training ground for the participants. Evaluation techniques included the superiors' rating of participants' performance on the job on a before and

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<sup>1</sup>Goodacre, "The Experimental Evaluation", pp. 534-538.

<sup>2</sup>Savitt, "Is Management Training Worthwhile?", pp. 79-82.

Savitt, "The Retention of Management Training", pp. 28-33.

<sup>3</sup>Allen, "Evaluating a Management Development Program", pp. 264-265.

after basis, a participant attitude survey, and attendance at the voluntary conferences.

Rich's study<sup>1</sup> at the Sharp and Dohme Company provided an interesting adaptation of the "sociometric" technique. Conferencees rated each other. Through a system of confidential interviews, where the results were revealed to each participant individually, and through continued inter-reaction in conferences, the leader attempted to improve inter-personal relations of the group, inside and outside the conference room. Improvement resulting from the conferences was noted on repeat "sociometric" ratings during and at the end of the program.

Meadow and Parnes<sup>2</sup> report the only experiment located which strives to measure results of a "creative problem solving" course made popular by Osborn<sup>3</sup> and his "brainstorming" procedure. Experimental and control groups were employed with a battery of nine test measures including tests of creative ability, apperception and intelligence.

And lastly, the General Motors - AC Spark Plug Division Study<sup>4</sup> was the only piece of research available which reported an attempt to comprehensively evaluate a number of management courses given over several years on a plant-wide basis.

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<sup>1</sup>Rich, "Measuring Supervisory Training", pp. 78-84.

<sup>2</sup>Meadow and Parnes, "Evaluation of Training, pp. 189-194.

<sup>3</sup>Osborn, Applied Imagination, Principles and, pp. xxiii and 379.

<sup>4</sup>"Management Development Program", AC Spark Plug, p. 14 and appendices.

Extensive use of structured personal interviews with the participants of the various programs was the evaluative technique in this case.

This chapter reflects the many evaluative techniques used by industry. It also shows the lack of standard methods used in evaluation. In the examples cited the standard objective criteria and the evaluative techniques are not complete, but reflect the piecemeal approach outlined in the first part of this study. It is interesting to note that many industries are evaluating supervisory training, but that such evaluation cannot be termed valuable in establishing training objectives. None of the industries studied used performance appraisal with standard performance criteria as a basis of evaluating of training.

## CHAPTER IV

This chapter will deal with the conclusions drawn from the foregoing chapters. The purpose, principles, techniques, methods, and results of evaluation will be reviewed. In addition, a standard evaluative technique with proposed evaluation criteria will be discussed. It is to be noted that the basic areas of responsibilities and the general characteristics of the supervisor are intended as guides to effective supervisory appraisal in evaluating training which the supervisor has been given.

### Conclusions

1. Generally the authorities in the literature of evaluation, agree that the basic purpose of evaluation should be to improve and achieve effectiveness in training.
2. These principles, or guide-lines, should be considered by the evaluator of industrial management training programs:
  - a. Evaluation usually offers the greatest potential benefit if conducted over a period of time and a built-in part of the total training process.
  - b. Programs with specific objectives can most easily be evaluated.
  - c. Variables which may influence the results of evaluation should be isolated and taken into consideration.



3. Evaluation of management training programs should be performed by an orderly, yet flexible, process. These steps are recommended:

- a. Define the problem to be studied or evaluated.
- b. Re-define or formulate into measurable terms the objectives the training is to accomplish.
- c. Identify a measurable or test situation where changes may be noted.
- d. Apply the measure or evaluative method.
- e. Analyze and interpret the results.
- f. Improve or modify the management training program.

4. A comprehensive evaluation of a management training program is encouraged. Evaluation endeavors at several of these levels will provide evidence upon which improvements or greater effectiveness of programs might be achieved:

- a. The method of presentation of the training program, e.g. evaluation of conference techniques, conference leaders.
- b. The participants' progress during the training program.
- c. The feeling of participants about the training program.
- d. The learning of participants as a result of the training program, e.g. certain management principles, supervisory knowledge.
- e. The behavior of participants as a result of the training program, e.g. different actions back on the job resulting from the program.
- f. The results, effect or impact on the group, inter-group relationships or organization as a result of the training program.

5. Management training practitioners in about half the industries

reporting, are aware that effective evaluation is a continuous process as the theorist suggests it should be. The companies report that they do plan for and perform evaluation of some focus or purpose and with some method regularly before, during, directly after and some time after their management training and development programs.

6. In the experiments reported in the literature concerning the evaluation of management training and development programs, several evaluation methods appear workable with, of course, the inherent limitations various situations may present. In most cases, the evaluator should seek to isolate all "contamination" factors which may influence the result of using any of the following methods.

- a. Some form of test, designed to measure the course or content material to be imparted as a result of the program, given before, during, immediately after and some time after the program. (However, there is some indication in the reported studies on "human relations" programs that the "self-rating" type of test given directly after a program has serious inadequacies in determining increased managerial performance or effectiveness as a result of the training.)
- b. External organizational criteria, e.g. absenteeism, accidents, grievances, labor turnover, as a measure of improved organizational effectiveness as a result of the management training program.
- c. Morale, organizational attitude or communications type of surveys to determine improvement in the participants' work groups.
- d. "Comment" questionnaires of various designs after the program to ascertain the participants' like of or benefit from a program.

- e. Group participation and/or the attendance at a series of conferences which are held on a voluntary basis.
  - f. Systematic interviews with program participants and/or their supervisors on the merits of the program.
  - g. Systematic observation of the performance of the management person back on the job after the program.
  - h. Tests of various designs and purpose given on a before and after basis, to control and experimental groupings.
  - i. A composite index of selected personnel statistics, the index movement intended to correspond with the desired changed behavior or improved performance of the managerial group as a result of their training.
  - j. Control and experimental groupings along with a series of related performance inquiry type questionnaires, one year after the program to the participants and/or their peers, those they supervised and the participants' supervisors.
7. As revealed in this study, questionnaires of various design and purpose are the most often used method of evaluation. Questionnaires designed with the purpose to assess the feelings or like of a program and the benefits of a program are the type most frequently used. Most questionnaires are given to the participants or manager in the program. Somewhat in less usage is the type to be filled out by the managers' supervisors. And a very few ever are used to question the managers' employees or the managers' superiors.
8. Course material information tests are also frequently used on a before, during and directly after the program basis, but

rarely used some time after the program to determine the lasting effects, if any, of the training program.

9. Group participation and/or attendance at a voluntary series of conferences is often used as an evaluative measure.
10. Systematic observation of participants' actions on the job after the program is also frequently used as an evaluative method by the companies represented in the survey.
11. However, a number of the other evaluation methods and research techniques expounded in the literature are infrequently used, as revealed by this study. They are:
  - a. Check of consumers' attitude toward service or product rendered by participants' departments.
  - b. Control and experimental groupings.
  - c. Morale, organizational attitude or communications surveys in the managers' work groups.
  - d. Use of records on absenteeism, accidents, grievances, labor turnover and the like in the participants' departments.
12. No companies offered revolutionary evaluative ideas or research methods other than variations of those found in the literature.
13. Few published studies could be located which attempted to give an industry-wide picture of evaluation practices or status of evaluation. None were comprehensive in the sense of covering adequately the methods or effort in the area of evaluation. But all seemed to be using inadequate data and publicizing

the allegedly found general lack of effective evaluation of management training programs. On the contrary, this more comprehensive study, in terms of evaluation practices and effort, shows industry is engaged to some degree in evaluation activities and is somewhat cognizant of what effective evaluation includes.

14. Indications are that at least a static position will be maintained and perhaps even a slight increase in evaluative effort will be made in the future. Many industries reporting the higher amounts of time and budget for evaluation, plan also to increase their evaluation activities in the future.

#### Submission of a New Evaluative Method

Based upon the conclusions drawn from this study, a new method of evaluation will be developed. With due consideration of the evaluative methods now in use and of the theoretical aspects of evaluation, at this time a standard method of evaluation, appraisal and potential growth will be presented. Although this method may not be the answer to all evaluative situations, it will be a systematic approach to the improvement of performance by the first line supervisor through the use of effective training with the desired attainment of company objectives.

#### Evaluation Criteria

Throughout this study reference has been made pointing to an objective method of evaluation based upon appraisal of performance

in specific areas of a supervisor's position. Yoder suggests the most frequent objective criteria of evaluation to be:

1. Increased output.
2. Reduced time to turn out a unit of production.
3. Reduced training time.
4. Reduction in scrap, breakage, and supplies used.
5. Improvement in quality of output.
6. Improvement in morale.
7. Reduction in absenteeism, grievances, turnover and accidents.
8. Reduction in overhead and/or burden.<sup>1</sup>

With these criteria in mind let us review a synthesis of responsibilities and characteristics listed in Chapter I with the thought of using these responsibilities and characteristics as the basis for performance appraisal and as a method of objectively satisfying the criteria of training evaluation.

<u>Supervisor's Responsibilities</u>	<u>Objective Criteria</u>
a. Employee Relations	1, 2, 3, 4, 5, 6, 7
b. Maintenance	1, 2, 4, 7, 8
c. Quality	1, 2, 4, 5, 8
d. Production	1, 2, 3, 4, 8
e. Inventory	4, 8
f. Costs	1, 2, 3, 4, 5, 7, 8

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<sup>1</sup>Dale Yoder, H. G. Heneman, Jr., John G. Turnbull and C. Harold Stone, Handbook of Personnel Management and Labor Relations, (New York: McGraw-Hill Book Company, Inc.; 1958).

It is easily noted that appraisal of the standard basic responsibilities of a first line supervisor will satisfy the objective criteria established to evaluate training. This is not to imply this is the only method of evaluation, but it does give the evaluator a systematic approach to the problem of training evaluation.

### Job Specifications

The first line supervisory job specifications if analyzed closely and condensed into a basic form will reflect the synthesized basic responsibilities which are to be used in performance appraisal. Together with the basic responsibilities are the general characteristics to be used in evaluation as outlined in Chapter I. Although appraisal of such characteristics is not of primary concern in this study, it is the intent of the author to show that changes in this area of the supervisor's qualifications will reflect potential danger signals which may be overcome. The appraisal of these characteristics with the appraisal of performance in responsibilities will give an overall picture of potential growth and promotability. They may also be used as a means of determining training objectives.

Thus we have established our basic standard criteria for performance evaluation including the basic responsibilities and characteristics. The relation between performance appraisal in these areas and the evaluation of the training to increase proficiency in these areas then become a standard tool to be used by an evaluator.

### Basic Responsibilities

The basic responsibilities to be used in this method of evaluation

and appraisal are:

1. Employee Relations
2. Maintenance
3. Quality
4. Production
5. Inventory
6. Costs

#### General Characteristics

The appraisal of the following characteristics complete the first objective of performance attainment.

1. Cooperation
2. Initiative
3. Ambition
4. Decisiveness
5. Self-control
6. Dependability
7. Manner
8. Self-expression
9. Job Knowledge
10. Plan and Organize
11. Self-improvement
12. Delegation

#### PERFORMANCE APPRAISAL

The objectives of the Performance Appraisal are:

To evaluate the performance of each management employee



to serve as a medium for (a) performance on the job, (b) improvement of present performance, (c) determining possible training areas, (d) determining individual development needs, (e) evaluation of training, and (f) potential promotion capabilities.

### Performance Improvement Through Experience Training and Development

If performance is below the established standard, a number of methods may be used to raise the proficiency in a specific area. Among the methods utilized are training, development, or experience. Under Training would come supervisory trainee programs, technical courses, management courses and other specific programs. For consideration under the Development method would be coaching on the present job, self-improvement, rotation on other jobs and combinations of these approaches. Experience factors for improvement may be technical, operating, administrative, or all three.

### Overall Performance

A general view of how the supervisor is doing his present job is helpful in the determination of promotability, of potential achievement, and possible replacements in case of promotion or transfer. Although this study is primarily aimed at an evaluative technique of Training, the relative importance of recognizing certain performance aspects of the supervisor cannot be overlooked.

### The Three Appraisal Methods of Evaluating Training

In the first chapter reference was made to the groups who were used to define the supervisor's job. Since we have used these groups to define the supervisor's job it seems relevant to use their services in evaluating the performance of the supervisor. In this proposal the following groups will be used:

1. The Supervisors themselves
2. The Staff Departments
3. The Supervisor's immediate supervisor

At this point let us consider an example of how this evaluative method will operate.

The Performance Appraisal of a supervisor by his immediate superior in consultation with various staff departments will give the administration of training and development a review of the supervisor's performance. If it is felt that improvement in performance is necessary in the area of basic responsibilities, then the training administrator will determine the program to bring performance up to the acceptable standard. In this example the supervisor has been rated substandard in the basic responsibility of costs. His immediate superior after consulting the Accounting Department has found that certain cost reports are not prepared correctly. In addition the effective use of personnel is below standard. Waste control and quality are not up to the acceptable standard. With this information the administrator advises the supervisor's immediate superior as to the action to be taken. In this case a training program is to be started which will cover the areas rated low on the appraisal.

In this study it is not important to determine the training objectives but it is necessary to evaluate its results. For the purposes of this example we have:

1. Through the Selection Process determined the trainable supervisor.
2. Evaluated present performance.
3. Assumed that the training program was adequate to improve performance.
4. Assumed that the supervisor was cooperative and willing to learn.

During the training program, the supervisor's evaluation of the material and techniques will be acquired through tests, surveys, and conferences. However, the merits of the program are not to be derived from the supervisor's evaluation. This evaluation will be used as information and criticism of the present training.

The most important evaluation will be made upon the completion of the program, and this will be a performance appraisal by the immediate superior, and the appraisal by the staff department which gave the information concerning low performance rating. In both appraisals the basic responsibilities as outlined in this chapter will be used. The immediate superior will use the same form with the same responsibilities and characteristics as outlined. However, the staff department will be required to rate the supervisor's performance in the areas where they are in direct contact with the supervisor. In this example the staff department would rate performance in the preparation of cost reports, personnel utilization, waste control and quality. Since the program was directed toward improving performance in these functions, the rating will provide management with a means of evaluating the training. Also the supervisors immediate superior's

appraisal should reflect improvement in the basic responsibility of costs.

This example although very simple gives the general method of evaluating the effectiveness of training. The development of the forms to be used in the appraisals will be the responsibility of the training administrator, and the only control of the forms will be the inclusion of the basic responsibilities and general characteristics of the supervisor on the form to be used by the immediate line superior. All other forms will be related directly to this performance appraisal.

As pointed out in this example the evaluation is based upon objective criteria and specifically upon improved performance.

#### Follow-Up

Now that we have evaluated the training immediately after the training, the follow-up procedure must be started. Training men have learned that with the use of objective criteria in evaluation there may not be immediate improvement in performance and the formulation of hasty conclusions concerning the inadequacy of the training may not be founded in fact. The follow-up appraisals are necessary to reflect factual improved performance. The training - improvement lag may result from the lack of actual incidences which would require the use of the recently assimilated training skill and knowledge. Therefore a check must be made through the follow-up forms.

Follow-up of training should be a continuous process. Not only are we interested in the evaluation of training given to correct certain inadequacies, but also as a means of spotting other areas of substandard performance.

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