California State University, Northridge

EVALUATION OF SELECTED, FORMAL IN-HOUSE SUPERVISORY TRAINING IN THE AEROSPACE INDUSTRY

A thesis submitted in partial satisfaction of the requirements for the degree of Master of Science in Business Administration

by

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January, 1973
Dedicated to

Carol, Caryn, Dana, Mom
and in memory of Dad
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ABSTRACT

EVALUATION OF SELECTED, FORMAL IN-HOUSE
SUPERVISORY TRAINING IN THE
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by

Frank Anthony Ursich

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January, 1973

Statement of Problem

The problem was to examine all aspects of training selected by aerospace firms used to increase the skill levels of potential of existing first-line supervisors, and to analyze the training program graduates' evaluations of the programs.

Hypothesis of Study

The hypothesis of this study is that formal in-house training programs for first-line supervisors in the Greater Los Angeles aerospace industry area do not meet the needs of the participants.
Method of Procedure

Questionnaires were mailed to fourteen large aerospace firms in the Greater Los Angeles area whose names were found in the Training and Development Journal put out by the American Society for Training and Development. Returns were received from ten firms, or 71 percent. Firms were selected based on their professional affiliation with a training society and their high ranking as recipients of Department of Defense prime contract awards. Data contained in this study were derived primarily from the information contained in the returned questionnaires and from research into training literature.

Major Findings

These findings are considered major because they are significant facts regarding training in the selected firms and as such were used as the basis for the conclusions and recommendations of this study.

Course characteristics

In the majority of firms class sizes were small, highly participated, and were "custom" designed.

Training program development and evaluations

In 50 percent of the cases the programs were developed entirely by the training coordinators who used subjective criteria to select training methods and subjects
they considered appropriate. Evaluations of training programs were primarily informal and were conducted by the firms' training coordinators.

Training instructors and participants

In the majority of cases, the training was conducted by a team consisting of a training coordinator and an employee from a line organization who was knowledgeable in the subject(s) being presented. The participants averaged two years of supervisory experience, and 40 percent had some college education with one-fourth of this group holding a degree.

Cost of training

In 90 percent of the participating firms, the training directors did not know, or had questionable estimates on how much it costs to conduct a training program.

Outside assignments and examinations

In 60 percent of the firms outside assignments were mandatory, and in 50 percent examinations or quizzes were used. The graduates found the assignments and examinations of little worth.

Training duration and start times

In 70 percent of the firms training was done on company time. On the average, training involved forty
hours of instruction, and was conducted over several weeks. Training start times were equally divided between mornings and afternoons.

Training session discussions

Although the participants found the discussions interesting, they did not feel the discussions were relevant in helping them with their day-to-day problems.

Test of Hypothesis

By the quantitative criteria established, the mean response value to all questions of 3.77, and the mean response value of 3.70 to selected questions, indicate that the graduates found the training programs exceptional, and the hypothesis was disproved. This does not mean that the graduates went back to their work environments and became successful supervisors.

Recommendations

The following recommendations, hopefully, will increase the probability that a training program will be successful in helping existing or potential supervisors to attain supervisory skills.

Training course content

The training staffs should solicit help from line organization personnel, especially supervisory personnel,
in developing training programs which will make training relevant to the "real world" company environment and needs.

**Training method selections**

To optimize the conditions necessary for effective communication, the training objectives should be carefully studied and considered before selecting a training method or combination of methods.

**Training participation**

Supervisory training should be mandatory for all supervisors when they are hired or when potential supervisors have been identified. Supervisors are then given an equal opportunity to develop the necessary supervisory skills.

**Training costs**

Companies should determine the costs of developing and sustaining a training program to assess the value of training to the firm.

**Class size**

When class sizes are small, training coordinators should take advantage of this condition and become familiar with each participant's background, thereby customizing the training to both the company's and student's needs.
Outside assignments

To optimize the effectiveness of each training session, all training programs should require the student to perform outside assignments to prepare for subsequent sessions.

Training examinations

All companies should give the participants quizzes or examinations during the course or after it is completed to bring discipline and structure to the training situation.

Training evaluation

Training should be evaluated more formally to better assess its contributions to the firm's objectives.

Training instructors

For maximum student benefit, training instructors from line organizations should be selected not only for their expert knowledge in a particular subject, but also for the ability to apply this knowledge to work environments different than their own.

Training start times

If possible, training sessions should begin in the morning before the participant becomes preoccupied with his normal day-to-day problems as a first-line supervisor.
CHAPTER I

BACKGROUND TO STUDY

Historically, the relationship of supervisor and employee has been in constant flux. There has been a change from the master to slave arrangement where the master's power was absolute. Current philosophical trends have led many away from the Protestant Ethic of hard work, with the attendant rejection of the motivations and attitudes of the entrepreneurs in years past.¹ The supervisor-to-employee relationship has become much more complex and delicate. The once absolute authority of the supervisor is gone and there is no uniform philosophy of values. Therefore, the supervisor must become increasingly sophisticated in meeting the current and future production requirements of goods and services.

Beach² offers an evolutionary analysis tracing the nature and method of accomplishing work in which the worker or the employee follows a pattern of status progression when moving through the various modes of producing goods and services. During the economic systems of slavery,

serfdom, guild and cottage, the masters, owners, and merchants had very few personnel problems because their power was unchallenged. The "employees" had very little employment alternatives if they did not find their working conditions satisfactory or acceptable. All these previous production systems have almost completely disappeared because of economic inefficiencies or because of moral pressures. The factory systems of mass production then emerged and the owners found it very difficult to provide the type of direction and guidance needed to achieve production goals. The owners needed professional supervisors to act as their direct agents in carrying out hiring, compensation, discipline, work direction, promotions, and firing. In this capacity, the early supervisor had complete power in carrying out these functions.

Early in the twentieth century, the dictatorial powers of the foreman were diluted by the emergence of personnel departments. These departments began creating policy statements concerning areas of employment that were once strictly the purview of the foreman. Supervisors' work loads began to lessen to the extent that compensation, training, benefits, and safety began to be administered by the personnel department. This factor has lessened the foreman's responsibility for establishing guidelines or policies for these areas, but the need to get work done through others was still very much in evidence.
The first-line supervisor or foreman occupies a unique position in a company. He is manager in the sense that he must plan, organize, staff, direct, and control; however, the people he supervises are usually nonprofessional. The needs, wants, and motivations of these employees may, and usually are, very different than professional type employees. Nonexempt/hourly employees usually have less upward mobility and perform more narrowly defined jobs. They usually have less formal education and tend to get most of their ego satisfaction through off-the-job activities. Another unique factor about the foreman/first-line supervisor is that he possesses many of the same characteristics that the employees he supervises possess--more so than the level of supervision that is immediately above him or higher. The first-line supervisor is a receiver, translator, and transmitter of all prior management decisions. In this capacity, he is left to his own devices, within parameters, to produce a product or provide a service. The alternatives of action have been varied, costly, and sometimes ineffective. A possible reason for these inefficiencies is that many first-line supervisors in industry moved into their supervisory roles without the proper background or training.

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3 Ibid., p. 464.

excellence in performing very narrow task assignments has overshadowed the need for the identification and development of much broader and different skills.

Chapter II delineates the plan of study which includes overall objectives, method of procedure, scope and data parameters, study limitations, and a chapter sequence plan.
CHAPTER II

STUDY DESIGN

Recognizing that certain cost inefficiencies are caused by selecting supervisors on the basis of their technical skills ("halo effect"), many aerospace firms have established formal in-house training programs.

Hypothesis of Study

The hypothesis of this study is that formal in-house training programs for first-line supervisors in the Greater Los Angeles aerospace industry area do not meet the needs of the participants.

Statement and Analysis of Problem

The problem was to examine all aspects of training selected aerospace firms used to increase the skill levels of potential or existing first-line supervisors, and to analyze the training program graduates' evaluations of the programs.

Definitions

This section contains definitions of personnel titles that occur throughout the paper.
First-line supervisor.—The first-line supervisor has nonexempt/hourly personnel reporting to him. The training programs were primarily designed for this level of supervision.

Training program participant or graduate.—Program participants or graduates are first-line supervisors who have completed training.

Training program directors or coordinators.—Program directors or coordinators are members of the training staff who have the prime responsibility for establishing and maintaining training programs in a firm.

Purpose of Study

The purpose of this study is to provide information that will help industrial training personnel to develop, maintain, and evaluate training programs for first-line supervisors.

Scope of Investigation

By use of questionnaires, certain information regarding specific training practices used by selected aerospace firms in the Greater Los Angeles area was studied. Items for consideration were training objectives, methods, custom programs, packaged programs, training instructors, participant data, cost factors, duration and frequency of
training, outside assignments, examinations, and the training graduates' evaluations of programs.

Nature and Source of Data

The data contained in this study are both qualitative and quantitative. Data were obtained from two sources: (1) The training directors/coordinators provided primarily qualitative descriptive data with some quantitative data. This information dealt with training factors listed under the scope of investigation. (2) The training graduates/participants provided primarily quantitative data with some qualitative information. The information provided from this source helped evaluate the training programs and dealt with the following: (a) organization and administration of training; (b) presentation of material; (c) discussion; (d) course assignments and examinations; (e) general topics. After each of the above categories (a through e) of training study a space was provided on the questionnaire for the participant to make recommendations or general comments.

Method of Procedure

Several steps were taken to obtain the data required for program description and evaluation. The following describes instrument development, rationale for determining samples, training personnel contact, and questionnaire distribution and follow-up.
The following procedure was used to develop sound questionnaires which would ensure efficient collection and analysis of data.

Analysis

The writer made a bibliographical and an industrial/educational analysis of the various types of instruments in use. This provided basic background information necessary to construct the instruments used in this study.

Construction

Two questionnaires were developed, taking into consideration data objectives and preparation time limitations (for training personnel and graduates). Descriptive data were required from the training personnel, and an open-ended questionnaire was developed to yield the appropriate information most efficiently. Evaluative data were required from the training graduates and a primarily quantifiable questionnaire (question values numbered 1 through 5) was designed for this purpose. Criteria for determining favorable/unfavorable responses to this questionnaire were as shown on the following page.
<table>
<thead>
<tr>
<th>Program Effectiveness</th>
<th>Response Value</th>
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<tbody>
<tr>
<td>Excellent</td>
<td>$4.0 &lt; 5.0$</td>
</tr>
<tr>
<td>Exceptional</td>
<td>$3.5 &lt; 4.0$</td>
</tr>
<tr>
<td>Good</td>
<td>$3.0 &lt; 3.5$</td>
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<tr>
<td>Average</td>
<td>$2.5 &lt; 3.0$</td>
</tr>
<tr>
<td>Unacceptable</td>
<td>$0.0 &lt; 2.5$</td>
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Instrument review and testing.--The instruments were tested using several types of business associates: engineers, administrators, supervisors, and training personnel. The instruments were examined with regard to question comprehension and net worth in terms of obtaining useful training development data.

Instrument revisions and final draft.--Comments were received from business associates and suggestions were incorporated when practical, particularly when there was a consensus of opinion (see Appendices II and III).

Rationale in selecting sample

The study was limited to large aerospace firms in the Greater Los Angeles area whose training directors were affiliated with the American Society for Training and Development as indicated in the Training and Development Journal.\(^5\) Firms which belong to such a professional organization would be expected to have a keen interest in

research in the field and be more likely to participate in the study. In addition to their professional affiliation with a training society, these firms are important because they rank very high among firms receiving prime contract awards from the Department of Defense in fiscal year 1970. Out of the top 100 firms in the country, 50 percent of the firms selected for this study ranked in the top decile of contract recipients, 20 percent ranked in the second quartile, 10 percent ranked in the third quartile, and 20 percent did not rank in the top 100 firms but are considered to be major aerospace contractors.\(^6\) In terms of total contract dollar values these firms received 16.22 percent of all Department of Defense prime contract awards in fiscal year 1970.\(^7\) In summary, two factors indicated the selection of these firms would yield findings that would provide significant and useful training information and achieve the stated purpose of this study: (1) professional interest in the training field as demonstrated by their affiliation with the American Society for Training and Development, and (2) their industry leadership as indicated by their considerable share of prime contract awards.


\(^7\)Ibid., pp. 7-18.
The training personnel in the participating firms were allowed to choose the training program graduates who would fill out the graduate questionnaire. Each training coordinator was requested to select ten graduates to participate in the study (see Appendix I).

Contact of industrial training personnel

The training coordinators listed in the Training and Development Journal were contacted by phone to see if they would be interested in such a research project. The response was almost unanimously positive.

Distribution of questionnaire and follow-up

The questionnaires were mailed to the participating firms' training coordinators. Initial follow-up calls were made to those individuals who had not responded within a two-week period. Additional calls were made after another week had expired without returned questionnaires.

Limitations of Study

Study limitations relate to research samples, industry economic conditions, and the method of data collection. The following briefly describes these areas.

Participating firms in research sample

Restricting participating firms to large aerospace firms in the Greater Los Angeles area listed in the
American Society for Training and Development Journal is limiting because of the following:

1. Findings cannot necessarily be applied to smaller firms with perhaps less funding to allocate to training.

2. The results of this study cannot necessarily be applied to the industry in general because firms which are not affiliated with a professional training society may not have as good training programs as those which are.

3. The findings cannot necessarily be applied to areas of the state or country with a lesser concentration of this type of industry than the Greater Los Angeles area.

Training personnel in the individual firms were allowed to select the sample of training graduates to participate in the study. This has the obvious limitation in that training personnel could have chosen only those participants they felt would have a favorable response to the progress.

Poor economic conditions

Low level backlog business, poor new sales activity, and depressed job markets in the aerospace industry
during the time of this study could have impacted the study in the following ways:

1. Because training staffs were at such low levels as a result of layoffs, the quality of the responses could have been adversely affected because of preparation time limitations.

2. Lack of job mobility opportunity may have constrained truthful and accurate responses from both training coordinators and program graduates.

3. Layoffs affected the quantity of responses from training graduates.

Use of questionnaire

The use of the questionnaire method to collect data rather than the interview method may have had an adverse impact on the quality of the data. For example, when the questionnaire is used the respondee does not have the luxury of asking questions and may make errors of interpretation. Also, the researcher does not have the opportunity to observe facial expressions or voice inflections that could provide keys to evaluations or feelings.

Plan of Presentation

The following is the chapter sequence plan with brief descriptions of the study areas.
Related literature

Chapter III contains bibliographical research of training. Areas of examination highlight "expert" opinion regarding training objectives, training program development, learning principles, training methods and mix, work environments, and training program evaluation methods.

Analysis of training personnel responses

Chapter IV discusses the findings and analysis derived from the training coordinators' responses. These findings basically describe the critical factors of training and identify the current training trends in industry.

Analysis of training graduate responses

Chapter V examines the training graduates' evaluations of the same programs the training coordinators described. There is a quantitative analysis of graduate responses to questions that have significant implications for training effectiveness. Statistical analyses were presented in tabular and graphical form, displaying frequency distributions reflecting student numerical responses to questions which indicated their positive or negative evaluations of training.
Summary, conclusions, and recommendations

Chapter VI recaps the major findings of the study, tests and evaluates the hypothesis, draws conclusions based on findings, and provides recommendations regarding training program development and improvement.

The following chapter (Chapter III) discusses related literature regarding the various facets of training. It begins with several definitions of training and is followed by an analysis of the various training factors listed under the related literature section of this chapter.
CHAPTER III

RELATED LITERATURE

Several definitions of training and supervisory development are given below.

Training in industry is the formal procedure to facilitate employees learning so that their resultant behavior contributes to the attainment of the company's goals and objectives.\(^8\)

Developing job knowledge and skills, transmitting information and modifying attitudes.\(^9\)

Management development deals with how an organization can influence the beliefs, attitudes and values of an individual for the purpose of developing him, changing the employee in the direction that the organization regards to be in his best interests and the company's.\(^10\)

Briefly, executive development is an effort to apply the same principles of management; viz., planning, organizing, directing, and control to the selection and development of management personnel which are used in the physical and financial phases on the hope that "cream will come to the top."\(^11\)

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Management development is defined as a continuous process to increase the effectiveness of the organization members through planned learning.12

In essence, the objectives of training are to modify the participants' attitudes and behavior patterns, improve their skills, and increase the probability that the companies' goals are met.

The following is an examination of the most important aspects of training, including expert opinion concerning the principles of learning, training program development, training methods and mix, work environment, and training program evaluations.

**Principles of Learning**

Several authors stress that the person(s) responsible for the establishment of a training program must first consider certain basic learning principles. These principles, as discussed by various authors, have been similar in content. McCormick offers the following representative principles of learning:

1. The capacities of the learner are very important.

2. A motivated learner acquires what he learns more readily.

3. Motivation that is too intense (pain, fear, anxiety) may be accompanied by distracting emotional states.

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4. Learning under the control of reward is usually preferable to learning under the control of punishment.

5. Learning under intrinsic motivation is preferable to learning under extrinsic motivation.

6. Tolerance for failure is best taught through providing a backlog of success that compensates for experienced failure.

7. Individuals need practice in establishing realistic goals for themselves.

8. An individual's personal history may hamper or enhance his ability to learn.

9. Active participation by a learner is preferable to passive reception (such as lectures).

10. Meaningful materials and meaningful tasks are more readily learned.

11. There is no substitute for repetitive practice.

12. Information related to the nature of a good performance, knowledge of one's own mistakes, and knowledge of successful results aids learning.

13. Transfer of new tasks will be better if, in learning, the learner can discover relationships by himself.

14. Spaced or distributed recalls are advantages in subject material that is to be retained.\(^\text{13}\)

The principles of learning are very important; however they are general concepts that must be built upon to establish a viable training program. The following examines the steps needed to establish training.

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\(^{13}\)McCormick and Tiffin, op. cit., p. 283.
Training Program Development

All employees enter the organization with predisposed sets which are the product of their heredity or environment. These sets are composed of beliefs, assumptions, and preconceptions.\textsuperscript{14} Training is built on the premise that: "Human behavior is more dependent upon learning and less regulated by instinct or other innate behavioral predispositions such as the behavior of lower animals."\textsuperscript{15} If this hypothesis is accepted, Rose suggests that the following training development steps be taken by the training coordinator:

1. Establish realistic goals for the course.
2. Explore and evaluate various methods of instruction.
3. Select and organize content from occupational analysis into a logical and developmental sequence for instruction.
4. Consider all significant elements in the training situation.
5. Plan each lesson so that it is psychologically and educationally sound.
6. Develop or select support materials.
7. Prepare written performance tests for each important element or unit of curriculum.
8. Consider methods of control and coordination to ensure consistency in all actions and provide

\textsuperscript{14} Megginson, \textit{op. cit.}, p. 308.
\textsuperscript{15} Ibid., p. 309.
desirable flexibility in the execution of the plan.

9. Set the stage for the effective use and conservation of resources.\(^\text{16}\)

McGehee and Thayer offer developmental questions as guides when establishing training programs:

1. Who is going to teach? Should it be the company training staff, outside consultant, university or college staff, or a professional organization?

2. Where the course is to be given. Should it be on the company's premises, on a university or college campus, or at a hotel/motel/resort?

3. What type of training program should it be? Should it be a packaged program sold by a commercial organization, a custom-designed program created by the company training staff in conjunction with line organization personnel, or a packaged program modified to suit the specific needs of the company?\(^\text{17}\)

Even if all these developmental factors have been considered, the success of the program has not been ensured. What is taught and what is ostensibly learned can vary. It is certain that the participant will learn; the training coordinators must concentrate on what is learned.\(^\text{18}\) They must develop and train employees so that their efforts contribute to the organizational objectives


\(^{17}\) McGehee and Thayer, op. cit., p. 439.

and are responsive to changes in work environments and assignments.

The next section covers the most prevalent methods of instruction in current industrial use. These methods are used because the training coordinators feel they will best transmit the knowledge management wants the participant to learn.

Training Methods and Mix

This section deals with the various means by which the training coordinators hope to transmit knowledge and effect an interchange of ideas among participants, and between participants and instructors. The end objective is the development of supervisory skills. Characteristics of the following methods are described in this section: lecture, conference, case study, role playing, and sensitivity training. McGehee and Thayer offer descriptions of the previously mentioned methods.19

Lecture method

This method is the traditional mode of transmitting information to others. Some characteristics of the lecture method are: the instructor verbally presents information to a group; there is little overt activity on the part of the trainee; small interaction between instructor and trainees; and in some infrequent instances,

19 McGehee and Thayer, op. cit., p. 283.
the instructor's monologue is interrupted by questions from the students. This method can be used to acquire conceptual skills but is limited in the area of modifying attitudes.

Conference/seminar method

This method is a carefully planned meeting with specific purposes and goals. Generally speaking, it is used to acquire conceptual data and modify attitudes. This method is a democratic rather than an authoritarian attempt to acquire specific concepts and modify attitudes.

Case study

The participants are given a case or problem to consider. Through analysis, questions, and discussions, the participants bring out principles that are integral to the case. The major premise of this type of training is that the material taught will be more meaningful because the student will remember those things (principles) he discovers for himself. Considerable care must be taken to avoid excessive pressures to solve the problem. Extreme pressure for solution may detract from learning the appropriate underlying principles.

Role playing

This technique attempts to create true life situations, usually involving face-to-face conflicts and
confrontations. Each participant in the role playing program assumes the part of a specific personality. Heavy emphasis is placed on developing insights to human behavior and changing attitudes and viewpoints. The participant's motivation and involvement can be very high. A pitfall to avoid is total involvement in drama to the exclusion of learning underlying principles.

Sensitivity training

This training method attempts to develop leaders who can arrive at decisions and implement these decisions for groups in a democratic fashion. The key to this approach is that the trainers are supposed to develop an awareness of how they can influence others and how they may unconsciously be hindering their own work or the work of the group. This method is primarily designed for attitudinal changes and some positive verbal and social skills may be gained as a by-product. The method can also bring about emotionally charged situations which may over-shadow the training objectives.

There are other less popular methods and adjunct techniques for training such as closed-circuit television, in-basket method, and management games; however, the ones described are the most frequently used.

Most companies do not use one method exclusively; a combination or mix of methods is used and careful
attention must be paid to the correct balance. Factors such as training curriculum and training objectives must be evaluated. Where objectives are toward an attitude or behavior pattern change, the high participation type of training mix is desirable. Where new skills or concepts are to be learned, the more passive methods, such as the lecture method, are desirable. 20

Work Environment

In addition to the factors of training methods and balance, training coordinators must take into account the participants' work environment. Consideration must be given to the individual, his supervisor, the functions of his department, and how his department contributes to the overall objectives of the firm. 21 Exposing an employee to a training program (which implies that top management desires an improvement and application of skills) does not guarantee that the graduate of training will return to his work environment and become more successful. 22 For example, if the course was successful, the employee will be highly motivated to return to his work area and implement


21 Ibid.

some of the techniques and principles that he has learned. If he is met by a supervisor who is not sympathetic or receptive to his suggestions, the graduate may be frustrated and the course will serve as a demotivator rather than a motivator. Fleishman states what may occur as a result: "An implication of research results seems to be that if the old way of doing things in the plant situation is still the shortest path to approval by the boss, then this is what the foreman (participant graduate) really learns." The training graduate will do what his boss thinks is right and this is, at times, at odds with the objectives of training.

Training personnel could conceivably follow all the prescribed steps in establishing a program and yet fail in accomplishing the training objectives. Considerable attention is paid to top management support of a program; however, very little attention is paid to the "grassroots" support that is required of lower levels of management. An industrial trainee graduate might be accorded less respect than a college graduate beginning his first job in industry or an Army officer just out of ROTC. The reason for this could be very simple; the graduate's

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23 Ibid.

immediate supervisor may not have been through the same or a similar course, and therefore could be very reluctant to encourage implementation of any ideas or suggestions.

Training Program Evaluation

Training program evaluation is a matter of considerable concern and debate. Some people in industry feel it is impossible to evaluate a training program; others feel evaluation is unnecessary; and others feel that their training programs are too new for effects, whether positive, negative, or no change, is to be measured. The debate over the evaluation of training is actually a waste of time, because programs are constantly being evaluated, formally or informally. The choice is not whether there will be evaluation, but the quality of the evaluation.

Mahler defines evaluation as "... an attempt to arrive at a correct judgment of their (training programs) value or worth in either monetary or non-monetary terms." Mahler additionally states that there are three types of evaluation in current use: "common-sense"

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26 Ibid., p. 81.
evaluation, systematic evaluation, and experimental evaluation.27

Under the "common-sense" method, the evaluator performs a random search for isolated statistics or facts such as decreases in employee turnover, reduction of employee absenteeism, reduced frequency and severity of accidents, lower workman's compensation costs, and lack of union recognition in the company. This evaluation method does not provide conclusive proof that the above statistics would not have occurred without a training program.28 Another mode of "common-sense" evaluation is the inference or "gut feel" method. For example, it could be inferred that if top management approves the budget for the training program, the training program therefore is worthwhile.29 In summary, the "common-sense" method does not utilize any predetermined criteria for evaluating a program's success or failure.

The second type of evaluation is "systematic evaluation." The evidence to be collected is decided in advance, and methods are used that will yield information that can be quantified. This method involves the collection of inferences or judgments by use of questionnaires,

27 Ibid., p. 83.
29 Mahler, op. cit., p. 83.
This type of evaluation method can be used to obtain from participants information regarding: (1) the amount of interest in the class, (2) the comparative amount of study time required, (3) their understanding of the assignments, (4) opinions of the value of the text and other materials, (5) their feelings about the method of instruction being used, (6) their frustration or feelings of satisfaction with their own progress. Although the participant does not always know what is good for him, his opinion may help training coordinators to modify their approach, gain greater acceptance, and hence aid in the achievement of the firm's objectives.

Even with the above useful functions, the person evaluating participant opinions must be very careful that the data do not reflect that: (1) the student is just being entertained, (2) the student is pleased because he has been selected for participation, (3) the student has a good feeling because he belongs to a new group, (4) the student is responding to the personal attention of the instructor.

Participant opinion regarding supervisory training can be a subjective popularity poll if not handled

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30 Ibid.
31 Rose, op. cit., p. 83.
32 Ibid.
properly; however, it cannot be discounted as a useful tool because of lack of objectivity. It is generally conceded that most industrial decisions are based on subjective data, so it is not inappropriate to use subjective data in evaluating training.

The third method of evaluation is called "experimental evaluation." This method establishes research models and data collected under controlled conditions. Generally, the amount of knowledge change is being measured, and this could involve as many as three groups.\(^3^3\)

**Experimental Research Model**

<table>
<thead>
<tr>
<th>Group 1</th>
<th>Pretest—Training Course—Posttest</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Experimental)</td>
<td></td>
</tr>
<tr>
<td>Group 2</td>
<td>Pretest—Posttest</td>
</tr>
<tr>
<td>(Control)</td>
<td></td>
</tr>
<tr>
<td>Group 3</td>
<td>Posttest</td>
</tr>
</tbody>
</table>

Experimental evaluations attempt to equalize all factors before a test is given. Such factors include educational levels, experience, and work areas. The first two groups are subjected to a pretest, and the results are noted. Group 1 (experimental) is exposed to the

---

training course, posttraining test is given, and the test score change is noted. Group 2 is not subject to training, but is given the same test. If changes are noted in the experimental group but not the control group, it is generally concluded that this was due to the training program. Group 3 is used when it is felt that the pretest examination preconditions the control group, and therefore any Group 1 and Group 2 comparisons would contain a certain amount of bias and perhaps error.

Of the three different methods of evaluation noted, this is perhaps the most sophisticated, but not necessarily the most effective. In addition to pretest bias there is a major difficulty in equalizing factors prior to pretest examination. Another limiting factor is the type of change that is being measured. The model measures the change in knowledge for the experimental and control groups, and it does not necessarily follow that a positive change in knowledge will make a better supervisor.

Unfortunately, effective evaluations are hindered by many intangible factors such as: (1) the specific nature of assigned responsibilities, (2) the trainee's state of mind, (3) the quality of the trainee's supervisor's performance, (4) the state of business itself.  

The task of management development training and its effective evaluation is very difficult.

In summary, this chapter provides authoritative guides to establishing training programs. With the presentation of expert opinion regarding training definitions, learning principles, development, methods, environment, and evaluation, the optimum conditions and factors necessary for efficient training have been identified.

The next chapter describes the training programs currently in use by the firms selected for this study. Information has been provided by the various training coordinators responsible for establishing and maintaining the training programs.
CHAPTER IV

ANALYSIS OF TRAINING PERSONNEL RESPONSES

The "training director's/coordinator's questionnaire" was designed to elicit information from the various company training representatives without placing a heavy burden on them in terms of preparation time. Even with this objective in mind, the questionnaire required an estimated minimum of two hours to complete. There were certain types of questions which required data that may not have been readily available to the training staff filling out the questionnaires. For example, some questions required statistical information such as average length of service in a supervisory position, average formal education level, average number of pupils in the class, and average training cost per participant. There were other types of questions which may have probed factors which the training staff had not considered or had not questioned such as reasons for selecting the training methods, criteria for participation, and the strong and weak points in their programs. The majority of the questions were rather probing and, therefore, required considerable time.
Most of the companies had very small training staffs--usually only a training coordinator with clerical assistance. Of the four companies that did not respond to the questionnaire, one had laid off its training coordinator and the other three did not have formal in-house training programs that would lend themselves to answering the type of questions presented. Evidently, the initial phone contact with the firms' training coordinators did not adequately communicate the formality and depth of the study. For example, they may not have kept any statistics on the participants, costs, schedules, or instructors because the informality of the programs did not dictate that these data be kept. Considering industry layoffs and small training staffs, the response of ten of fourteen companies was gratifying.

The remainder of the chapter is divided into three major sections. The first section deals with course objectives that indicate why a firm institutes a formal in-house training program. The second section examines the design aspects of training; these factors must be considered before the establishment of any formal type program. The third section examines the administrative factors which are key to establishing, sustaining, and evaluating the training.
Course Objectives

The extensive pilot instrument testing and subsequent revisions indicated that a clear distinction had been made between long and short-range objectives; however, the answers reflect a mixture in answer type to the same question. They all related to training objectives, but some dealt with training as an end-product (long-range) and some described the objectives as a stepping-stone (immediate) to some greater goal. Some companies gave short-range answers to the long-range question and vice versa. Even so, several comments can be made concerning program objectives, whether long or short-range:

1. All training programs are aimed toward change on the part of the students.

2. The desired change can be basically one of attitude, skills, or knowledge.

3. The change objectives were reflected in many ways:
   a. Help the new supervisor begin his new role without going through an extended period of costly trial and error.
   b. Help personnel who are presently supervisors better cope with the pressures and requirements placed upon them from above, below, and perhaps outside the firm.
c. Help supervisors prepare themselves for promotional opportunities.

d. Help supervisors understand company policies and procedures.

Apparently, the distinction between long-term and short-term objectives is not important, but it is important that firms want definite change effected by means of training.

The next section of this chapter examines the critical areas for consideration that are basic to establishing a training course. These factors must be dealt with before any others can be considered.

Course Design

This part of the study examined factors relating to program type, program development, methods of instruction, training topics and subjects, instructional material and assignments, and examinations.

Custom or packaged programs

Custom training programs are those programs primarily designed by the company training personnel as directed by the firms' management. Training personnel sometimes call on line organization personnel knowledgeable in certain subjects to help them develop and present the subject matter. Line personnel are also called on to provide trainers with a training requirements inventory.
This inventory is a list of skills, concepts, and/or techniques the supervisors feel participants should learn.

Packaged training programs are designed by outside firms and are usually standard in format. Companies using this type of program try to select a program that closely approximates the specific needs of their firm. Of the two types of training programs, the packaged program is the least expensive. Firms using this type of program usually pay a flat fee for the training package, or pay a price based on the number of participants.

Eight of the ten programs were custom-designed and the other two programs were a mixture of custom and packaged programs. The survey respondents identified one common reason for establishing such a high proportion of custom programs for training. The reason was that the program had to meet the specific needs of the company and company personnel were best qualified to design such a program. This line of reasoning is quite logical; however, training coordinators may have been somewhat influenced by poor economic conditions in the industry. It is natural for training personnel not to expound on the great value of packaged training programs when their job security could be questionable. In the two cases where packaged programs were used, the firms felt the programs provided a nucleus of information which could be expanded upon.
Personnel involved in training program development

The training programs were established primarily by the training coordinators. In 50 percent of the cases, training courses were established solely by the training staff. In 20 percent of the cases, training courses were established by the training staff in conjunction with training graduate suggestions. In 20 percent of the cases, the training staff established the training course with the help of management. In 10 percent of the cases, the training staff and management worked with training graduates in establishing a method.

Obviously, the firms selected for this study relied heavily on training coordinators to establish training programs.

Methods of instruction

None of the companies used a training technique that was 100 percent pure in method; that is, none made exclusive use of the lecture, seminar, conference, case study, or role playing methods. The firms emphasized such participation types of methods as conference workshops and seminars. These prime methods of instruction were supplemented by lectures, films, and audio-visuals to help provide a nucleus for discussion or to help emphasize or highlight certain aspects of the discussions.
Two primary means were used by firms in selecting training methods:

1. The Reliance on Training Coordinators' Feel for Training Requirements.

This was a highly subjective type of selection procedure in that the firms relied heavily on the training coordinator's "gut feel" in establishing training. The training coordinator's criteria in these cases involved his own value judgments based on his past experience. There was no evidence that a formal procedure was followed in examining the training requirements versus the appropriateness of training method.

2. The Reliance on Formal Evaluations of Training Requirements.

This means of selecting a training method or methods was more objective in nature. In the cases where objective procedures were used the training coordinators had made training evaluations, solicited recommendations from graduates, solicited recommendations from line organization personnel, and based on this type of data, a decision is made as to the most appropriate method(s).

There was a clear indication that the decision criteria used for selecting training methods were subjective in nature rather than objective.
Major topics/subjects

Because a myriad of answers regarding topics was anticipated, some sort of categorization was considered necessary. Four categories were arbitrarily established:

1. Program Topics Unique to the Firm Conducting Training.

Company-unique training programs include several, very specialized topics. The training graduate would find the primary use for this knowledge in the firm where he is presently employed. Examples of these topics are union contractual requirements, company security regulations, manufacturing cost control, and safety programs.

2. Program Topics With the Potential for Universal Application in All Departments and Firms.

Topics for these training programs include such general subjects as motivation, staffing, directing, controlling, planning, listening, and verbal and written communication. The knowledge gained from these subjects has a high probability of being transferable to any firm or department.

3. Programs That Utilize Both Company-Unique and Universal Topics.

This type training program attempts to integrate the company-unique topics with topics that have universal application. The objectives here are twofold: to broaden the participants' knowledge of company operations,
procedures, and policies, and general supervisory skills using universal topics.

4. Programs for Single-Purpose Objective.

Training programs of this nature devote an entire training program to a single aspect of the supervisor's role. Only one company used this type of training and this was for the understanding of the company's Affirmative Action Program for minorities.

In 80 percent of the cases analyzed, the firms have emphasized programs described under Subtopics 2 and 3 (Table 1). The firms' obvious objective is to broaden the supervisor's horizons and provide him with knowledge easily transferable to any department within the firm.

**TABLE 1**

**TOPICS/SUBJECT EMPHASIS IN PARTICIPATING FIRMS**

<table>
<thead>
<tr>
<th>Company</th>
<th>Company Unique Application 1</th>
<th>Universal Application 2</th>
<th>Combination 3</th>
<th>Single Purpose 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
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<tr>
<td>2</td>
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<td>x</td>
<td></td>
<td>x</td>
<td></td>
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<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td>x</td>
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<td>5</td>
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<td></td>
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<tr>
<td>6</td>
<td></td>
<td>x</td>
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<td>10</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Totals</td>
<td>1</td>
<td>4</td>
<td>4</td>
<td>1</td>
</tr>
</tbody>
</table>
The instructional materials varied. Company manuals/procedures, copies of articles of topical interest, company designed workbooks, purchased workbooks, and films were used. Only 60 percent of the companies required their students to complete outside assignments which emphasized company-oriented materials with some supplementary outside publications.

Only 50 percent of the companies gave some sort of examination during or after course completion (Table 2). These examinations ranged from informal quizzes to formal examinations. The study was not able to confirm whether the test results were given to the participants' supervisors, so there is no evidence regarding whether or not the participant's supervisor used this information to help evaluate and improve his subordinate's performance.

The final section of this chapter deals with factors that give a program life and examines critical factors that must be considered in sustaining training at effective levels.

Course Administration

This section contains factors relating to instructors, participation criteria, training costs, duration, frequency, location, and class size. Other factors
### TABLE 2
ASSIGNMENTS/EXAMINATIONS IN PARTICIPATING FIRMS

<table>
<thead>
<tr>
<th>Company</th>
<th>Outside Assignments</th>
<th>Exams</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>1</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>x</td>
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<tr>
<td>5</td>
<td>x</td>
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<tr>
<td>10</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Totals</td>
<td>6</td>
<td>4</td>
</tr>
</tbody>
</table>

Examined are data relating to the participants, such as formal education levels and supervisory experience.

### Supervisory-development Instructors

Instructors are among the prime moving forces in achieving training success. Participative training methods were emphasized. In this mode of training, instructors should be well in tune with what is happening in the operations of the company.

Sixty percent of the instruction effort involved team effort (Table 3). In five out of the six cases, the team consisted of training staff and personnel from line organizations. The line personnel are chosen for their
outstanding qualifications in the subject(s) to be taught. These qualifications are gained through on-the-job experience and perhaps reinforced by academic background. One company using the team teaching concept used college or university professors and outside consultants in addition to their own training staff and line personnel. This firm brought in the professors and consultants to help reinforce the need for a firm foundation in management principles and perhaps benefit from their experience in consulting with other firms.

TABLE 3
THE TYPE OF PERSONNEL THAT SERVE AS TRAINING INSTRUCTORS

<table>
<thead>
<tr>
<th>Company</th>
<th>Training Staff</th>
<th>Line Personnel</th>
<th>College Professors</th>
<th>Outside Consultants</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
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<td>7</td>
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<tr>
<td>8</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td></td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Totals 10</td>
<td>6</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

The other 40 percent of the firms used their training staff as instructors. A possible problem here is that program participants are first line supervisors.
involved in the day-to-day operations of the firm and a training coordinator may not be able to answer their "real world" questions.

Another pertinent and disturbing factor regarding instructors is that in only 60 percent of the cases did they have any familiarity with the participants' background. This knowledge deficiency covers such areas as participants' educational level, functional work area, years of supervisory experience, and any other data which could have been obtained from the participants' supervisor.

Criteria for participation

The selection of training participants was rather a hit-and-miss procedure. In only 40 percent of the cases was training mandatory for all supervisors; the balance of the selections were made by the participants' supervisors, and in 50 percent of those cases the personnel department assisted or approved their selection.

Training costs

Findings regarding the costs of training were very disturbing. Only 30 percent of the companies had any idea of what their training costs were, and the costs quoted were so low that they had to be suspect. The primary costs of training were employees' time, trainers'/consultants'/professors' salaries, materials, facilities,
and food, if any. Data were not available regarding the cost mixture of the above, however, one can safely assume that the participants' and the instructors' time are the primary cost (Table 4).

Training session hours, frequency, duration and location

Most of the participants are not required to train on their own time (Table 5). Evidently, companies feel very strongly that supervisory development is a cost of doing business. Training, on the average, involves forty man hours per participant and occurs over a period of weeks. Companies could have several reasons for spacing instructions:

1. If the trainee went through forty hours of training at one time, there would be too much data for him to assimilate and his retention level would be very low.

2. Companies cannot afford to release the participants from their normal jobs for several weeks.

3. Spacing of sessions may allow the participant to apply some of the techniques and principles he has learned. If this opportunity for application occurs, the participant will have a greater chance of retaining this type of knowledge.
### TABLE 4

**COST FACTORS OF TRAINING AS IDENTIFIED BY PARTICIPATING FIRMS**

<table>
<thead>
<tr>
<th>Company</th>
<th>Participants' Time</th>
<th>Trainers' Time</th>
<th>Non-Recurring Development Costs</th>
<th>Facilities</th>
<th>Material and Supplies</th>
<th>Not Considered</th>
<th>No Cost</th>
<th>Average Cost/Student</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>N/A</td>
</tr>
<tr>
<td>2</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>N/A</td>
</tr>
<tr>
<td>3</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$100</td>
</tr>
<tr>
<td>4a</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$5.61/h</td>
</tr>
<tr>
<td>5b</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>N/A</td>
</tr>
<tr>
<td>6</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>N/A</td>
</tr>
<tr>
<td>7</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>N/A</td>
</tr>
<tr>
<td>8</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>N/A</td>
</tr>
<tr>
<td>9</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>N/A</td>
</tr>
<tr>
<td>10</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$400</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>7</strong></td>
<td><strong>7</strong></td>
<td><strong>1</strong></td>
<td><strong>3</strong></td>
<td><strong>4</strong></td>
<td><strong>1</strong></td>
<td><strong>1</strong></td>
<td></td>
</tr>
</tbody>
</table>

a. Total number of hours for training not provided.

b. Assumption made by company number five respondee that since all participants in the program were salaried indirect, there was no cost associated with the program.

c. N/A = Not Available.
### TABLE 5
DESCRIPTIVE CHARACTERISTICS OF SUPERVISORY TRAINING PROGRAMS
AS PROVIDED BY PARTICIPATING FIRMS

<table>
<thead>
<tr>
<th>Company</th>
<th>Start Time</th>
<th>Stop Time</th>
<th>During Company Time</th>
<th>During Employee Time</th>
<th>Duration Per Session Hrs.</th>
<th>Training Session Frequency Per Week</th>
<th>Total # Sessions</th>
<th>Total Training Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>12:00 Noon</td>
<td>2:00 PM</td>
<td>50</td>
<td>50</td>
<td>2</td>
<td>1</td>
<td>13</td>
<td>26</td>
</tr>
<tr>
<td>2a</td>
<td>9:00 AM</td>
<td>11:00 AM</td>
<td>100</td>
<td>0</td>
<td>2</td>
<td>1</td>
<td>10</td>
<td>20</td>
</tr>
<tr>
<td>2</td>
<td>1:30 PM</td>
<td>3:30 PM</td>
<td>100</td>
<td>0</td>
<td>2</td>
<td>1</td>
<td>14</td>
<td>28</td>
</tr>
<tr>
<td>Swing</td>
<td>4:30 PM</td>
<td>6:30 PM</td>
<td>100</td>
<td>0</td>
<td>2</td>
<td>1</td>
<td>14</td>
<td>28</td>
</tr>
<tr>
<td>3</td>
<td>7:30 AM</td>
<td>4:30 PM</td>
<td>100</td>
<td>0</td>
<td>8</td>
<td>5</td>
<td>10</td>
<td>80</td>
</tr>
<tr>
<td>4</td>
<td>8:00 AM</td>
<td>5:00 PM</td>
<td>100</td>
<td>0</td>
<td>8</td>
<td>4</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>5</td>
<td>N/A</td>
<td>N/A</td>
<td>50%</td>
<td>50%</td>
<td>2</td>
<td>1</td>
<td>9</td>
<td>18</td>
</tr>
<tr>
<td>6 Prog. 1</td>
<td>8:00 AM</td>
<td>4:45 PM</td>
<td>100</td>
<td>0</td>
<td>8</td>
<td>5</td>
<td>5 Work Da.</td>
<td>40</td>
</tr>
<tr>
<td>6 Prog. 2</td>
<td>8:00 AM</td>
<td>4:45 PM</td>
<td>100</td>
<td>0</td>
<td>8</td>
<td>4</td>
<td>8 Work Da.</td>
<td>64</td>
</tr>
<tr>
<td>7</td>
<td>3:30 PM</td>
<td>7:00 PM</td>
<td>50%</td>
<td>50%</td>
<td>3.5</td>
<td>2</td>
<td>7</td>
<td>49</td>
</tr>
<tr>
<td>8</td>
<td>8:00 AM</td>
<td>10:30 AM</td>
<td>100</td>
<td>0</td>
<td>2.5</td>
<td>2</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>8</td>
<td>1:00 PM</td>
<td>3:30 PM</td>
<td>100</td>
<td>0</td>
<td>2.5</td>
<td>2</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>9</td>
<td>3:00 PM</td>
<td>6:00 PM</td>
<td>50%</td>
<td>50%</td>
<td>3</td>
<td>1</td>
<td>10</td>
<td>30</td>
</tr>
<tr>
<td>10</td>
<td>8:30 AM</td>
<td>4:30 PM</td>
<td>100</td>
<td>0</td>
<td>8</td>
<td>5</td>
<td>5</td>
<td>40</td>
</tr>
<tr>
<td>Averages</td>
<td>50% AM</td>
<td>50% PM</td>
<td>50%</td>
<td>50%</td>
<td>4.7</td>
<td>3.3</td>
<td>9.1</td>
<td>39.5</td>
</tr>
</tbody>
</table>

*Bargaining Unit Programs. These programs deal with factors regarding union contractual agreements and procedures. As is readily apparent, union involvement significantly increases training time.*
Other findings reflect that companies with union contracts require from 60 to 80 percent additional time per participant (Table 5). The additional time required is presumably used to familiarize the participant with the different aspects of the union contract and how it affects his supervisory role.

Findings regarding training locations indicate that 80 percent of the companies prefer on-site facilities and the remainder use off-site facilities in conjunction with their own. This overwhelming percentage choosing on-site facilities can be attributable to two factors:

1. It is economical, because companies already have these costs in their operating overhead.
2. First line supervisors are usually flattered that they are selected for participation and do not demand the luxurious surroundings that middle or top management programs would require.

Class size

The average and modal class populations appeared favorable in that they were very manageable sizes. The average class had twenty students and the most frequent class size ranged from twelve to fifteen students. The small class sizes, when used in conjunction with the team teaching concept (training staff and line organization
personnel), seem to create optimum instructor-to-student ratios and therefore increase the probability that participants will receive individual attention and that training will have maximum effectiveness.

**Formal educational level achieved by participant**

A significant fact regarding the students is that their exposure to formal higher education is rather minimal and the firms could offer a very significant educational experience to the participants. Only 40 percent of the participants had any college education and only one-quarter of these graduated (Table 6). This indicates that the participants were very weak in supervisory theory and techniques and most of their approaches to supervision were obtained through on-the-job experience. Depending on the individual supervisor, this could be a very costly approach and the firm has a great opportunity to significantly reduce the trial and error type of costs.

**TABLE 6**

**Participants' formal educational levels**

<table>
<thead>
<tr>
<th>Highest Level Achieved</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not High School Graduate</td>
<td>10</td>
</tr>
<tr>
<td>High School Graduate</td>
<td>30</td>
</tr>
<tr>
<td>0 &lt; 2 years College</td>
<td>20</td>
</tr>
<tr>
<td>&gt; 2 &lt; 4 years College</td>
<td>10</td>
</tr>
<tr>
<td>College Graduate</td>
<td>10</td>
</tr>
<tr>
<td>Data not available</td>
<td>20</td>
</tr>
</tbody>
</table>
Another significant finding regarding the participants is that a minimum 50 percent of the participants had been supervisors with the company for a period of two years or greater. This may be interpreted to mean that the supervisors may have spent many frustrated months working on problems that could have been avoided by the proper training (Table 7).

TABLE 7

PARTICIPANTS' YEARS OF EXPERIENCE IN A SUPERVISORY POSITION

<table>
<thead>
<tr>
<th>Years</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;0 &lt;2</td>
<td>20</td>
</tr>
<tr>
<td>&gt;2 &lt;6</td>
<td>30</td>
</tr>
<tr>
<td>&gt;6 &lt;10</td>
<td>20</td>
</tr>
<tr>
<td>Data not available</td>
<td>30</td>
</tr>
</tbody>
</table>

In summary, this chapter provides descriptive information regarding current industrial training practices and techniques used in the surveyed aerospace firms. The major factors covered were training objectives, design, and administration.

Chapter V examines the participants' reactions to training. The reaction evaluations are both quantitative and qualitative.
CHAPTER V

ANALYSIS OF TRAINING GRADUATE RESPONSES

Each training coordinator was asked to provide ten completed training graduate questionnaires. For the ten firms that participated, this would mean a total of 100 evaluations. This study yielded twenty-three graduate evaluations. Training coordinators attributed their inability to provide more evaluations to two factors: (1) the majority of graduates had been laid off or left the company for other reasons; and (2) the majority of the remaining graduates had taken the course so long ago that their recall would be poor for this study. These findings contributed to satisfying this study's purpose because they provided the important information dimension of graduate evaluations.

The "Training Program Graduate" questionnaire solicited both quantitative and qualitative responses. The questionnaire was divided into major groupings of training data categories:

1. Organization and Administration.

This grouping contained questions dealing with the firms' and the participants' objectives, program organization, class size, starting times, classroom
environment, and the number and duration of training sessions.

2. Presentation of Material.

Questions in this group concerned methods of instruction, training subjects, clarity of presentations, and the use and effectiveness of workshops or laboratories to practice principles, techniques, or skills taught.

3. Discussion.

This area examined the quality of training session discussions. The questions solicited responses relating to the discussion leaders' effectiveness, types of subjects discussed, time allowances, and the extent to which the participants were allowed to involve themselves in solving problems common to the group.

4. Course Assignment/Examinations.

Questions in this area probed the extent of use and effectiveness of outside assignments and examinations in preparing for subsequent training sessions or assisting the graduate to cope better with on-the-job situations.

5. General.

Questions in this group were of the summary type. They dealt with the participant's overall evaluations of the program's worth with regard to: his own supervisory development, the appropriateness of this type of training for his supervision, the appropriateness of this type of training for personnel at his level in other departments,
and program effectiveness in dealing with subjects that covered the real world aspects of the supervisory role.

It was felt that by grouping questions, respondents would not jump from one train of thought to another, and therefore their answers would be more likely to accurately reflect their true evaluations. The questions all required that the respondent indicate his quantitative response to a question (by circling numbers ranging from 1 to 5).

In addition to soliciting quantitative responses, space was provided at the end of each grouping of questions for qualitative statements regarding recommendations, explanations of quantitative responses, or general comments. This adds a new dimension to the quantitative response.

The following are the findings associated with an analysis of the quantitative and qualitative data.

**Analysis of Quantitative Responses**

The quantitative analysis is divided into two parts. The first is a statistical analysis of the overall program broken down by group. The mean values in this analysis reflect responses to all questions. The second, and more important, part of the quantitative analysis reflects mean values to selected questions from the same groups. These questions were considered more important; therefore, the response values weighed more heavily in
evaluating the selected training programs. The criteria for assigning relative importance to questions used factors vital to implementing, sustaining, or evaluating a training program. If one or more of these factors was a data objective of the question, the response was given greater statistical importance. The remaining questions solicited data that were important, but if response means were found to be below average, their impact on measuring training effectiveness was minimized.

Student responses to all and selected questions summarized by group

As indicated in Chapter II, the following criteria were established to determine favorable or unfavorable responses:

<table>
<thead>
<tr>
<th>Program Effectiveness</th>
<th>Response Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excellent</td>
<td>4.0 ≤ 5.0</td>
</tr>
<tr>
<td>Exceptional</td>
<td>3.5 &lt; 4.0</td>
</tr>
<tr>
<td>Good</td>
<td>3.0 &lt; 3.5</td>
</tr>
<tr>
<td>Average</td>
<td>2.5 &lt; 3.0</td>
</tr>
<tr>
<td>Unacceptable</td>
<td>0.0 &lt; 2.5</td>
</tr>
</tbody>
</table>

The statistical analysis of data indicates that students have reacted favorably to the programs with a total response value mean of 3.77 to all questions and 3.70 to selected questions. Significantly, the overall student response mean to selected questions showed a
2 percent net reduction from the response mean to all questions. Three out of the five question groups showed a net reduction ranging from 6 percent to 11 percent, one group showed a net increase of 2 percent, and one group showed no change (Table 8). The analysis shows that the graduates found the program exceptional.

### TABLE 8

<table>
<thead>
<tr>
<th>Question Group</th>
<th>Mean Response Value</th>
<th>Variance</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>All Questions</td>
<td>Selected Questions</td>
<td></td>
</tr>
<tr>
<td>Organization and Administration</td>
<td>3.83</td>
<td>3.58</td>
<td>-.25</td>
</tr>
<tr>
<td>Presentation of Material</td>
<td>3.68</td>
<td>3.45</td>
<td>-.23</td>
</tr>
<tr>
<td>Discussion</td>
<td>3.76</td>
<td>3.84</td>
<td>+.08</td>
</tr>
<tr>
<td>Course Assignments/Examinations</td>
<td>3.59</td>
<td>3.19</td>
<td>-.40</td>
</tr>
<tr>
<td>General</td>
<td>3.99</td>
<td>3.97</td>
<td>-.02</td>
</tr>
</tbody>
</table>

The next area for consideration will be the examination of statistical means at the question level which reveals factors significant to training.
Interpretation of responses to selected questions

The response means to questions that were related in terms of training data categories (Table 9) are examined below.

Most students felt that course objectives were clearly identified (mean 4.00) but a significantly lower score (mean 3.27) was shown for the question regarding whether course objectives matched personal objectives. An optimum situation would exist if course objectives matched personal objectives. The participant would then be highly motivated to achieve because course objectives would also be his objectives. Obviously, this condition is very difficult to achieve; however, effort should be directed toward this goal.

The mean value of 3.45 for the question regarding discussion of on-the-job situations fell well below the overall program mean of 3.70. This response mean is interesting when compared to the response values for the following questions:

1. Did the instructor allow enough time to discuss those subjects the class found interesting or useful? The response value mean to this question was 3.74.
2. Were questions and class discussions encouraged when appropriate? The response value mean to this question was 4.30.

Comparing the mean response value of 3.45 for the question relating to on-the-job discussions with the values shown in numbers one and two above leads to an interesting interpretation. The subject matter that the students discussed and found interesting did not necessarily relate to on-the-job situations and, therefore, could have a minimal impact on improving job performance.

Despite the students' feeling that the value of assigned homework and examinations was considerably lower (mean 3.19) than the overall mean of the programs (mean 3.70), they still felt that the course had better prepared them to handle on-the-job situations (mean 3.78). If assignments and examinations were used more effectively and improved, the participant's ability to become a better supervisor would be enhanced.

The students felt very strongly (mean 4.13) that their supervision should be placed in the same type of course. The high value to this question has significant yet diverse implications. One implication could be that the course was so good they felt it would be beneficial for their supervision; another implication is that the students felt their supervision was so deficient in the
### TABLE 9

RESPONSE MEANS AND MODES TO SUPERVISORY TRAINING QUESTIONNAIRE

<table>
<thead>
<tr>
<th>Group</th>
<th>Question</th>
<th>Mean</th>
<th>Mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Organization and Administration of Program</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>Were the objectives of the training program clearly identified?</td>
<td>4.00</td>
<td>4</td>
</tr>
<tr>
<td>2.</td>
<td>Did the instructor/group leader explain how the instructional material would help achieve those objectives?</td>
<td>3.87</td>
<td>4</td>
</tr>
<tr>
<td>*3.</td>
<td>Did the objectives of the course match your personal objectives?</td>
<td>3.27</td>
<td>3</td>
</tr>
<tr>
<td>*4.</td>
<td>Were the course objectives achieved?</td>
<td>3.43</td>
<td>4</td>
</tr>
<tr>
<td>5.</td>
<td>Did you find the program well organized?</td>
<td>4.22</td>
<td>5</td>
</tr>
<tr>
<td>6.</td>
<td>Was it explained to you how and why you were selected for participation in this program?</td>
<td>3.89</td>
<td>5</td>
</tr>
<tr>
<td>7.</td>
<td>Did you find the class size was satisfactory for this supervisory training course?</td>
<td>4.48</td>
<td>5</td>
</tr>
<tr>
<td>8.</td>
<td>Were the hours of instruction satisfactory for your particular work schedule?</td>
<td>3.68</td>
<td>4</td>
</tr>
<tr>
<td>9.</td>
<td>Did the classroom atmosphere stimulate learning?</td>
<td>4.17</td>
<td>5</td>
</tr>
<tr>
<td>10.</td>
<td>Was the number of training sessions adequate?</td>
<td>3.52</td>
<td>3</td>
</tr>
<tr>
<td>11.</td>
<td>Did you find the length of each session satisfactory?</td>
<td>3.74</td>
<td>5</td>
</tr>
</tbody>
</table>
### TABLE 9--Continued

<table>
<thead>
<tr>
<th>Group</th>
<th>Question</th>
<th>Mean</th>
<th>Mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>12.</td>
<td>Was the total duration of the course satisfactory?</td>
<td>3.74</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Mean and mode average for group</td>
<td>3.83</td>
<td>4.5</td>
</tr>
<tr>
<td></td>
<td>*Mean and mode average for selected questions</td>
<td>3.58</td>
<td>4.0</td>
</tr>
</tbody>
</table>

### B. Presentation of Material

1. Was the method of instruction appropriate for supervisory training? | 4.09 | 4 |

*2. Did you find that the material presented was useful on the job? | 3.45 | 4 |

3. Were the supervisory principles/techniques presented in such a way to make the total job function of the supervisor clear? | 3.52 | 3 |

4. Were the lectures or subject matter well organized? | 4.09 | 4 |

5. Were the instructors’/group leaders’ ideas expressed clearly? | 3.91 | 4 |

6. Was a sufficient amount of time allotted to the coverage of each subject? | 3.43 | 3 |

7. Did the sessions provide any workshop/laboratory for the practice of some of the techniques that were taught? | 3.44 | 3 |

|       | Mean and mode average for group | 3.68 | 4.0 |
|       | *Mean and mode average for selected questions | 3.45 | 4.0 |

### C. Discussion

1. Did the instructor lead most of the group discussions? | 3.13 | 3 |
TABLE 9—Continued

<table>
<thead>
<tr>
<th>Group</th>
<th>Question</th>
<th>Mean</th>
<th>Mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>*2.</td>
<td>Were participants' examples of on-the-job situations presented for classroom discussions?</td>
<td>3.45</td>
<td>3</td>
</tr>
<tr>
<td>*3.</td>
<td>Did the instructor allow enough time to discuss those subjects the class found interesting or useful?</td>
<td>3.74</td>
<td>4</td>
</tr>
<tr>
<td>*4.</td>
<td>Were questions and class discussions encouraged when appropriate?</td>
<td>4.30</td>
<td>5</td>
</tr>
<tr>
<td>5.</td>
<td>Were program participants allowed to respond to questions posed by fellow trainees?</td>
<td>4.18</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td><strong>Mean and mode average for group</strong></td>
<td><strong>3.76</strong></td>
<td><strong>3.5</strong></td>
</tr>
<tr>
<td></td>
<td><em>Mean and mode average for selected questions</em></td>
<td><strong>3.84</strong></td>
<td><strong>N/A</strong></td>
</tr>
</tbody>
</table>

D. Course Assignments/Examinations

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Did you find the instructional material useful in preparation for class participation?</td>
<td>3.86</td>
</tr>
<tr>
<td>*2.</td>
<td>Did you find the subject matter or assigned material useful on the job?</td>
<td>3.19</td>
</tr>
<tr>
<td>3.</td>
<td>Did you find that the assigned outside projects helped in learning supervisory techniques?</td>
<td>3.08</td>
</tr>
<tr>
<td>4.</td>
<td>Did the classroom sessions and outside assignments adequately prepare you for the examinations?</td>
<td>3.83</td>
</tr>
<tr>
<td>5.</td>
<td>Did the instructor sufficiently cover deficiencies in your examinations?</td>
<td>4.00</td>
</tr>
<tr>
<td></td>
<td><strong>Mean and mode average for group</strong></td>
<td><strong>3.59</strong></td>
</tr>
<tr>
<td></td>
<td><em>Mean and mode average for selected questions</em></td>
<td><strong>3.19</strong></td>
</tr>
</tbody>
</table>
### TABLE 9—Continued

<table>
<thead>
<tr>
<th>Group</th>
<th>Question</th>
<th>Mean</th>
<th>Mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>E. General</td>
<td>*1. As a result of taking this course do you feel that you can better handle on-the-job supervisory problems?</td>
<td>3.78</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>2. Could you use the knowledge gained in this course for a similar position in another functional department?</td>
<td>4.00</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>*3. Would this type of training be beneficial to supervisors one or two levels higher?</td>
<td>4.13</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>*4. Did the instructor/group leader know enough about &quot;real world&quot; supervisory problems?</td>
<td>4.04</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Mean and mode average for group</td>
<td>3.99</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>*Mean and mode average for selected questions</td>
<td>3.97</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Grand total program mean and modes for all questions</td>
<td>3.77</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Grand total program mean and modes for selected questions</td>
<td>3.70</td>
<td>4</td>
</tr>
</tbody>
</table>

*Those questions asterisked are the selected questions that were given greater statistical importance.*
This chart graphically displays the frequency distribution of numeric responses to each of the five groups of questions. Question Groups are stacked. See Appendix IV for data base for chart.
areas of study that they would benefit by participating in the course.

This difference in interpretation is critical because if the second condition exists, it is highly probable that the on-the-job supervisor is weak in supervisory skills and would not be receptive to implementing new techniques proposed by a subordinate who had just completed a training course.

An interpretation of the students' qualitative recommendations and comments regarding the training programs they completed follows.

**Analysis of Qualitative Responses**

Because the number of qualitative responses was low (Appendix VI), the results of the analyses cannot be weighed too heavily, but must be considered. Because the response solicited was primarily recommendation for improvement, the graduates either may have been hesitant to make any sort of course criticism because of poor economic conditions in the industry, did not have time to sit down and write recommendations or comments, or felt anything they suggested would not make a meaningful contribution to program improvement.

The following is an analysis of participant recommendations regarding subjects, instructors, assignments, examinations and other pertinent training factors.
The most frequent recommendation was that courses should devote more time to certain subjects. The participants wanted increased training time allotted to discussing on-the-job situations. This compares favorably with the quantitative responses to the question regarding discussions relative to on-the-job situations. The response mean to this question was 3.45, well below the overall program mean of 3.70. The type of subjects they wanted discussed were the disposition of employee and union grievances, employee relations, personnel policies, and cost control. The vehicles suggested for this increased emphasis were workshops and laboratories.

Cutting down the number of subjects was one of the means suggested to increase subject depth. In lieu of this, another method would be to increase the duration of classes or increase the number of classes. Because this would increase training costs, it probably would not happen.

In summary, students wanted fewer subjects, proportionate increases in time allowances, and a more in-depth study of what they considered to be the supervisory role. What must be avoided is eliminating or shortening a subject emphasis because students did not see its immediate use and, therefore, did not find it useful. For example, one graduate (evidently with several years of
experience) found the subject of motivation of little value ("for a kid out of college") and wanted the more technical aspects of the job emphasized. It could be that this individual was in dire need of some human relations training. Another example was a student that felt too much time was spent listening to problems occurring in work areas other than his own. One of the course objectives for this particular company was to broaden the supervisor's viewpoint; this entailed learning the management system and business relationships inside and outside a particular department.

**Training instructors**

Very little comment was devoted to training course instructors. One student commented that the training leader spent an excessive amount of time in areas of his proficiency. In this case, the company's coordinator did specifically state that line managers were selected as instructors or group leaders because of their familiarity with the subject. The student's complaint is well taken if, for example, a group leader from an engineering department was selected as a discussion leader because of his knowledge in planning but could not relate his planning experience to a manufacturing, quality control, or material environment. All his planning experience would be wasted in a training situation because he could not transfer this
knowledge to students operating in a different functional environment.

**Preparation for subsequent lessons and examinations**

Some students felt there was a need to prepare for sessions in addition to taking examinations on subjects covered.

As previously noted, only 60 percent of the companies required homework assignments. Without some sort of preparation outside the classroom, the participants feel frustrated attempting to absorb a great portion of the training material, especially if the subject matter is new.

Several students felt examinations would be helpful. Chapter IV revealed that only 50 percent of the firms gave any sort of examination. Where there are no checks on progress, students may also have a feeling of lack of accomplishment or frustration. This is especially true for subjects lacking immediate on-the-job application. The student has no frame of reference in those cases, whereas if a test was given and a good grade achieved, the participant would at least have the satisfaction of accomplishment.

**Other recommendations**

One student felt his supervisor should take the course first. This student, as pointed out previously,
could be complimentary to the course or imply that his supervisor is deficient in supervisory skills. If the second condition is the case, mandatory supervisory training for all supervision would help alleviate the problem.

Other suggestions related to conducting the course off-site and conducting morning rather than afternoon classes. Conducting the course off-site would allow the student to get away from the company environment and take a more objective look at the training situation without the usual company pressures. The suggestion regarding start time relates to the fact that if a class starts in the afternoon, the student's mind is cluttered with the day's incidents and he is too fatigued to absorb the subject matter. As stated in Chapter IV, 50 percent of the classes did start in the afternoon.

This chapter shows quantitatively that the training graduates found their training programs exceptional. Evaluation areas included: (a) organization and administration, (b) presentation of material, (c) discussion, (d) course assignments/examinations, and (e) general training topics. As previously indicated, a positive evaluation by students does not necessarily mean that the programs were effective.

The qualitative section of the graduate questionnaire, although it did not yield a great number of recommendations, did provide some useful findings concerning
Chapter VI summarizes the major findings of the study, tests and evaluates the hypothesis, draws conclusions, and provides recommendations.
CHAPTER VI

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Chapters IV and V described, examined, and evaluated the training programs of the participating firms using information provided by training coordinators and training graduates. Chapter IV contained the training coordinators' descriptive data obtained using an open-ended questionnaire. These data were placed into three predetermined data categories: training objectives, training design, and training administration. Chapter V contained data that reflected the training graduates' evaluations of the programs. The evaluations were gathered by using a questionnaire that solicited primarily quantifiable responses indicating favorable or unfavorable graduate evaluations. The questions were in five major groupings: organization and administration; presentation of material; discussion; course assignments and examinations; and general training topics. At the end of each major grouping space was provided for the graduates to make a written recommendation or comment.

In this final chapter the hypothesis is tested, major findings identified, conclusions made regarding these
findings, and recommendations made regarding training program development and improvement.

Test of Hypothesis

The hypothesis addressed itself to supervisory needs. The following restates the hypothesis and the criteria established to determine the graduates' evaluations of training effectiveness.

Restatement of hypothesis

The hypothesis of this study is that formal in-house training programs for first line supervisors in the Greater Los Angeles aerospace industry area do not meet the needs of the participants.

Restatement of criteria for determining a favorable or unfavorable response

Below are the criteria parameters used to determine the graduates' positive or negative evaluations of the training programs.

<table>
<thead>
<tr>
<th>Program Effectiveness</th>
<th>Response Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excellent</td>
<td>4.0 &lt; 5.0</td>
</tr>
<tr>
<td>Exceptional</td>
<td>3.5 &lt; 4.0</td>
</tr>
<tr>
<td>Good</td>
<td>3.0 &lt; 3.5</td>
</tr>
<tr>
<td>Average</td>
<td>2.5 &lt; 3.0</td>
</tr>
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Evaluation and test of hypothesis

Using the criteria, the mean response value to all questions of 3.77 and the mean response value of 3.70 to selected questions indicate that the graduates found training programs exceptional and the hypothesis was disproved. However, it cannot safely be concluded that because the course met approval, graduates returned to work and became effective and successful supervisors. This type of evaluation requires follow-up over a considerable period by trained evaluators. Trainee graduates' supervisors cannot usually make such an evaluation for several reasons: supervisory assignment changes are frequent, and therefore the ability to trace the growth of a graduate is usually difficult; supervisors may not have been through training themselves, and would find it difficult to judge the training's positive or negative impact on the subordinate's performance; and most supervisors are not trained in formal evaluation techniques.

The following is a summary of the study's finding.

Summary of Major Findings

These findings are considered major because they reveal significant facts regarding training in the selected firms and were used as the basis for conclusions and recommendations. They are derived from the responses of training coordinators and training graduates. Major
groupings of findings include: course characteristics, training program development and evaluation, training costs, assignments and examinations, training time, and classroom discussions.

Course characteristics

In 80 percent of the participating firms, training courses were 100 percent custom designed by the firms' training staff. The other 20 percent were a combination of custom and packaged programs.

Class sizes were small, designed to be highly participative, and sought a high degree of communication among participants and between group leaders and participants.

Training program development and evaluations

In 50 percent of the cases, the programs were developed entirely by the training coordinators using subjective criteria to select what they felt were appropriate training methods and subjects. It was also determined that evaluations of training programs would be primarily informal, and conducted by the firms' training coordinators.

Training instructors and participants

In 60 percent of the cases, the training was conducted as a team effort. In five out of the six cases the
team consisted of a training coordinator and an employee from a line organization who was knowledgeable in the subject(s) being presented. In one team teaching situation, the team consisted of a training coordinator, personnel from line organizations, professors, and outside consultants. The remaining four cases relied on their training staff exclusively to perform the instruction/group leader functions. It was also found that only 60 percent of the instructors were familiar with the participants' backgrounds.

Participants had, on the average, two years of supervisory experience; 40 percent of the participants had been exposed to a college education with one-fourth of this group holding a degree.

Costs of training

In 70 percent of the participating firms, the respondees did not know the cost of conducting a training program. In 20 percent of the cases, the costs provided were so low that they had to be suspect. In only one case was the cost figure at a credible dollar level.

Outside assignments and examinations

In 60 percent of the firms, outside assignments were mandatory. In 50 percent of the firms examinations or quizzes were used. The graduates found assignments and examinations of little worth.
Training duration and start times

In 70 percent of the firms training was done on company time. On the average, training involved forty hours of instruction and was conducted over a period of several weeks. Training start times were equally divided between mornings and afternoons.

Training session discussions

Although the participants found discussions interesting, they did not feel the discussions were relevant to their day-to-day problems.

Conclusions

The following statements are interpretations of how this study's findings can influence training effectiveness.

The development and evaluation of training

Training programs are erroneously characterized by training coordinators as being custom programs because they are usually established without proper research. In addition, once these programs are established, and are ongoing, there are very few objective evaluations conducted to determine their worth to the company.
Instructor versus student ratios and training effectiveness impact

Despite favorable instructor-to-student ratios, at least 40 percent of the firms are not taking full training advantage of this because they do not know the participants' backgrounds.

Participant selection criteria

The selection criteria for training participants is inefficient in at least 60 percent of the firms because the process was random and did not follow a prescribed method of procedure. In the remaining 40 percent of the cases, supervisory training was mandatory.

Participant formal educational level and experience

The industrial training program potentially provides a prime educational experience for participants, only 40 percent of whom had been exposed to a college education.

Course participants had, on the average, two years of supervisory experience which indicates they may have spent much too much time without the benefit of supervisory training. This, of course, assumes training is beneficial to the participant and the firm.

Cost of training

The almost complete lack of knowledge about training costs indicates that training's net worth to a firm is
impossible to approximate. For example, even if there was a positive correlation between the training effort and reduced employee absenteeism and employee turnover, a net dollar payoff for training cannot be established or approximated.

Outside assignments and examinations

The inadequate use of examinations and assignments indicates that training programs did not optimize learning conditions.

Training start times

Training programs starting in the afternoon do not provide optimum conditions for absorbing subject matter.

Training discussions

Class discussions are not put to maximum use, and, in many cases, they are not relevant to the participant's work situation and, therefore, do not help in working day-to-day problems.

Training instructors from line organizations

Instructors from line organizations who cannot apply their knowledge to work areas different than their own do not provide an adequate training experience for the participants.
Recommendations

This section provides suggestions for improving training presently being conducted, and also provides some guidelines for training coordinators responsible for establishing a training program.

Training course content

Since all the training coordinators stated they used customized training programs because the company had the best feel for training requirements, they should honor this premise by determining what these requirements are by using line-organization personnel and especially supervisory personnel. In 50 percent of the cases, training personnel were making the training requirements decision on their own; and, therefore they ran the risk of operating in a vacuum detached from a "real world" company environment.

In addition to the benefit of making training relevant to the work environment, using line and supervisory personnel has the additional benefit of making the on-the-job supervisor part of training program development. With this type of training ownership, the supervisor is more inclined to make the program work. For example, when the training graduate returns to the work situation with new and worthwhile ideas, his supervisor will be more inclined to at least listen, and perhaps help in their implementation.
Training method selections

Training objectives should be carefully studied before selecting a training method or a combination of methods. For example, if the training coordinator wants the participant to learn new skills, the method should be an authoritative one-way communication type of method such as lecture. If the objective is one of attitude change or company management system awareness, a participative method such as seminar should be used. If both objectives are desired, a mixture of methods should be used and care taken to ensure the correct mix.

In the majority of firms this type of evaluation was not performed; and, consequently, the training coordinators' judgement was heavily relied on.

Training participation

Supervisory training should be mandatory for all supervision when they are hired. Only 40 percent of the firms had mandatory training for supervision. Having training for only a portion of a firm's supervisory population (at different years of supervisory experience) could conceivably be worse than no training at all because it results in having supervisors with different skill levels. The company sends an employee through supervisory training ostensibly with the objective of increasing skills or modifying attitudes. This employee is exposed to
training and then returns to his work environment. The company runs the risk of an employee being completely demotivated if his on-the-job supervisor or co-supervisor does not understand, support, or implement any of his suggestions.

Training costs

Companies should determine cost of developing and sustaining a training program. Only one company had a realistic cost figure on putting a participant through a training course. If the worth of training is ever to be determined, one of the basic criteria is to determine its cost. The net value of training will always be difficult, if not impossible to determine. However, this does not preclude the requirement for knowing its cost in order to make some sort of training assessment.

Class size

With class sizes at such small levels (modal size 12 to 15), all training coordinators should take advantage and become familiar with each participant's background such as functional work area, responsibilities, supervisory experience, formal educational level, and other personal data. This effort is important because deficiencies or strong points can be evaluated and training customized to optimize its effectiveness in terms of students' needs and the firms' objectives.
Outside assignments

All training programs should require students to perform outside assignments to prepare for subsequent sessions. Only 60 percent of the companies required outside work. This means that in 40 percent of the cases, the total investment on the part of the trainee was attending training sessions and in 80 percent of those cases, this was on company time.

Training without personal time investment could merely be a welcomed respite from a regular job. What the student brings to the training session is a myriad of past experiences from varied work backgrounds. This situation burdens the instructor on a "real time" basis; he must present new concepts, discuss their work implications, and then try to start an interchange of information among participants.

Training examinations

All companies should give participants quizzes or examinations during or after course completion. It was found that only 50 percent of the companies gave examinations and these ranged from an informal quiz to a formal examination. Even though high scores on examinations do not guarantee effective performance on the job, they provide the student and the instructor with a common information base about what is being learned. This also provides the training process with discipline and structure—
discipline in the sense that the student is required to learn a body of information, and if he does not, takes the risk of a low score on his examination. It gives the training process structure in that reading or workbook assignments are like milestones giving the student some direction or objective with time parameters assigned.

Training evaluation

Training should be evaluated on a more formal basis. Apparently, most of the firms used a common sense approach to evaluating their programs. Firms must devote more time to establishing some predetermined guidelines to evaluate their programs. Perhaps the evaluation should be performed by personnel outside the training department with the hope of bringing more objectivity into the evaluation process. Training coordinators would not go to great lengths objectively describing the shortcomings of the program if this evaluation would adversely affect their job security.

Training instructors

Training instructors from line organizations should be selected not only for their expert knowledge in a particular subject, but also for the ability to apply this knowledge to different work. Training is of little value to the participant if he cannot relate the knowledge to his own work situation.
Training start times

Training sessions should begin in the morning, if at all possible, before the participant becomes preoccupied with his normal day-to-day problems as a first line supervisor. When training starts in the afternoon, the participant walks into a training session thinking about the events that occurred earlier, and it takes a prohibitive amount of time for him to direct his full attention to training.

The majority of these recommendations relate to the need for evaluative checks and examinations of the training process. The training process must be examined in terms of subject matter, instruction methods, criteria and levels of participation, class size, training costs, assignments, examinations, instructors, training start times, training frequency and duration, and evaluation methods. Without critical scrutiny of each of these factors, there will always be great conflicts of subjective opinion regarding the worth of supervisory training to a company.
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APPENDICES
APPENDIX I

LETTER TO TRAINING DIRECTORS/COORDINATORS

9784 Spruce Court
Cypress, California

Dear

As part of my work toward satisfying the requirements for a Master's Degree in Business Administration at San Fernando Valley State College, I am gathering data for a thesis dealing with "Formal 'In-House' Supervisory Training Programs in the Aerospace Industry." The training being studied is first line level, involving those supervisors who have hourly (non-salaried) employees reporting to them. Since a total of only fifteen firms have been chosen for this study, your response will be highly valued and critical to the validity of the analysis.

This study will involve obtaining supervisory training data pertaining to: (1) training objectives, methods of instruction, content of instruction and other pertinent information, and (2) participants' (trainees) reaction to the training program.

Two questionnaires have been prepared which will enable me to obtain this type of data. One is designed to be completed by you which will describe your program. The second is to be completed by a representative sample of recent graduates of the program. The selection of the representative sample is left to your discretion with a minimum of ten participants requested. This sample can be drawn from one or several sections, departments, or laboratories. It is requested that the personnel selected are from the same shift so that responses to questions regarding hours of instruction can be properly evaluated.

I would appreciate the privilege of including in this study and I need your input as soon as conveniently possible. I assure you that your response will have complete anonymity in any discussions or published study, and a summary type analysis and results will be made available to you upon request.

Respectfully,

F. A. Ursich
APPENDIX II

SUPERVISORY TRAINING QUESTIONNAIRE

To be completed by Training Specialist

INSTRUCTIONS:

Please answer the following questions as completely and thoroughly as possible. If the space provided is inadequate, please utilize the blank pages attached to the questionnaire.

1. What is the title of your program?

2. Is your training course "custom designed" or a purchased "packaged" program?

3. What are the program long range objectives?

4. What are the immediate objectives (i.e., means to accomplish long range objectives)?

5. What major topics are included in your supervisory training program? If possible, could you attach a course outline of your program?

6. What methods of instruction are used? (i.e., lecture, conference, case study, role playing, sensitivity training, business games, teaching machines, films, etc.). Please elaborate on how this/these method(s) is/are utilized.

7. On what basis did you select the/these method(s) of instruction?

8. Why did you select the type of training program you are using (i.e., "custom designed" or "packaged")?

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9. Who teaches your training course (i.e., company training staff, line personnel, university/college professors, outside consultants, etc.)? Please describe how the training personnel are used.

10. How are the trainees selected for participation in your program (i.e., who makes the selection and what special requirements are established for program participation)?

11. For the sample trainee group selected for this study, what is the average length of service in a supervisory position?

12. What is the average formal education level attained by the trainees (i.e., high school graduates, two years college, college graduate, etc.)?

13. Are your training personnel familiar with the trainees' backgrounds?

14. What is the average number of pupils in a class?

15. What cost factors are considered when trying to arrive at an average cost of training one participant? If available, please note the average cost of placing one trainee through your program.

16. Where are your training sessions held (i.e., company lecture hall/conference room, university/college, hotel, etc.)?

17. What are class start and stop times? Is this during working hours?

18. What is the total number of training sessions? How frequent are these sessions (i.e., once a week, twice a week, once a month, etc.)?

19. What type of instructional material was provided the trainees (i.e., text books, manuals, periodicals, models)?
20. Were the trainees given outside assignments? If so, what type?

21. Are the trainees given any sort of examination during or at the completion of the course? If so, please elaborate. Is the trainee and the trainee's immediate supervisor given the results of the test?

22. Do you find any shortcomings in your program? If so, please elaborate and state what measures you are taking to correct them.

23. What do you consider to be the strong points of your program?

ADDITIONAL COMMENTS:

If you are utilizing this space to further elaborate on a specific question, please note the question number.
APPENDIX III

SUPERVISORY TRAINING QUESTIONNAIRE

To be completed by Training Program Graduates

INSTRUCTIONS:

1. Circle the number (from 1 to 5) which best represents your reaction to supervisory training. The number 5 represents the most favorable reaction.

2. If the question does not specifically apply to your program, circle N/A.

3. After each block of questions, there is a space provided for your views on how you would improve the specific area. Please use the last page for any further recommendations you may have.

A. ORGANIZATION AND ADMINISTRATION OF PROGRAM:

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<tr>
<th>Question</th>
<th>Scale (1-5)</th>
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<td>1. Were the objectives of the training program clearly identified?</td>
<td>5 4 3 2 1</td>
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</tr>
<tr>
<td>2. Did the instructor/group leader explain how the instructional material would help achieve those objectives?</td>
<td>5 4 3 2 1</td>
<td>N/A</td>
</tr>
<tr>
<td>3. Did the objectives of the course match your personal objectives?</td>
<td>5 4 3 2 1</td>
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<td>4. Were the course objectives achieved?</td>
<td>5 4 3 2 1</td>
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<td>5. Did you find the program well organized?</td>
<td>5 4 3 2 1</td>
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<tr>
<td>6. Was it explained to you how and why you were selected for participation in this program?</td>
<td>5 4 3 2 1</td>
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<td>7. Did you find the class size was satisfactory for this supervisory training course?</td>
<td>5 4 3 2 1</td>
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</table>
8. Were the hours of instruction satisfactory for your particular work schedule? . . . . 5 4 3 2 1 N/A

9. Did the classroom atmosphere stimulate learning? . . . . 5 4 3 2 1 N/A

10. Was the number of training sessions adequate? . . . . 5 4 3 2 1 N/A

11. Did you find the length of each session satisfactory? . . . . 5 4 3 2 1 N/A

12. Was the total duration of the course satisfactory? . . . . 5 4 3 2 1 N/A

RECOMMENDATIONS FOR IMPROVEMENT:

B. PRESENTATION OF MATERIAL:

1. Was the method of instruction appropriate for supervisory training? . . . . 5 4 3 2 1 N/A

2. Did you find that the material presented was useful on the job? . 5 4 3 2 1 N/A

3. Were the supervisory principles/techniques presented in such a way to make the total job function of the supervisor clear? . . . . 5 4 3 2 1 N/A

4. Were the lectures or subject matter well organized? . . . . 5 4 3 2 1 N/A

5. Were the instructors' / group leaders' ideas expressed clearly? . 5 4 3 2 1 N/A

6. Was a sufficient amount of time allotted to the coverage of each subject? . . . . . . . . . 5 4 3 2 1 N/A

7. Did the sessions provide any workshop/laboratory for the practice of some of the techniques that were taught? . . . . . . . . . 5 4 3 2 1 N/A

RECOMMENDATIONS FOR IMPROVEMENT:
C. DISCUSSION:

NOTE: The number five (5) represents always and the number one (1) represents never.

1. Did the instructor lead most of the group discussions? ... ... ... 5 4 3 2 1 N/A

2. Were participants' examples of on-the-job situations presented for classroom discussions? ... ... ... 5 4 3 2 1 N/A

3. Did the instructor allow enough time to discuss those subjects the class found interesting or useful? 5 4 3 2 1 N/A

4. Were questions and class discussions encouraged when appropriate? 5 4 3 2 1 N/A

5. Were program participants allowed to respond to questions posed by fellow trainees? ... ... ... ... 5 4 3 2 1 N/A

RECOMMENDATIONS FOR IMPROVEMENT:

D. COURSE ASSIGNMENTS/EXAMINATIONS:

1. Did you find the instructional material useful in preparation for class participation? ... ... ... 5 4 3 2 1 N/A

2. Did you find the subject matter or assigned material useful on the job? ... ... ... ... ... ... ... ... ... 5 4 3 2 1 N/A

3. Did you find that the assigned outside projects helped in learning supervisory techniques? ... ... ... 5 4 3 2 1 N/A

4. Did the classroom sessions and outside assignments adequately prepare you for the examinations? 5 4 3 2 1 N/A

5. Did the instructor sufficiently cover the deficiencies in your examinations? ... ... ... ... ... ... ... ... ... 5 4 3 2 1 N/A

RECOMMENDATIONS FOR IMPROVEMENT:
E. GENERAL:

1. As a result of taking this course, do you feel that you can better handle on-the-job supervisory problems? 5 4 3 2 1 N/A

2. Could you use the knowledge gained in this course for a similar position in another functional department? 5 4 3 2 1 N/A

3. Would this type of training be beneficial to supervisors one or two levels higher? 5 4 3 2 1 N/A

4. Did the instructor/group leader know enough about "real world" supervisory problems? 5 4 3 2 1 N/A

RECOMMENDATIONS FOR IMPROVEMENT:

ADDITIONAL COMMENTS:
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<td>22</td>
<td>3.45</td>
<td>3</td>
<td>0.99</td>
<td>0.22</td>
</tr>
<tr>
<td>C-3</td>
<td></td>
<td>23</td>
<td>3.74</td>
<td>4</td>
<td>0.99</td>
<td>0.21</td>
</tr>
<tr>
<td>C-4</td>
<td></td>
<td>23</td>
<td>4.30</td>
<td>5</td>
<td>0.95</td>
<td>0.20</td>
</tr>
<tr>
<td>C-5</td>
<td></td>
<td>22</td>
<td>4.18</td>
<td>5</td>
<td>0.98</td>
<td>0.21</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>113</td>
<td>Avg. 3.76</td>
<td>3.5</td>
<td>0.99</td>
<td>0.21</td>
</tr>
</tbody>
</table>
### STATISTICAL TABULATION AND ANALYSIS OF PARTICIPANT GRADUATE RESPONSES (Continued)

<table>
<thead>
<tr>
<th>Group/Questions</th>
<th>Response Value</th>
<th>Total</th>
<th>Mean</th>
<th>Mode</th>
<th>Standard Deviation</th>
<th>Standard Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5 4 3 2 1 N/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>D. Course Assignments/Examinations</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Question</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D-1</td>
<td>5 11 5 - 1 1</td>
<td>22</td>
<td>3.85</td>
<td>4</td>
<td>0.92</td>
<td>0.20</td>
</tr>
<tr>
<td>D-2</td>
<td>3 7 6 1 4 2</td>
<td>21</td>
<td>3.19</td>
<td>4</td>
<td>1.30</td>
<td>0.29</td>
</tr>
<tr>
<td>D-3</td>
<td>1 5 3 2 2 10</td>
<td>13</td>
<td>3.08</td>
<td>4</td>
<td>1.21</td>
<td>0.35</td>
</tr>
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<td>D-4</td>
<td>- 5 1 - - 17</td>
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<td>3.83</td>
<td>4</td>
<td>0.37</td>
<td>0.17</td>
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<tr>
<td>D-5</td>
<td>1 4 1 - - 17</td>
<td>6</td>
<td>4.00</td>
<td>4</td>
<td>0.58</td>
<td>0.26</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>10 32 16 3 7</td>
<td>47</td>
<td>68</td>
<td>Avg. 3.59</td>
<td>4</td>
<td>0.69</td>
</tr>
</tbody>
</table>

| **E. General** |               |       |      |      |                    |                     |
| Question        |               |       |      |      |                    |                     |
| E-1             | 5 11 5 1 1    | 23    | 3.78 | 4    | 0.98               | 0.21                |
| E-2             | 7 6 4 - 1 5   | 18    | 4.00 | 5    | 1.05               | 0.26                |
| E-3             | 10 1 2 - 2 8  | 15    | 4.13 | 5    | 1.41               | 0.38                |
| E-4             | 11 6 1 3 1 1  | 22    | 4.04 | 5    | 1.22               | 0.27                |
| **Total**       | 33 24 13 4 5  | 14    | 79   | Avg. 3.99   | 5    | 1.17               | 0.28                |
| **Grand Total** | 199 249 155 41| 37 79 | 681  | Avg. 3.77   | 4    | 0.99               | 0.24                |
APPENDIX V

SUMMARY OF TRAINING COORDINATORS RESPONSES

QUESTION 1. "What is the Title of Your Program?"

<table>
<thead>
<tr>
<th>Company</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mechanical Hardware Operations Management Training Program</td>
</tr>
<tr>
<td>2</td>
<td>Supervisor's Role in the Management Function</td>
</tr>
<tr>
<td>3</td>
<td>Company Supervisory Institute</td>
</tr>
<tr>
<td>4</td>
<td>Management Affirmative Action Seminars</td>
</tr>
<tr>
<td>5</td>
<td>Wire Communication Services Employee Development</td>
</tr>
<tr>
<td>6</td>
<td>Basic Supervisory Training (New Supervisors) and Supervisory Skills Workshop (Experience Supervisors)</td>
</tr>
<tr>
<td>7</td>
<td>The New Supervisors Course</td>
</tr>
<tr>
<td>8</td>
<td>Elements of Supervision</td>
</tr>
<tr>
<td>9</td>
<td>Supervisory Management</td>
</tr>
<tr>
<td>10</td>
<td>Applied Employee Relations Conference</td>
</tr>
</tbody>
</table>

QUESTION 2. "Is Your Training Course 'Custom Designed' or a Purchased Package Program?"

<table>
<thead>
<tr>
<th>Company</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Part purchased (films) part custom (discussion)</td>
</tr>
<tr>
<td>2</td>
<td>Custom</td>
</tr>
<tr>
<td>3</td>
<td>Custom</td>
</tr>
<tr>
<td>4</td>
<td>Custom</td>
</tr>
<tr>
<td>5</td>
<td>Custom</td>
</tr>
<tr>
<td>6</td>
<td>Custom</td>
</tr>
<tr>
<td>7</td>
<td>Custom</td>
</tr>
</tbody>
</table>
QUESTION 3. "What are the Program's Long Range Objectives?"

Company

1. (a) Make better managers, and (b) provide an environment that encourages (or assures) self-development.

2. To help the trainee understand "our" (a) management system and how it works, (b) your responsibilities (supervisory) and functions within the system, (c) the types of relationships which must be maintained both within and outside your department, and (d) the communication skills required for dealing with people at various levels of the organization.

3. To prepare experienced, high potential, first-line supervisors and high salaried personnel for promotion to middle management.

4. Course designed for Space Division personnel at all levels. It is designed to acquaint management with the company Affirmative Action Program and with federal contract compliance.

5. This course is designed to teach personnel the basic principles underlying personnel policies, employee benefits, manager's/supervisor's responsibility to support and implement the company's Affirmative Action Compliance Program, and present meaningful exercises to develop skills in report and memo writing.

6. To encourage participants to become better managers by fully utilizing their employees.

7. Students will develop the ability to act in accord with the support of company goals, policies, and procedures; work successfully under company organizational management concepts; apply accepted principles and techniques in leading, motivating, and appraising employees;
and know when and where to obtain help from functional specialists.

8 To develop greater understanding of employees and their problems.

9 Develop first and second line managers for middle/upper management responsibilities.

10 Attendees change of practices and behavior should increase their effectiveness in dealing with people, make their tasks easier, and reduce employee problems and costly grievances. This promotes better understanding, job effectiveness, and product excellence.

QUESTION 4. "What are the Immediate Objectives (i.e., Means to Accomplish Long Range Objectives)?"

Company

1 Customized training.

2 To help get new supervisors started on the right foot. Accelerates information which might otherwise take a year to absorb through trial and error.

3 (a) To broaden the student's knowledge beyond the scope of his own division, (b) to increase the student's understanding of the company's business environment and the business flow through the company, (c) to expand the student's knowledge of management principles, (d) to enhance the student's managerial and supervisory skills, and (e) to increase the student's interest in continuing his own management education.

4 Upon completion of the course, the supervisor will: (a) understand why intensified efforts are necessary to achieve the Space Divisions Equal Employment Opportunity Goals, (b) know what EEO goals have been established and what results are expected for Space Division, (c) know the specific things he can do to achieve EEO results for Space Division, and (d) be able to identify common forms of institutional discrimination which he (the supervisor) must combat.
5 (a) Demonstrate an understanding of company's personnel policies and employees' benefits, (b) accept independent responsibility in achieving company's Affirmative Action Compliance Goals, and (c) show ability in writing effective business reports and memos.

6 To learn people-related skills, members of management must have to achieve long range supervisory objectives.

7 (a) To help students operate more effectively within the framework of company policy, federal and state legal requirements and those organizational inter-relationships which influence their day-to-day supervisory activities, (b) to improve the student's ability to make personnel decisions and take appropriate action in accord with, and support of, company's personnel related objectives, policies and procedures, (c) to increase the student's ability to manage and fulfill their union's relations and equal employment responsibilities within the confines of established policies and practices, and (d) to help the students relate more effectively with the various personnel functions in analyzing, processing and resolving his employee relations responsibilities and to know where and what kind of specialized help is available.

8 To develop supervisory awareness of employee attitudes, perceptions and motivations of subordinates.

9 (a) On-premise training/development, (b) after-hours education, and (c) on-the-job training/job rotation.

10 The practical and applied nature of the course provides the supervisor with knowledge, methods and techniques that he may use as soon as he returns to his job after completing the course. His immediate questions, based on current experiences, are promptly answered and the results used now, when they are most beneficial and instructive.
QUESTION 5. "What Major Topics are Included in Your Supervisory Training Program? If Possible, Could You Attach a Course Outline of Your Program."

Company

1. (a) Motivation, (b) discipline, (c) coaching, (d) grievance and complaint handling, (e) overcoming resistance to change, (f) listening, (g) planning and objective setting, (h) planning and managing your time, (i) giving instructions, (j) art of constructive criticism, (k) performance, appraisal, (l) delegation, and (m) decision making.

2. (a) Management and the supervisor, (b) supervisor's relationship to the organization, (c) administration of the labor agreement, (d) discipline, (e) job relations (employee relations), (f) employee services and safety, (g) training, education, library, and management development, (h) security, (i) motivation of employees, (j) communications, and (k) summary.

3. (1) Company management, (2) master schedule and program sequencing, (3) saving through value engineering, (4) facilities engineering, (5) overview of production, (6) company is people, (7) opportunity for continued training and education, (8) company organizations, (9) supervisor and salary administration, (10) supervisors legal role, (11) management principles, (12) aircraft marketing, (13) financial operations, (14) indirect and direct labor accounting, (15) interviewing and counseling, (16) equal opportunity, (17) management case studies, (18) zero defects, (19) the budget as a guide to managerial efficiency, (20) aerospace economics, (21) why the great need for managers, (22) management selection, (23) management communications, (24) quality assurance, (25) corporate long range planning, (26) supervisor and the medical department, (27) company management policy, (28) supervisory problem solving, (29) tool engineering, (30) impact of change on management, (31) meetings and presentations, (32) company plans and decisions, (33) industrial relations panel, (34) the company's future—a function of research, (35) material, (36) contracts, (37) manufacturing, (38) financial reports, (39) human relations in management, (40) cost reduction, (41) orienting and training employees, (42) educational goal.
setting, (43) airline economics, (44) aircraft evaluation, and (45) program analysis.

4 (a) Company EEO history, (b) identify and describe pertinent government and company EEO documents, and (c) examine the basis of discrimination in the United States.

5 (a) Personnel policies, (b) employee benefits, (c) affirmative action program, (d) overview and fog index, (e) form for a good memo, (f) word usage--syntax--grammar, (g) the art of writing a report, (h) analysis of assignments and review principles, and (i) final writing exercise and evaluation.

6 (a) Employee evaluation, (b) employee development, (c) employee counseling and interviewing, (d) communication, (e) motivation, (f) employee training, (g) discipline, (h) leadership styles, (i) setting objectives, (j) perception, (k) bringing about objectives, (l) listening, and (m) process of management.

7 (a) External and internal influences, (b) supervisory status and responsibilities, performance indicators and related actions, (c) labor/management relationships--affirmative action plan, and (d) staff assistance--selected personnel functions.

8 (a) Human relations and the supervisor, (b) the supervisor and organization functions, (c) the supervisor and perception, (d) communication and cause for breakdown, (e) communication and its implementation, (f) problem solving techniques and their application, (g) interviews and their applications, (h) human engineering and utilization of employees, (i) data processing and its implications for supervisors, and (j) the development of employees.

9 (a) Nature of management, (b) planning, (c) organizing, (d) controlling, (e) standards and appraisal, (f) communication, (g) motivation, and (h) improving managerial effectiveness.

10 (a) Executive presentation, (b) problem presentation, (c) labor law, (d) local union organizations, (e) company policy toward labor organization, (f) equal opportunity, and (g) review and evaluation.
QUESTION 6. "What Methods of Instruction are Used?"

<table>
<thead>
<tr>
<th>Company</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
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<tr>
<td>3</td>
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<td>5</td>
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<td>6</td>
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<td>7</td>
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<td>8</td>
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<tr>
<td>9</td>
</tr>
<tr>
<td>10</td>
</tr>
</tbody>
</table>

QUESTION 7. "On What Basis Did You Select the/these Method(s) of Instruction?"

<table>
<thead>
<tr>
<th>Company</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
</tr>
</tbody>
</table>
material available to emphasize specific points.

3 Methods of instruction are selected primarily by the individual session leader, although the company coordinator makes recommendations and coaches the speakers.

4 Method of training was selected in order to keep the student's individual attention. This type of training can be boring.

5 Past experience.

6 People absorb more by practicing the principles taught.

7 Method evolved through student recommendations and training staff analysis/critiques.

8 If the session objective was primarily one of additional change, then subjective techniques were used (conference, films, case studies). If the sessions were primarily dealing with new type of information, then the lecture and demonstration method was used. The session objectives determined the use of a particular technique. Very seldom was a pure technique used, i.e., all lecture, all role playing, etc.

9 (a) Acceptance by students over a period of years, and (b) input from previous evaluations/studies.

10 (a) Effectiveness of the method for the particular subject matter, (b) change of pace, (c) appropriateness for a group of 20-35, and (d) retention of subject matter after the completion of the course.

QUESTION 8. "Why Did You Select the Type of Training Program You are Using?"

Company

1 We felt we needed purchased material prepared by the "experts" to use as a base (nucleus) to expand on.

2 A task group of supervisors and their management was gathered to determine: (a) what do you need
to help you on the job? and (b) what would you like to have your supervisors get out of the proposed training program? This approach gave us specific subject matter pertinent to our problems and organization. Except for the basic principles of management, no packaged program would satisfy the needs.

3 We selected the custom designed approach so that the material would be closely related to the company's activities and needs. Also it was more economical for use to present the program in this manner.

4 None of the so-called "packaged" programs were capable of emphasizing the desired subject matter for our management personnel.

5 Department survey of participants.

6 We have the capability to design our own and we can design programs with the flexibility we need.

7 Most closely oriented to student needs.

8 It had to be pertinent to the common problems of our first level supervision.

9 (a) Acceptance by students over period of years, and (b) input from previous evaluations/surveys (same answer given by this company for Question 7).

10 This program was custom designed to specific needs and real life problems of our company. A packaged course would be too general. This was an "applied" course for all degrees of experience.

QUESTION 9. "Who Teaches Your Training Course?"

Company

1 Conference leaders are line managers and the personnel manager coordinates and helps prepare for the session. He is present at the session, but does not assume a directive role.

2 Training staff and other staff and line people. The instructors are selected for their indepth
knowledge on specific subject matter. A security representative handles security, a safety representative handles safety, etc.

3 A planned mixture of company training staff, company line personnel, university/college professors and outside consultants. The program is 50 percent principles of management (taught by outsiders) and 50 percent company management concepts and practices (taught by company personnel).

4 Company training specialist and line personnel who head the function they are discussing.

5 Company training staff and line personnel.

6 The company training staff researches, develops, presents and administers the training programs.

7 Company training staff.

8 Company training staff used as conference leader.

9 Two-man instruction team, includes regular trainer (from training staff) with assisting line (functional) representative.

10 The course was developed and presented entirely by the personnel division. Training personnel coordinated the program and presented portions of the material.

QUESTION 10. "How are the Trainees Selected for Participation in Your Program?"

Company

1 Department managers (from line) select participants with the help of the personnel department.

2 The selection is automatic. All newly appointed supervisors are scheduled; the only requirement is that the participant supervises others.

3 Attendees are recommended by their own division management and are reviewed and approved by the Management Development Department.

4 Mandatory for all members of management.
Line management--no special requirements.

Selection is made by the participant's department management.

Each new supervisor is enrolled in a mandatory supervisory training course.

Department supervision selects the participants.

Recommended by appropriate line and staff organization manager.

The program was designed for all supervision; bargaining unit supervision, non-bargaining unit supervision, and engineering supervision were instructed in separate groups.

QUESTION 11. "For the Sample Trainee Group Selected for This Study, What is the Average Length of Service in a Supervisory Position?"

<table>
<thead>
<tr>
<th>Company</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Six years shop experience.</td>
</tr>
<tr>
<td>2</td>
<td>A so-called pure-group (newly appointed supervisors) about six months. Some groups include reappointed supervisors who come back for a brush-up course and they average approximately five years supervisory experience.</td>
</tr>
<tr>
<td>3</td>
<td>Data not available.</td>
</tr>
<tr>
<td>4</td>
<td>This datum is not available, but an estimated average is about eight years.</td>
</tr>
<tr>
<td>5</td>
<td>Less than two years.</td>
</tr>
<tr>
<td>6</td>
<td>Data not available.</td>
</tr>
<tr>
<td>7</td>
<td>One to four months.</td>
</tr>
<tr>
<td>8</td>
<td>Unknown--has varied from two months to twenty years.</td>
</tr>
<tr>
<td>9</td>
<td>Zero to five years, the median length of service is 2 1/2 years.</td>
</tr>
<tr>
<td>10</td>
<td>Approximately eight years.</td>
</tr>
</tbody>
</table>
QUESTION 12. "What is the Average Formal Education Level Attained by the Trainees?"

<table>
<thead>
<tr>
<th>Company</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>High school graduates.</td>
</tr>
<tr>
<td>2</td>
<td>Tenth grade.</td>
</tr>
<tr>
<td>3</td>
<td>Data not available.</td>
</tr>
<tr>
<td>4</td>
<td>Average not available--range is high school graduate to PhD.</td>
</tr>
<tr>
<td>5</td>
<td>High school graduates.</td>
</tr>
<tr>
<td>6</td>
<td>High school graduates.</td>
</tr>
<tr>
<td>7</td>
<td>Two years of college</td>
</tr>
<tr>
<td>8</td>
<td>Unknown.</td>
</tr>
<tr>
<td>9</td>
<td>For line trainees the average is two years of college, and for staff trainees the average is greater than four years of college.</td>
</tr>
<tr>
<td>10</td>
<td>Three years of college.</td>
</tr>
</tbody>
</table>

QUESTION 13. "Are Your Training Personnel Familiar with the Trainees' Background?"

<table>
<thead>
<tr>
<th>Company</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Yes.</td>
</tr>
<tr>
<td>2</td>
<td>Yes.</td>
</tr>
<tr>
<td>3</td>
<td>Only in general terms (knowing that they meet the prerequisite requirements).</td>
</tr>
<tr>
<td>4</td>
<td>Only very generally.</td>
</tr>
<tr>
<td>5</td>
<td>Yes.</td>
</tr>
<tr>
<td>6</td>
<td>Very little, only knowing department affiliation.</td>
</tr>
<tr>
<td>7</td>
<td>Yes.</td>
</tr>
<tr>
<td>8</td>
<td>Not generally, except the knowledge gained through the sessions themselves.</td>
</tr>
</tbody>
</table>
9 Yes.
10 Yes.

QUESTION 14. "What is the Average Number of Pupils in a Class?"

<table>
<thead>
<tr>
<th>Company</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
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<td>8</td>
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<tr>
<td>9</td>
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<tr>
<td>10</td>
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</tbody>
</table>

QUESTION 15. "What Cost Factors are Considered When Trying to Arrive at an Average Cost of Training One Participant?"

<table>
<thead>
<tr>
<th>Company</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
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<td>3</td>
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<tr>
<td>4</td>
</tr>
</tbody>
</table>
5 No trainee cost involved. All participants were salary indirect.

6 Instructor and student time, facilities, supplies—average cost not available. Average cost per student not available.

7 Development, maintenance, instruction, student time. Average cost per student not available.

8 Not considered.

9 (a) Time-off job, (b) trainer's time, and (c) training aids. Average cost per student not available.

10 (a) Salary of attendee, (b) off-site location of classroom, (c) course development cost, and (d) salary of presenters, estimated cost/student $400/trainee.

QUESTION 16. "Where are Your Training Sessions Held?"

<table>
<thead>
<tr>
<th>Company</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Conference room.</td>
<td></td>
</tr>
<tr>
<td>2 Conference room.</td>
<td></td>
</tr>
<tr>
<td>3 Nearby conference center.</td>
<td></td>
</tr>
<tr>
<td>4 (a) Company training rooms, (b) company recreation center, and (c)</td>
<td></td>
</tr>
<tr>
<td>Long Beach Elks Club.</td>
<td></td>
</tr>
<tr>
<td>5 Company conference rooms.</td>
<td></td>
</tr>
<tr>
<td>6 Classroom on company premises.</td>
<td></td>
</tr>
<tr>
<td>7 Company conference room.</td>
<td></td>
</tr>
<tr>
<td>8 Conference room.</td>
<td></td>
</tr>
<tr>
<td>9 Conference room.</td>
<td></td>
</tr>
<tr>
<td>10 Off-site motel conference room.</td>
<td></td>
</tr>
</tbody>
</table>
QUESTION 17. "What are Class Start and Stop Times? Is This During Working Hours?"

<table>
<thead>
<tr>
<th>Company</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 12:00 noon thru 2:00 PM. One-half on student's time and one-half on company time.</td>
</tr>
<tr>
<td>2 9:00 AM-11:00 AM and 1:30 PM-3:30 PM. For swing shift, training is on the employee's own time unless a full group is formed for a 4:30-6:30 group.</td>
</tr>
<tr>
<td>3 7:30 AM to 4:30 PM during working hours.</td>
</tr>
<tr>
<td>4 8:00 AM to 5:00 PM during company time.</td>
</tr>
<tr>
<td>5 Start and stop times not given, however the training class duration is two hours, one-half company time and one-half employee's time.</td>
</tr>
<tr>
<td>6 8:00 AM to 4:45 PM during company time.</td>
</tr>
<tr>
<td>7 3:30 PM to 7:00 PM partially on company time and partially on employee time.</td>
</tr>
<tr>
<td>8 8:00 to 10:30 PM and 1:00 to 2:30 PM during working hours.</td>
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<td>9 3:00 PM to 6:00 PM weekly; 1/2 company time and 1/2 on employee time.</td>
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<td>10 8:30 AM to 4:30 PM during company time.</td>
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QUESTION 18. "What is the Total Number of Training Sessions? How Frequent are These Sessions?"

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<td>1 One per week and a total of thirteen sessions.</td>
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<td>2 Once a week with ten to fourteen sessions (fourteen in the case of those employees supervising a bargaining unit).</td>
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<td>3 Ten individual sessions for two consecutive work weeks.</td>
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<td>4 Four meetings per week. Total number of sessions not given.</td>
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Total number of sessions and frequency of sessions depend on program type: (a) Program A & C five consecutive work days, (b) Program B eight consecutive work days, and (c) Program C three consecutive work days.

Fifty hours of training, twice a week for a total of seven consecutive weeks.

Twice a week, total number of sessions not given.

Ten sessions with once a week frequency.

Five consecutive days at eight hours per day.

QUESTION 19. "What Type of Instructional Material was Provided the Trainees?"

**Company**

1. Standard reading material related to each session topic with appropriate supplementary articles from periodicals.


3. Individual instructors provide their own handout materials, and the management development coordinator provides a special, large three-ring divider notebook for the students to keep their handouts in.

4. Subject workbook.

5. Operating procedures, handouts, and films.

6. Company printed handouts of articles relevant to subjects discussed in class.

7. Company policies, procedures, and other handouts.

8. Selected handouts.

9. AMA package for Supervisory Management Course.

10. Specially prepared manual containing: (a) basic theory material, charts and graphs, (b) case studies, (c) exercises, (d) quizzes, (e)
discussion material, (f) company documents, and (g) company procedures.

QUESTION 20. "Were the Trainees Given Outside Assignments? If so, What Type?"

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QUESTION 21. "Are the Trainees Given Any Sort of Examination during or at the Completion of the Course? Is the Trainee and the Trainee's Immediate Supervisor Given the Results of the Test?"

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The same fifty question, true or false and fill-in quiz is given prior to the start of the course and at the completion of the course. The quiz is used as a basis for future subject emphasis in the program. For example, if twelve out of fourteen students miss the same question, this alerts us to the need for greater emphasis in this area of study. (Not known whether results given to supervisors of trainees.)

No.

No.

Report and memo writing projects had to be completed and evaluated by fellow participants and instructors. (Not known whether results given to supervisors of trainees.)

No.

Mid-course and final exam and test review if students requested. (Not known whether results given to supervisors of trainees.)

No.

No formal exams, however there were short quizzes from the programmed text.

Yes, each topic presented was followed by a test or case to evaluate. A final exam and evaluation was also used. Supervision of trainees not given test results.

QUESTION 22. "Do You Find Any Shortcomings in Your Program?"

Company

1 No comment.

2 The shortcomings are basically the same as any training program. The needs of each individual are different and are not always met. We evaluate each program at its conclusion and make adjustments accordingly. The changes include media, time of meetings, and subject matter refinement.
Recent changes include shifting the emphasis from 70 percent company practices and 30 percent management principles, to 50 percent company practices and 50 percent management principles. In the future, particular attention will be given to improved integration of the great number and variety of sessions presented during the two week period.

No, this particular program achieved its objectives particularly well.

From the student critiques received, more time should have been allotted to certain subjects.

Improved performance on the part of trainee graduates does not last. The company is considering a refresher course.

The time restriction has been the primary drawback. Company is considering "follow-on" in-depth courses.

No comment.

Keeping in synchronization with the total development needs of the company. Format presently used is the culmination of fifteen to twenty years of supervisory development.

Yes, a comprehensive evaluation indicated certain modifications were advisable. The changes were incorporated in the following cycles. Special courses were designed for later presentation: (a) a short refresher course to be attended once a year after the completion of the basic course, (b) a super-condensed one day course, and (c) a special section of the new union contract, its provisions, and impact.

QUESTION 23. "What do You Consider to be the Strong Points of Your Program?"

Company

Management involvement.

(a) Program usually meets the stated objective, (b) it impresses the participant with the fact that he is part of management and that he has staff personnel that he can call upon when he has
a problem, (c) the program allows enough dialogue for the students to realize that many of their problems are not unique, and (d) the "how-to" information helped several employees avoid trial and error headaches.

3 Strong points in the program are best identified by the objectives listed under Question 4, however there is another good aspect to this program. The students have expressed their appreciation to the Company for their investment in time and money to develop their skills. This has had a favorable effect in terms of motivation and loyalty.

4 The team reading. The students do not like this aspect of training, but they do understand the material when the course is completed.

5 Affirmative action program and report and memo writing.

6 Participants decide their own approach to self-improvement. They are not finished with the course at the end of formal training, but are asked to rate themselves in achieving their goals after sixty days. At that time they are given their course certificates.

7 Addresses itself to the new supervisor's needs early in his career.

8 Acceptance and interest of the participant.

9 (a) Small training groups, (b) line and staff cooperation/coordination, (c) good films, and (d) recognition.

10 (a) The program was total: that is, all major elements of supervisory relationships with subordinates and the personnel department are given, (b) material was pertinent, valid, up-to-date and job related, and (c) the presenters were of the position level to be authoritative, yet personal and responsible to the individual needs within each group.
APPENDIX VI

SUMMARY OF TRAINING GRADUATE RESPONSES
TO OPEN-ENDED QUESTIONS

Group A. Organization and Administration

Recommendations (Some statements were not recommendations, but interesting comments)

1. (a) I would recommend having more than one general program. For example, a first line supervisor does not get involved with the same type of problems as a manager has, and (b) a few of the subjects could be combined leaving more time for those topics which need more discussion.

2. A two hour session once monthly would be plenty and gratifying for a first line supervisor featuring experts on the subject matter: job technology, data systems, union (fair play), costs and control, personnel policies, etc. The most pronounced topics at the sessions motivation, stimulation, etc., are great for a kid out of college or a passing-line.

3. (a) Recommend additional courses, and (b) recommend the length of each session be limited to one hour.

4. The overall program is excellent; however this program does not necessarily fit our company environment.

5. I do feel that more time could have been devoted to some of the sessions.

6. Time was not enough for a class session. Too many subjects and too varied. More time should be spent on one subject.

7. More time should have been spent in some areas.

8. Too busy.

9. Big Boss was on hand for the first session--good!
Group B. Presentation of Material

Recommendations

1. The film presentation was adequate for the type of information presented, however, the workshops provided were not complete enough for the personnel present.

2. (a) More supervisory problem solving would help to illustrate points made during the lectures, and (b) a quiz covering the subject matter.

3. Needed more time in some areas.

Group C. Discussion

Recommendations

1. Recommend more examples of actual incidents such as grievances, personnel complaints and how they were handled by management.

2. Training could be improved if the discussion period were limited to like-environment personnel. Too much time was wasted listening to problems presented that would never occur in your own area.

3. Distribute a single sheet outline of points to be covered during the lectures the next day. This would help the participants prepare for the lecture.

4. This was one of the most interesting parts of the class.

5. How about off-premises sessions?

Group D. Course Assignments/Examinations

Recommendations

1. There should have been some case studies presented to personnel for learning techniques.

2. A number of very short examinations would have been very helpful in improving such a course.
Group E. General

Recommendations

1. The group leader or instructors had a tendency to concentrate on areas they were expert in, such as an engineering manager would discuss engineering problems, etc.

2. This type of class is always good—even if it is just a refresher type of course.

3. My supervision should take the course first.

Additional Comments

1. Program concept very good but difficult to put into daily application.

2. (a) Leadmen in our area have no formal training; seniority and qualification promote these personnel. I feel a training course in getting along with people, listening and other subjects would be helpful. This would promote better leadership; and (b) having morning sessions rather than afternoon class would help to absorb more material. After a busy day and travel to class make it difficult.

3. Good course because we knew everyone including group leaders.

4. The award of certificates is a good idea.

5. Participation should be on a voluntary basis.