MEASURING INDUSTRIAL LEADERSHIP AND ITS IMPLICATIONS FOR TRAINING SUPERVISORS

Dissertation

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By

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TABLE OF CONTENTS

Section I: Introduction  
Related Studies  1  
Background of Present Study  2  
Industrial and Social Setting  19

Section II: Methodology  
Chapter 1: Administration of Questionnaires  40  
Chapter 2: Specification, Definition, and Collection of Criteria  41  
   Definition of Criteria  47  
   Collection of Criteria  54

Chapter 3: Identification of Functional Leaders  
   Methodology  62  
   Results  64  
   Implications  66  
   Further Analysis  70

Section III: Relation of Criteria to Leadership Behavior  
Chapter 1: A Summary Investigation of the Criteria and the Foreman Behavior Description Form  75  
Chapter 2: Scaling the Items on the Foreman Behavior Description Form  76  
   Methodology  80  
   Results  84  
   Further Analysis  87

Chapter 3: The Relationships between Proficiency Ratings and Leadership Behavior  100  
   Rating Procedure  104  
   Results  106  
   Further Analysis  114

Chapter 4: The Relationships between Indices of Group Behavior and Leadership Behavior  118  
   Analysis of Absenteeism and Accident Rates  123  
   Analysis of Grievance and Turnover Rates  130  
   Further Analysis  139

Section IV: An Evaluation of the Effects of a Training Program upon Leadership Behavior, Attitudes, and Expectations  144  
   Methodology  146  
   Results  149
<table>
<thead>
<tr>
<th>Section V: Discussion and Summary</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chapter 1: Overview</td>
<td>159</td>
</tr>
<tr>
<td>Chapter 2: Summary and Conclusions</td>
<td>160</td>
</tr>
<tr>
<td>Chapter S: Summary and Conclusions</td>
<td>168</td>
</tr>
</tbody>
</table>

**Bibliography**

Appendix I: Instruments Administered in Measuring Leadership Attitudes, Expectations, and Behavior. 181

Appendix II: Instruments Administered in Scaling the Items on the Foreman Behavior Description Questionnaire. 186

Appendix III: Distributions of Leadership Behavior and Criteria Scores. 224

Appendix IV: Distributions of Leadership Behavior and Criteria Scores. 242
SECTION I
INTRODUCTION
History reveals the increasing extent to which society is dependent upon an ever expanding production potential. The standard of living in this and other countries is dependent upon maintaining production at its present peak or higher. Similarly, increasing the standard of living is largely dependent upon increasing output per unit input. Thus the whole problem of production and work output is basic to our way of life.

At one time, increased production was gained largely through refinements and advances in manufacturing techniques. Since the turn of the century, however, there has been an increased recognition of the human factor in production. Perhaps the first such formal acknowledgement came as a result of the work done by Taylor in the field of scientific management at the turn of the century. His experiments with pig iron handlers have become classics in their field. Another landmark is the early work of Munsterberg and the publishing of his book, *Psychology and Industrial Efficiency* (1913). With this psychology made its formal entry into industrial problems.

During the first part of the century the work by psychologists followed the lead of the earlier studies and was concerned almost exclusively with (1) the effects of physical conditions upon work performance and (2) the selection and placement of workers. This line of investigation continued
to grow and prosper and occupies an important position today.

During the late twenties some attention began to be focused upon the problems of the effects of social interaction and leadership upon group behavior. During the intervening period much has been done to show the effects of social conditions upon quality and quantity of work. Dashiell (8) gives a digest of research on the effects of various social factors on performance of tasks. Murphy, Murphy, and Newcomb (40) review the literature on competition and social facilitation.

On the other hand, little attention has been directed toward establishing relationship between differing kinds of leadership and group behavior by empirical method. It is true that there is an extensive literature on the relationships between foreman behavior and group behavior, but this is comprised largely of developments of the respective authors' personal philosophy and experience. Moreover some of the work such as that done by Lewin and associates is restricted to a laboratory situation in which the groups and the conditions may not be comparable to that found in a work group. Since it is the studies rather than the opinions concerning the effects of leadership on group behavior which are pertinent to this paper, the following pages will present a representative but not exhaustive summary of studies which
have been made.

University of Michigan

For several years the Institute for Social Research (composed of the Survey Research Center and the Research Center for Group Dynamics) at the University of Michigan has been carrying on studies in the general area of group dynamics and leadership. Three studies done by the Survey Research Center are especially pertinent to this paper, and as such, are summarized in the following pages. The studies in the order in which they will be discussed are as follows:

1. Studies with the Prudential Life Insurance Company
2. Studies with the Chesapeake and Ohio Railway Company
3. Studies with the Caterpillar Tractor Company

The objectives of the program have been stated by Katz (24, P. vii), "The general objective of the research program will be to discover the underlying principles applicable to the problems of organizing and managing human activity. A second...objective...will be to discover how to train a person to understand and skillfully use these principles." In this setting the dependent variable is conceived of as the behavior or performance of the group and the independent variables as the things outside the worker such as the incentives or things which the supervisor does.

Studies at the Prudential Life Insurance Company

This study was carried on among the clerical workers
at the home office of the Prudential Life Insurance Company in Newark, New Jersey. Its specific purpose was to investigate the relationships between supervision, morale, and productivity. A complete report may be found in a paper by Maccoby (31).

Two large departments were selected for the study. One, Ordinary Policy Department, contained six parallel divisions each of which duplicates the other divisions in the organization, type of work, and number of personnel. Each division is made up of eleven sections each of which performs a specialized function. The second department, the Debit Policy Department, had four divisions, each with four parallel sections.

For the purposes of this study twelve "high-low" productivity pairs were selected. Each of these pairs were doing the same kind of work with the same organizational structure. Ten of these pairs came from department "A" and two from department "B". Despite a relatively restricted range on the criterion variable, the differences between the pairs were statistically significant. No significant differences were found between the groups on an aptitude test. The employees in the groups also worked under similar physical conditions such as lighting, ventilation, etc. Furthermore investigations showed no significant differences in demographic data between the groups, nor were there significant differences on outplant factors such as satisfaction with housing, transportation, community lived in, etc.
Measures of productivity were computed by comparing the time taken to complete a given amount of work with a base indicating the time the same amount of work was expected to require. The base is composed of clerical time necessary to complete a given amount of work by a specified group during an arbitrary period. Since the base was the same for all units doing the same kind of work, the selections could be compared with each other for any given month.

The data were collected through free-response interviews with 24 section heads and 419 non-supervisory employees, in both high and low productivity sections. Different schedules were used with each of the groups. The responses to the schedule items were analyzed by grouping the data of all high (on productivity) sections and comparing that with a similar grouping of data for low (productivity) sections. Chi-square tests of significance were computed between the data as compiled in the high and low groups.

The results are as follows:

Production differences between section and divisions in the Debt Policy Departments and the Ordinary Policy Department are primarily a function of supervision and management. First-line supervisors in high production work-groups differ from those in low production groups in that they:

1. Are under less direct supervision from their own supervisors.
2. Place less direct emphasis upon production as a goal.
3. Encourage employee participation in the making of decisions.
4. Are more employee centered.
5. Spend more of their time in supervision and less in straight production work.
6. Have a greater feeling of confidence in their supervisory roles.
7. Feel that they know where they stand with the company.

Evidently, the lower production supervisors are so immediately concerned with the goal of production that they try to reach it by what seems to be the most direct route. They appear to lack understanding of the best means of achieving high production through the use of their own time in effectively motivating their employees. High producing supervisors, on the other hand, assume that the best way of attaining high production is to motivate their employees by enlisting their identification with the work to be done and by giving them a feeling of responsibility.

Though morale was related high in all units, the groups with higher production showed greater pride in their own work-groups. In addition to pride in the immediate work-group, there was more identification with division with high producing employees than among low producers. Other dimensions of morale, such as identification with the company, intrinsic job satisfaction, and satisfaction with job status were not found significantly related to productivity. (p.33-34).

Studies at the Chesapeake and Ohio Railway Company

This study (24) was undertaken among the section workers (maintenance of right-of-way) of the Pere Marquette district of the Chesapeake and Ohio Railway company. The main purpose was to determine some of the psychological factors relating to productivity and morale, and to establish the generality of the findings in the clerical study at the Prudential Life Insurance Company. In the latter sense the setting seemed most appropriate since:

The clerical situation is characterized by white collar groups, made up largely of young girls who are high school graduates and who work in large office
buildings in a metropolitan area. In the railroad situation the workers are all men who perform heavy, manual, outdoor labor, who live mostly in small villages and towns or on farms, whose median education is from the fifth to the eighth grade, who are mostly over 40 years of age. The employees who work in the clerical situation work in close physical proximity to other groups of company employees and to various levels of supervision. In the railway study contact between various maintenance of way gangs is limited. The railroaders are geographically separated from the central organization of the company and their contact with upper level supervision is restricted to occasional visits from the track supervisors. (p. 2)

The plan of research consisted of assembling 36 pairs of high-low productivity (according to supervisor's ratings) section and interviewing the 228 workers and 72 foremen involved. Two different interview schedules were developed, one for the workers and one for the foremen. The analysis of the data consisted of combining the responses to each question of all the high producing sections and comparing this compilation with a similar grouping of responses of the low producing sections.

Two major areas were explored, 1. the relationship between the foremen and the workers in their sections and 2. the attitudes of the workers towards their work situation. Four main findings appeared in the general area of relationship between productivity and supervision. They are:

1. High and low foremen do not differ significantly in degree of satisfaction with their jobs and other aspects of the work situation. (p. 22)
2. Low foremen do not clearly perceive their leadership role. High foremen are typically more aware of their position as leader and supervisor and
3. Foremen of high and low sections differ in their attitudes toward their men. Foremen of high sections are more positive toward their men, take a more personalized approach to them, and give more attention to problems of their motivation. (p.23)

4. Foremen of high producing sections evaluate their sections more highly than do foremen in low producing sections. (p.23)

The following are the main results in the area of the relationship between productivity and worker attitudes:

1. Men in high and low producing sections do not differ in satisfaction with the overall job situation, with the company, with their job status or wages. They also do not differ in many of their attitudes toward their work groups.

2. Men in high producing sections evaluate their work groups more highly than do men in low producing sections. This difference is significant only at the ten per cent level.

3. More men in low producing sections than in high express intrinsic job satisfaction. (p.31)

Comparison of Results of the Studies of Clerical Workers and Railway Workers

Katz, D. et al. summarize the consistent findings between the two studies (24). The following is taken from pages 36 and 37 of their report:

Supervision and productivity

1. There is a direct relationship between section productivity and assumption of a leadership role by the supervisor.

2. There is a direct relationship between section productivity and the "employee-orientation" of the supervisor.

3. There tends to be an inverse relationship between section productivity and the supervisors feelings of pressure from above (not statistically significant in either study).

4. There is a direct relationship between section productivity and the first-line supervisor's
feelings of autonomy with relation to higher level supervision (not statistically significant in the railroad study).

Employee attitudes and productivity

5. There is a direct relationship between section productivity and the employee's evaluation of their work groups (not statistically significant in the railroad study).

6. There tends to be an inverse relationship between section productivity and employee intrinsic job satisfaction (not statistically significant in the clerical study).

Studies at the Caterpillar Tractor Company

In 1951 a comprehensive report of the above studies made at the Caterpillar Tractor Company at Peoria, Illinois, was published by the Survey Research Center (7). The only reference available to this author was that in Group Leadership by Gunnar Westerlund (56).

The Caterpillar Tractor study was designed for the purpose of investigating various areas of morale among all employees, and the inter-relationships among morale, supervisory practices, and productivity. (p.2)

Three sets of measures were used:

A measure of productivity furnished by company records. A measure of employee perceptions, attitudes, and opinions furnished by questionnaires administered to all employees. A measure of first level supervisory perceptions, practices, attitudes, and opinions furnished by questionnaires administered to all first-level supervisors. (p.95)

Productivity measures were based upon time study methods and were taken for a three month period preceding the administration of the questionnaires.

Those findings available to this author and pertinent to this paper are presented below.
A factor analysis of 20 attitudinal items administered to the employees to see if "...different patterns of satisfaction expressed by employees could be understood in terms of attitudes toward a few basic aspects of the work situation". Four factors emerged, three of which reflected some aspect of the job situation. They are: 1. satisfaction with the job, 2. satisfaction with the company, and 3. satisfaction with supervision.

In addition the following points are of interest:

More high than low producing employees say they get along with the foreman better than most of the other men. More high than low producing employees say the foreman takes an interest in them. More high than low producing employees report the foreman lets them know how they are doing. More high than low producing employees say it is easy to talk to the foreman about most things. More high producing employees say the foreman takes care of things right away. More low producing employees say the foreman lets things go.

With regard to first-level supervision, employees high in job satisfaction less frequently report that they are supervised too closely, are more apt to see the foreman as siding with the men, have more say about how the work is done, and are more satisfied with how much they have to say, get along better with their foreman, feel their foreman has sufficient autonomy, feel their complaints are taken care of, more frequently prefer to take their complaints to the foreman (while low satisfaction employees more frequently prefer to take their grievances to someone other than their foreman), more frequently feel that the foreman is the one who takes the most interest in them. (pp.93-95)

University of Iowa

At this point it might be interesting to note some of the work done by Lewin and his associates on the effects of differing leadership behavior upon group activity and struc-
ture. It is not as directly related to the industrial problem at hand as some of the other studies, since it deals with children's groups, takes place in a laboratory situation, and the groups had other reasons for their existence than the performance of the "task" in question; however, it is interesting from a methodological standpoint.

The experiment was conducted in 1939 and 1940 and has been reported in various journals and books (30) (41). As reported by Lippitt and White, the study has four objectives:

1. To study the effects on group and individual behavior of three experimental variation in adult leadership in four clubs of 11 year old children. These three styles may be roughly labeled as "democratic", Authoritarian", and "laissez-faire".

2. To study the group and individual reactions to shifts from one type of leadership to another within the same group.

3. To seek relationships between the nature and content of other group memberships, particularly the classroom and the family, and the reactions to the experimental social climates.

4. To explore the methodological problems of setting up comparative "group test situations" to develop adequate techniques of group process recording, and to discover the degree to which experimental conditions could be controlled and manipulated within the range of acceptance by the group members. (p.315)

The experimental design consisted of exposing in rotating order four groups of children to autocratic, democratic, and laissez-faire leadership and then observing the behavior of individuals and the group as a unit. The autocratic leaders were characterized by the following behavior: giving orders and disruptive commands, using praise and approval, and
having little active participation with the group as contrasted with the democratic leaders who provided alternative suggestions and developed goals through group discussion. The leader was objective rather than personal in his praise or criticism and functioned as a group member in a give and take relationship. The laissez-faire leader generally abstained from entering or interceding in any of the group activities.

Additional information was obtained through interviews with the children, their parents, and their teachers. Further insight was obtained through "test episodes" which were arranged with each club. At regular intervals the following situations occurred, 1. leader arrives late, 2. leader called away for indeterminate time, 3. stranger (janitor or electrician) arrives while the leader is out and carries on critical attack of work of individual group member, then of group as a whole.

When the data were analyzed the following results were obtained:

1. Two distinct types of reactions were shown to the same pattern of authoritarian leadership....All of the data indicate that three of the clubs responded with a dependent leaning on the adult leader, relatively low levels of frustration tension, and practically no capacity for initiating group action, while the fourth club demonstrated considerable frustration and some degree of channalized aggression toward the authoritarian leader....In both types of authoritarian atmosphere the members were markedly more dependent upon the leader than in either the
democratic or laissez-faire situation, dependence being somewhat greater in the more passive clubs. (p.321)

2. All other clubs showed a somewhat greater feeling of discontent in their relations with the adult leader than did the members of the democratic clubs, members of the "aggressive autocracy" being outstanding in their expression of rebellious feelings. (p.321)

3. In both authoritarian atmospheres there was a greater demand for attention from the adult. It appeared that the attention of the adult represented one of the few paths to more satisfactory social status in the authoritarian situation where all of the "central functions" of the group life were in the hands of the dominator.

4. The members of the democratic and laissez-faire groups initiated more friendly approaches to their leaders and "...more spontaneous exchanging of confidences about other parts of one's life experience in the democratic club atmosphere".

5. The data on "group-minded suggestions" to the leader show that the members in the democratic atmosphere felt much freer and more inclined to make suggestions on matters of group policy than in the other three group atmospheres. (p.322)

6. There were more expressions of irritability and aggression toward their fellow members in the autocratic than in democratic and laissez-faire situations. The in group tensions did not rise to a dangerous point, however, since the group was able to direct its aggression in other channels (toward the leader and out-group).
7. Interpersonal friendliness was nearly as high in the autocratic as the other two climates. "The underlying spirit of rebellion...seemed to be the cohesive force in aggressive autocracy...".

8. Intermember suggestions for group action and group policy were significantly lower in both types of autocracy than in the laissez-faire and democratic atmospheres. (p.323)

9. By having the leader arrive late it was possible to investigate the "groups" behavior in absence of initial leadership. The most evident finding was the extent to which "...work motivation was leader-induced in the authoritarian situation". In the democratic situation the absence of the leader had practically no effect; while there was an apparent rise in the amount of group productivity time when the leader was absent.

10. The clubs under democratic leadership avoided scapegoating as a channel of aggressive release.

The above data would indicate that less group unity and cooperativeness are present in the autocratic atmosphere than in the other two types. Similarly, the members of the autocratic group were less able to function productively in the absence of their leader. While it is dangerous to generalize these data to the industrial situation, it would seem that the autocratic would be the less desirable of the three methods, since it disrupts group cooperation and reduces initiative.
Ohio State University

In 1946 the Ohio State University instituted a 10-year program entitled Leadership in a Democracy. Its purpose is to study administrative behavior in our society within the framework of an interdisciplinary approach. Efforts are directed towards leadership as evidenced in industry, government, and education. In conjunction with the interdisciplinary approach, the methods used include those of psychology, sociology, economics, industrial engineering and to some extent history and anthropology. A statement of terms and research design may be found in an article by Morris and Seeman (39). An equally informative statement of the background of the program together with its early development of problems encountered in interdisciplinary research is contained in a paper by Shartle (48), Studies of Leadership by Interdisciplinary Methods. In the same article (p.7-8) Shartle summarizes their approach to the study of leadership as follows:

1. We reject, for the time being at least, the trait approach to the study of leadership.

2. We shall study leadership primarily in terms of what activity takes place rather than in terms of what any of us consider "good or bad" leadership.

3. We must study leadership in relation to other phenomena.

A number of papers have been written concerning research that has been and is being carried out. The following sum-
marizes one of the pertinent papers. While not dealing with an industrial situation, it is concerned with a similar problem and uses slightly different versions of the same instruments as used in the main body of this report. The study was carried out as one sub-project of the broader group of "studies in Air Crew Composition".

In brief the investigation concerned itself with the relationships between descriptions of the airplane commanders' leadership behavior by the members of his crew and two measures of the same airplane commander's combat performance in Korea. A complete report may be found in a paper by Halpin and Winer (15).

Descriptions of leadership behavior of 52 B-29 airplane commanders were secured by administering the Leader Behavior Description Questionnaire to 353 members of the above mentioned crews. All forms were administered while the crews were at the Combat Training School, MacDill Air Force Base, Florida, during the Autumn of 1950.

Additional information was later obtained in Japan:

During the summer of 1951, data were collected in Japan on 33 of the 52 Airplane Commanders who had been described by their crews at MacDill Air Force Base. Data from three sources are pertinent to the present inquiry. First, 29 of the 33 commanders were described again on the Leader Behavior Description Questionnaire. Second, the squadron and wing superiors evaluated all 33 commanders with respect to 7 criteria of combat performance. The commanders were evaluated by from one to four raters, with 73 per cent of the ratings secured from more than a single rater. Third, the members of 27 of the original 52 crews an-
swered the sociometric question, "If you could make up a crew from among the crew members in your squadron, whom would you choose for each crew position?" The ratio between the number of votes the incumbent commander received and the number of votes cast was used as an index of the crew's preference for his leadership. Thus, the data consist of two descriptions of the leaders behavior—one in training and one in combat; and two evaluations of his combat performance, one by his superiors and the other by his crew. The superior's ratings, corrected for bias, and the Sociometric Index were then correlated with the Consideration and Initiating Structure scores ascribed to these commanders by their crews, both in this country and in the Far Eastern Air Force. In each case, partial as well as zero order correlations were computed; that is, for the Consideration with Initiating Structure scores partialed out, and for the Initiating Structure scores with the Consideration scores partialed out. (14, p5)

The following are excerpts of the findings as summarized by Halpin:

In both the training and the combat situations there is a trend toward negative correlations between the superiors' ratings and the Consideration scores, and positive correlations between these ratings and the Initiating Structure scores. The partial correlations accentuate this trend, which is more marked in the combat situation than in the training situation. One notes particularly that in the case of the rating on "overall effectiveness as a combat crew member", which rating perhaps best represents the way the superiors in day-to-day operation, evaluate the airplane commander, both partial correlations based upon the crews' perception of the Commander's behavior in combat are statistically significant.

On the other hand, the correlations between leadership dimensions and the Sociometric Index show a trend in the opposite direction. The zero and first order correlations between the Sociometric Index and the Consideration scores, whether in training or combat, are positive and statistically significant. Conversely, the correlations with Initiating Structure scores, although not consistently significant tend to be negative. (14, p.5,7)
Background of Present Study

The review of previous literature while not exhaustive is designed to present some of the most relevant work that has been done in the field. Thus the Michigan studies deal with a problem similar to ours in an industrial situation. The work by Lewin and associates has become a classic in the field, and the work done at Ohio State University bears upon a similar problem and uses the same instruments as adapted to the air force situation.

The review was deliberately selective since this study's primary orientation is directed toward a continuation of a prior investigation by Fleishman (10). Hence, it is advisable to devote a considerably disproportionate amount of space to reviewing Fleishman's work. It is hoped that such emphasis will lend greater continuity to the research as well as familiarizing the reader with the instruments.

The following pages will present an abridged summary of Fleishman's work. A complete copy is on file at the Ohio State University Library.

Fleishman's study was oriented toward the goal of investigating "...the relationship between what the foreman does leadership-wise with his group, and the attitudes about leadership of those above him in the organizational structure. Also to be investigated is the extent to which certain leadership attitudes are maintained by foremen over periods of
time elapsed since training, under different kinds of "leadership climate" in the industrial situation." (12, p. 24)

The initial phases of the study were directed toward developing questionnaires for measuring leadership behavior, attitudes, and expectations. The instruments ultimately used in his main study were based upon the Leadership Behavior Description Questionnaire originally developed by Hemphill and Coons as part of the Ohio State Leadership Studies (17). The questionnaire was an attempt to develop an objective method of describing how a leader operates in his leadership role. A complete history of the development of the instruments may be found in a report by Halpin and Minner (15).

The instrument as originally developed consisted of one hundred and fifty items scored in nine categories. A one hundred and thirty item revision of this instrument was later factor analyzed using an extension of an iterative factor analysis technique described by Wherry and Gaylord (58) and later by Wherry, Campbell and Perloff (57). Other investigators have found that the method yielded results comparable to those obtained by standard procedures (57).

The analysis revealed four factors which were rotated for orthogonality and then for meaningfulness. The following paragraphs present the four factors and their definitions:
1. Consideration: "High positive loadings on the consideration factor are associated with behavior indicative of friendship, mutual trust, respect, and a certain warmth in the relationship between the airplane commander and his crew. High negative loadings appear on items which suggest that the commander is authoritarian and impersonal in his relations with members of the crew." (14,p.3) Item examples are:

- Helps crew members with their personal problems.
  (positive loading)
- Refuses to explain his actions.
  (negative loading)
- Is friendly and approachable.
  (positive loading)

2. Initiating structure: Items with high positive loadings on this factor "...imply that the airplane commander organizes and defines the relationship between himself and the members of his crew. He tends to define the role which he expects each member of his crew to assume, and endeavors to establish well-defined patterns of organization, channels of communication, and ways of getting things done." (14,p.3) Item examples are:

- Tries out his new ideas on the crew.
- Makes his attitude clear to the crew.
- Assigns crew members to particular tasks.

3. Production emphasis: "This factor appears to measure a manner of motivating the crew to greater activity by emphasizing the mission or job to be done." (15,p.29) Sample items are:

- Encourages overtime work.
- Schedules the work to be done.
- Stresses being ahead of competing crews.

4. Sensitivity: "...this factor appears to measure the airplane commander's sensitivity to and awareness of social interrelationships and pressures existing both inside and outside the crew." (15,P.20) It is a sensitivity to social factors or a social awareness dimension. Sample items are:

- Asks for sacrifices for the good of the crew.
- Aware of conflicts when they occur in the crew.

The last two factors were minor in that each contained fewer items, and had a less clear cut factor pattern.
Stencils were constructed based upon the above analysis and were used to score papers from air force populations. The question remained of how applicable were these stencils when applied to an industrial population. To answer this question the instrument called *Supervisory Behavior Description* was administered to a pretest sample of three hundred foremen representing seventeen different plants. The instrument contained one hundred and thirty items used in the air force population, reworded to fit the industrial situation and six additional items. The questions were phrased so that the foreman described the behavior of their supervisors.

In addition two parallel forms were administered in the pilot study:

1. **Foreman's Leadership Opinion Questionnaire**: A one hundred and ten item questionnaire aimed at getting the foreman's own attitudes about how he should operate with his particular work group. The items were similar to those in the *Supervisory Behavior Description*, but were worded to apply to the foreman's own opinions as to how often he should do what each item described.

2. **Supervisory Attitudes Description**: Another one hundred and ten item questionnaire aimed at determining what the foreman thought his boss expected of him or how he expected to work with his work group.

All of the three forms were scored on the same four dimensions. The revision of each of the three forms will be dis-
Revision of Supervisory Behavior Description

The four dimensions of the Supervisory Behavior Description form revealed uniformly high inter-correlations ranging from .55 to .80. In other words, the categories of leadership behavior were not independent in an industrial situation as they were in an Air Force situation. The instrument thus required some revision if it was to be used.

In effecting a revision two types of analysis were made:

1. Response distributions of each item were noted and items which showed a restriction of range of responses were eliminated from the revised form.

2. Tetrachoric correlational coefficients were computed between each item and the total score for the dimension in which the item was placed. This yielded indices of internal consistency. In addition, each item was correlated with the other dimension scores. This revealed the sources of overlap in the dimensions.

An inspection of the correlations, mentioned above, showed that most of the item correlated highly with the dimension score in which they had been placed, but they also showed correlation with the other dimension scores.

In order to compare the loadings and factor structure of the air force and industrial population, the item-dimen-
sion correlations were considered as factor loadings of
the items on the four oblique (correlated) factors, and
new rotations were done in which transformations to or­
thogonality were accomplished by a method developed by
Wherry.

In this analysis, it was not possible to rotate the
minor factors (Production Emphasis and Social Sensitivity)
into more independent clusters. So in view of their high
inter-correlations with the other two dimensions (consid­
eration and initiation of structure) they were dropped from
the final form.

Items were selected which met the following criteria:
1. An item should have as close to a zero loading on
the other dimensions as possible.
2. An item should have a high loading on the dimension
in which it was included.

In addition an item should have a response distribution
which spreads over all or most response categories.

Twenty-eight items were selected for the consideration
dimension and twenty items for the initiating structure di­
mension. The items follow:

ITEMS SELECTED FOR THE REVISED FORM
OF THE SUPERVISORY BEHAVIOR DESCRIPTION
<table>
<thead>
<tr>
<th>Item No.</th>
<th>Consideration Revised Key</th>
<th>Orthogonal Factor Loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Consideration</td>
</tr>
<tr>
<td>1.</td>
<td>He refuses to give in when people disagree with him.</td>
<td>-.68</td>
</tr>
<tr>
<td>2.</td>
<td>He does personal favors for the foremen under him.</td>
<td>.40</td>
</tr>
<tr>
<td>3.</td>
<td>He expresses appreciation when one of us does a good job</td>
<td>.70</td>
</tr>
<tr>
<td>4.</td>
<td>He is easy to understand</td>
<td>.70</td>
</tr>
<tr>
<td>5.</td>
<td>He demands more than we can do</td>
<td>-.40</td>
</tr>
<tr>
<td>6.</td>
<td>He helps his foremen with their personal problems.</td>
<td>.32</td>
</tr>
<tr>
<td>7.</td>
<td>He criticizes his foremen in front of others.</td>
<td>-.49</td>
</tr>
<tr>
<td>8.</td>
<td>He stands up for his foremen even though it makes him unpopular.</td>
<td>.54</td>
</tr>
<tr>
<td>9.</td>
<td>He insists that everything be done his way.</td>
<td>-.52</td>
</tr>
<tr>
<td>10.</td>
<td>He sees that a foreman is rewarded for a job well done.</td>
<td>.70</td>
</tr>
<tr>
<td>11.</td>
<td>He rejects suggestions for changes</td>
<td>-.62</td>
</tr>
<tr>
<td>12.</td>
<td>He changes the duties of people under him without first talking it over with them.</td>
<td>-.69</td>
</tr>
<tr>
<td>13.</td>
<td>He treats people under him without considering their feelings.</td>
<td>-.72</td>
</tr>
<tr>
<td>14.</td>
<td>He tries to keep the foremen under him in good standing with those in authority.</td>
<td>.68</td>
</tr>
<tr>
<td>15.</td>
<td>He resists changes in ways of doing things.</td>
<td>-.57</td>
</tr>
</tbody>
</table>
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<tbody>
<tr>
<td></td>
<td></td>
<td>Consideration</td>
</tr>
<tr>
<td>16.</td>
<td>He rides the foreman who makes a mistake</td>
<td>-.61</td>
</tr>
<tr>
<td>17.</td>
<td>He refuses to explain his actions</td>
<td>-.72</td>
</tr>
<tr>
<td>18.</td>
<td>He acts without consulting his foremen first.</td>
<td>-.75</td>
</tr>
<tr>
<td>19.</td>
<td>He stresses the importance of high morale among those under him.</td>
<td>.73</td>
</tr>
<tr>
<td>20.</td>
<td>He backs up the foremen in their actions.</td>
<td>.62</td>
</tr>
<tr>
<td>21.</td>
<td>He is slow to accept new ideas</td>
<td>-.66</td>
</tr>
<tr>
<td>22.</td>
<td>He treats all his foremen as his equals.</td>
<td>.66</td>
</tr>
<tr>
<td>23.</td>
<td>He criticizes a specific act rather than a particular individual</td>
<td>.63</td>
</tr>
<tr>
<td>24.</td>
<td>He is willing to make changes</td>
<td>.78</td>
</tr>
<tr>
<td>25.</td>
<td>He makes those under him feel at ease when talking to him.</td>
<td>.86</td>
</tr>
<tr>
<td>26.</td>
<td>He is friendly and can be easily approached.</td>
<td>.82</td>
</tr>
<tr>
<td>27.</td>
<td>He puts suggestions that are made by the foremen under him into operation.</td>
<td>.87</td>
</tr>
<tr>
<td>28.</td>
<td>He gets the approval of his foremen on important matters before going ahead</td>
<td>.65</td>
</tr>
</tbody>
</table>
ITEMS SELECTED FOR THE REVISED FORM
OF THE SUPERVISORY BEHAVIOR DESCRIPTION

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Initiating Structure</th>
<th>Orthogonal Factor Loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Revised Key</td>
<td>Consideration</td>
</tr>
<tr>
<td>29.</td>
<td>He encourages overtime work.</td>
<td>.20</td>
</tr>
<tr>
<td>30.</td>
<td>He tries out his new ideas.</td>
<td>-.10</td>
</tr>
<tr>
<td>31.</td>
<td>He rules with an iron hand.</td>
<td>-.20</td>
</tr>
<tr>
<td>32.</td>
<td>He criticizes poor work.</td>
<td>-.18</td>
</tr>
<tr>
<td>33.</td>
<td>He talks about how much should be done.</td>
<td>-.20</td>
</tr>
<tr>
<td>34.</td>
<td>He encourages slow-working people to greater effort.</td>
<td>.17</td>
</tr>
<tr>
<td>35.</td>
<td>He waits for his foremen to push new ideas before he does.</td>
<td>-.07</td>
</tr>
<tr>
<td>36.</td>
<td>He assigns people under him to particular tasks.</td>
<td>.00</td>
</tr>
<tr>
<td>37.</td>
<td>He asks for sacrifices from his foremen for the good of the department.</td>
<td>.00</td>
</tr>
<tr>
<td>38.</td>
<td>He insists that his foremen follow standard ways of doing things in every detail.</td>
<td>.25</td>
</tr>
<tr>
<td>39.</td>
<td>He sees to it that people under him are working up to their limits.</td>
<td>-.17</td>
</tr>
<tr>
<td>40.</td>
<td>He offers new approaches to problems.</td>
<td>.36</td>
</tr>
<tr>
<td>41.</td>
<td>He insists that he be informed on decisions made by foremen under him.</td>
<td>.13</td>
</tr>
</tbody>
</table>
ITEMS SELECTED FOR THE REVISED FORM
OF THE SUPERVISORY BEHAVIOR DESCRIPTION

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Initiating Structure Revised Key</th>
<th>Orthogonal Factor Loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Consideration</td>
</tr>
<tr>
<td>42.</td>
<td>He lets others do their work the way they think best.</td>
<td>-.17</td>
</tr>
<tr>
<td>43.</td>
<td>He stresses being ahead of competing work groups.</td>
<td>.03</td>
</tr>
<tr>
<td>44.</td>
<td>He &quot;needles&quot; foremen under him for greater effort.</td>
<td>-.17</td>
</tr>
<tr>
<td>45.</td>
<td>He decides in detail what shall be done and how it shall be done.</td>
<td>.37</td>
</tr>
<tr>
<td>46.</td>
<td>He emphasizes meeting of deadlines.</td>
<td>.10</td>
</tr>
<tr>
<td>47.</td>
<td>He asks foremen who have slow work groups to get more out of their groups.</td>
<td>-.22</td>
</tr>
<tr>
<td>48.</td>
<td>He emphasizes the quantity of work.</td>
<td>.17</td>
</tr>
</tbody>
</table>

Revision of the Supervisory Attitudes Description and Foreman's Leadership Opinion Questionnaire

The analysis of the latter two forms, Supervisory Attitudes Description and Foreman's Leadership Opinion Questionnaire, was not as extensive as that for the Supervisory Behavior Description form. Only fifty of the items were included in the scoring keys. Dimension reliabilities, dimension incorrelations, and response distributions for each item were obtained.
The inter-correlations of the four dimensions on the Foreman Leadership Opinion Questionnaire were not as large as those on Supervisory Behavior Description. They ranged from .06 to .41.

The criteria for the inclusion of an item were two-fold:

1. The response distributions for each item.
2. The magnitude of the factor loadings, based on this industrial population, of parallel items on the Supervisory Behavior Description.

The Production Emphasis and Social Sensitivity dimensions were dropped from the revised form on the basis of their low reliability, .36 and .33 respectively, and on the basis of the analysis done on the Supervisory Behavior Description.

Forty items, twenty consideration and twenty structure, were selected for the final scale.

The dimension inter-correlations on the Supervisory Attitudes Description ranged between -.16 and .55. The same forty items selected for the Foreman Leadership Opinion Questionnaire were used, since this would facilitate comparisons between the two scores.

The forty items are as follows:

"Consideration" Revised Key

1. Refuses to compromise a point.
2. Do personal favors for people in the work group.
3. Speak in a manner not to be questioned.
4. Ask for more than members of the work group can get done.
5. Helps people in the work group with their personal problems.
6. Stand up for those in the work group under you, even though it makes you unpopular with others.
7. Insist that everything be done your way.
8. Reject suggestions for change.
9. Change the duties of people in the work group without first talking it over with them.
10. Resist changes in ways of doing things.
11. Refuse to explain your actions.
12. Act without consulting the work group.
14. Be slow to accept new ideas.
15. Treat all people in the work group as your equal.
16. Criticize a specific act rather than a particular member of the work group.
17. Be willing to make changes.
18. Put suggestions made by other people in the work group into operation.
19. Get the approval of the work group on important matters before going ahead.
20. Give in to others in discussions with your work group.

"Initiating Structure" Revised Key
1. Encourage overtime work.
2. Try out your own ideas in the work group.
3. Rule with an iron hand.
4. Criticize poor work.
5. Talk about how much should be done.
6. Encourage slow-working people in the work group to work harder.
7. Wait for people in the work group to push new ideas.
8. Assign people in the work group to particular tasks.
9. Ask for sacrifices from the men under you for the good of the entire section.
10. Ask that people under you follow to the letter those standard routines handed down to you.
11. Offer new approaches to problems.
12. Put the section's welfare above the welfare of any member in it.
13. Insist that you be informed on decisions made by people in the work group under you.
14. Let others do their work in the way they think best.
15. Stress being ahead of competing work groups.
16. "Needle" people in the work group for greater effort.
17. Emphasize meeting of deadlines.
18. Decide in detail what shall be done and how it shall be done by the work group.
19. Meet with the group at regularly scheduled times.
20. See to it that people in the work group are working up to capacity.

Administration of Revised Questionnaires:

Seven instruments were administered in the main study, each of which was based upon one of the three forms given in the pilot study. The forms administered and their definitions follow:
1. **Workers**: The workers were given two instruments:
   
   a. A Foreman Behavior Description instrument in which they described the way their foreman acted leadership-wise with his work group.
   
   b. A form entitled *How You Expect an Ideal Foreman to Act* in which they described their expectations concerning foreman behavior.

2. **Foremen**: The foremen filled out the three following questionnaires:
   
   a. A Foreman's Leadership Opinion Questionnaire in which they described the way they thought they should act with their work group.
   
   b. A Supervisory Behavior Description in which each foreman described the leadership behavior of his own boss.
   

3. A third set of questionnaires was administered to people who were named as their supervisor by foreman. They might be assistant general or general foremen, assistant superintendents, or superintendents.
   
   a. A Leadership Opinion Questionnaire: How he thinks he should lead the foreman under him.
   
   b. *What You Expect of Your Foremen*: A form in which the boss describes how he wants his foremen to lead their men.

One hundred and twenty foremen, three hundred and ninety-four workers, and sixty supervisors of foremen filled out questionnaires.

Each of the instruments was scored along the dimensions of Consideration and Initiation of Structure. Adequate reliabilities (.68-.98) were evidenced by both of these scales.

The foreman's description of his own supervisor's behav-
ior, the foreman's perception of what his supervisor expected of him, what the supervisor said he expected, and the supervisor's own leadership attitudes about leading foremen were considered aspects of "leadership climates".

The analysis of the data followed three directions:

1. Differences in leadership behavior and attitudes of foremen working under different leadership climates.

2. Differences in the attitudes and behavior of trained and untrained foremen.

3. Relative effects of training on foremen who return to different leadership climates.

Results of Study

A brief summary of Fleishman's results follows:

1. There were differences between foremen who worked under different leadership climates. Those foremen who worked under men high in consideration tended to behave more considerately and express attitudes which were higher in consideration than did those foremen who worked under supervisors who showed less considerate behavior and expressed less considerate attitudes. In a similar manner, those foremen who worked under men high in structure tended to show greater structure in their behavior and attitudes than did those foremen who worked under supervisors who were low in structure in their behavior and attitudes.
Similar trends were reported for other types of climate.

2. A pre and post administration of attitude scales to foremen, immediately before and after training at the central school maintained by the Company, showed a significant increase in consideration and decrease in structure attitude.

In the plant situation there were no significant differences between the trained and untrained foreman. There was a trend, however, in the direction of less consideration and increased structure for those foremen who had training. There was a significant decrease in consideration behavior for those foremen most recently trained.

3. The consideration behavior of the trained foremen conformed significantly more closely to group expectations than did the consideration behavior of untrained foremen; however, the trained foremen did not conform more closely to group expectations on the initiating structure dimension.

4. The leadership attitudes of the foremen were more like the leadership attitudes of their supervisors than like the attitudes of the workers. The leadership attitudes of the foremen and their supervisors were not significantly different. Differences between the leadership ideologies of the foremen and their workers were significant. The higher in the plant one goes, the higher becomes the structuring and the lower becomes the consideration expected toward the workers.
5. The most important variable effecting leadership behavior appeared to be the climate under which the foremen operated.

**Orientation of Present Study**

Fleishman's study presented evidence of the types of changes produced by the training program as well as some of the inter-relationships that exist in the leadership attitudes evidenced by various levels of supervision.

The changes that occurred in the behavior of the foremen who had received training only partially met the objectives of the course. Thus one of the objectives was to make the foreman more "human relations" minded. This objective was satisfied when the questionnaire was administered at the end of the course while they were still in the school setting. In the plant situation, it was not satisfied, since though not statistically significant, there tended to be a decrease in consideration and an increase in structure among trained foremen.

The question then arises, what is to be done about this discrepancy between training objectives and leadership. Two pathways are open. One is to attempt to revise the training course so that the objectives are more completely realized; the other is to investigate the relation of consideration and structure to actual criteria of job proficiency. This would entail a more rigorous inspection of the implications
of Fleishman's results.

The latter course was decided upon, and set the general purpose of the present study as: to investigate the relationships between leadership behavior, as indicated by the instruments Fleishman developed, and various criteria of job proficiency.

In general, the approach was directed at comparing the leadership behavior of the first line foreman with criteria derived from the foreman's work group. The only criteria which do not fit the general orientation are foremen proficiency ratings which were given by the foremen's superiors.

Organization of Subsequent Discussion

This section is followed by a brief sketch of the setting in which the study was made. The following pages are broken into three sections: 1. Methodology, 2. Results, and 3. Evaluation of a training situation. The study and the results are then summarized and further research implications laid out.

Industrial and Social Setting

The study was conducted in a midwest automotive plant employing five thousand people, of whom about three hundred are supervisors. The plant is located in a town of eighty thousand, according to the last census, (1950) and is the largest plant in the locality.

A large number of the workers live in rural or semi-
rural areas. A few of the workers have farms or work on farms during their spare time; thus some of the workers are not completely dependent upon factory operation for their livelihood.

Many of the employees have spent most of their working years at the one plant; hence, there seems to be a large percentage of long term employees. This is partly due to the limited employment opportunities offered within the locality, the relatively high wages, and apparently good working conditions offered at this plant.

Many of the members of management as well as the workers were born and raised in the community or its environs. Some of the men have known each other for many years both inside and outside the plant situation.

The general tenor of supervision is directed toward a close relationship between the supervisors and their men. Some of the top management, several echelons removed from the workers, are able to address many of the workers by their first names. This is a general policy of the management and is espoused by most individuals from the plant manager to the first line foreman.

The structural organization of the plant consists of a plant manager, assistant plant manager, and a general superintendent who seems to have the most direct contact with plant operation.
The plant is broken into divisions, each headed by a superintendent, who in most cases has an assistant. The divisions are composed of two or more departments, each headed by a general foreman, who in many cases has an assistant. The general foreman may be over one or more foremen. The actual range of number of foremen in any one department is from one to fifteen. Figure 1 illustrates the organizational structure of a typical division.
ILLUSTRATION OF FUNCTIONAL ORGANIZATION
OF ONE DIVISION

S.: Superintendent

A.S.: Assistant Superintendent

G.F.: General Foreman

A.G.F.: Assistant Gen. Foreman

F.: Foreman

Figure 1
SECTION II

METHODOLOGY
CHAPTER 1

ADMINISTRATION OF QUESTIONNAIRES

The same seven questionnaires used in Fleishman's study (see Appendix II) were administered to workers and members of management on company time in this study. These two basic groups of respondents were divided so as to yield three groups each of which received a slightly different set of questionnaires. The three groups were as follows: 1. workers, 2. foremen, and 3. men named by the foremen as their supervisor. The following pages will describe the sample of foremen selected, the instructions, and will include a further description of the three groups of respondents mentioned above as well as the physical facilities used in the administration of the forms.

Sample of Foremen

The foremen represented production departments, originating departments, stores, maintenance, inspection, and shipping. An attempt was made to include whenever possible the same departments which had participated the preceding (1951). This gave a continuity to the research which was very useful in the analysis of the data and in the administration of the questionnaires.

Workers were selected randomly from time keepers' records of each of the foremen's groups. At least three and sometimes as many as ten workers were used to describe each foreman.
The general foremen had the lists of men who were to come from his department, and it was his duty to see that the foremen were notified and the men sent to the designated room at the appointed hour.

**Instructions and Groups**

All forms were administered in groups of 20 people or less. This was felt to be the most efficient size of testing unit since the groups were small enough to allow some personal contact between the administrator and the respondents and yet large enough to process a sufficient number of people in a reasonable amount of time. The groups were scheduled one hour apart, e.g., 9 A.M., 10 A.M., 11 A.M., 1 P.M., and 2 P.M. Similar arrangements were made with the afternoon and night shifts.

The instructions were not rigidly defined for all groups. An attempt was made to talk with each of the groups on an informal basis and with as many of the individuals as possible before the questionnaires were administered. In this manner better rapport was gained, and it was possible to obtain some insight into the feelings, attitudes, and characteristics of the members individually and collectively. For instance, the early groups showed greater apprehension toward the questionnaires. This was not a problem with the later groups, because they had already seen many of their fellow workers attend the sessions. By fitting the instruc-
tions to the group, it was hoped to achieve a more uniform set among the different groups than might have been obtained by treating all groups as though they were identical in every respect.

Apart from the foregoing differences in treatment of groups, certain points of explanation and instruction were constant for all groups and presented in the same order. These points and their order were as follows:

a. This is being done though the Ohio State University.

b. This is a continuation of what was done the proceeding year.

c. This is part of a larger study of leadership which has included the Air Force, industry, and school systems.

d. Names are requested on a separate sheet of paper just to let us know who has filled out the forms.

e. No one will see the answers. "You can't do yourself or the people you describe any good or any harm".

f. Put aside all feelings of like or dislike. "All we want is a clear picture of how you feel. We don't care whether you hate him or like him".

g. This is voluntary. No one is required to fill out the forms. (Only 10 of 561 workers refused to fill out the forms.)

h. People at all levels in the plant will participate in the study.
i. If for any reason an honest opinion cannot be given, do not fill out the forms.

As indicated above three distinct groups filled out the questionnaires: 1. workers, 2. foremen, and 3. men named by the foremen as their bosses. Each of the three groups will be discussed below.

Five hundred and sixty-one workers constituted the first group to receive its questionnaires. They filled out the Foreman Behavior Description Questionnaire and then the form entitled How Would You Expect an Ideal Foreman To Act. They were urged to describe their supervisor, the man from whom they took most of their orders. Nothing was said about describing their organizational foreman, since some indication of the functional hierarchy within the plant was desired. Seventy-five workers described someone other than their organizationally designated foreman.

The workers were asked to write the name of the man they were describing on both of the above forms. They did not write their own names on the answer sheet, but on a roster. This was to let the administrator know who had filled out the forms. Both questionnaires were answered at one session.

A few groups were called in at the end of the regular sessions for the purpose of getting additional descriptions of specific foremen. This became necessary when some foremen were not described by any or most of their work group
when the choice of whom to describe was left to the discretion of the workers. These supplementary groups were not asked to describe a specific foreman, but instead, were asked to make their selection from a list of foremen which was read to them. This list was so structured that they had no alternative but to describe the foremen for whom descriptions were needed. In presenting the list the workers were told that a few more descriptions of certain foremen were needed, and if at the present they had any contact with any of them to select that person and describe him. These papers were noted and omitted from some types of analyses which followed.

One hundred and twenty-six foremen constituted the second group to receive questionnaires. All foremen were scheduled for two meetings. In the first session they filled out the Foreman's Leadership Opinion Questionnaire. The second meeting was devoted to filling out the forms entitled What Your Boss Expects of You and Supervisory Behavior Description. In the latter form they were asked to write the name of the person they were describing. As with the workers, they were urged to describe the person from whom they took most of their orders. Their own name did not appear on any of the papers. They were assured that no one would see their individual answers.

A third group was made up of 36 men who were named by
the foremen as their bosses. This group included superintendents, assistant superintendents, general foremen, and assistant general foremen. They filled out both forms (Leadership Opinion Questionnaire and What You Expect of Your Foremen) in one administration.

Physical Facilities

The forms were administered in a large room located in a building at the edge of the plant. The physical facilities were ideal. The light received from a long row of windows on each side of the room was adequate in most cases, and could be supplemented by overhead semi-indirect lighting. Temperature conditions were within a comfortable range, and with few exceptions the room was quiet.
CHAPTER 2

SPECIFICATION, DEFINITION, AND COLLECTION OF CRITERIA

The initial steps in the development of the criteria involved inspection of the nature and type of plant records maintained, as well as their manner of recording, tours through the plant, and conferences with members of the line and staff organization. Many possible criteria were investigated some of which were rejected because of specific deficiencies. The following is a list of the criteria investigated in the plant situation:

1. Scrap 7. Quality
2. Cost 8. Lost time accidents
4. Absenteeism 10. Grievances
5. Accidents 11. Rework
6. Turnover 12. Ratings of proficiency

In the final analysis, five of the twelve criteria mentioned were used (absenteeism, accidents, grievances, turnover, and ratings of proficiency). To these a sixth was added - a score derived from scaling the items on the Foreman Behavior Description Questionnaire along the dimension of how well the men liked working for foremen who displayed the various types of leadership behavior as presented by the questions. Each of the criteria are defined below as they were used in this study:

Definition of Criteria

Absenteeism refers to the number of days a worker is absent, excluding absence due to such things as layoffs,
jury duty, holidays, and illnesses which are known to be legitimate. Since all absences are recorded in terms of the reason for the absence, it was easy to exclude the above from the final tabulations.

The number of absents recorded for each foreman was divided by the number of men whose records were used to compile the total. In this way an index of number of absents per worker for a common unit of time was computed.

Accidents were defined in terms of the number of trips to the dispensary for treatment of injuries sustained while at work. Additional trips for the treatment of the same injury were not counted. Again the total record for each foreman's group was divided by the number of workers whose records made up the total figure and an index of accidents per worker for a common unit of time was computed.

It is important to note that the variable in question is reported accidents, rather than accidents as such. It is possible that job or personal factors might effect the reported figures so that they are not completely representative of "actual accidents" as determined by a definition common to all foremen's work groups.

Grievances were defined in terms of the number of grievances which were written and placed in the company files. It is possible that a number of grievances were settled at the lower levels without ever reaching company records.
As with the two previous criteria, grievances were adjusted for the number of men in the work group by dividing the number of grievances by the number of men in each foremen's group.

**Turnover** refers to the men who left the employ of the company. No attempt was made to analyze the reasons for leaving since the data was either missing or worded in such general terms as to almost meaningless.

Turnover records for each foremen were corrected in a manner similar to that used for grievance rates.

**Proficiency ratings** were defined in terms of a standard score given each foreman indicating his position within his own division as denoted by the number of first choices which a foreman received in a paired comparison rating procedure. All ratings were done by foremen's superiors.

**Like ratings** were defined in terms of the scores the foremen received when the Foremen Behavior Description forms were scored with stencils constructed from the scaling of the items on the above questionnaire along the dimension of how well workers liked working for foremen who displayed varying amounts of the behavior indicated by each of the questions.

### Sources of Error in Various Rejected Criteria

A question which arises is why were other criteria dropped from consideration after an initial inspection. The
obvious answer of "contamination" is all inclusive and says little. Therefore, some of the problems encountered will be discussed below. No attempt is made to present an exhaustive analysis, but it is hoped the reader will be given some idea of the sources of error in such data.

Rework: Inasmuch as scrap records had to be set aside, it was reasoned that the amount of rework which each foreman had would be some indication of the amount of material he was spoiling. This might or might not bear a close relationship to the amount of scrap, but it is nonetheless a valuable criterion itself from the standpoint of overall foreman efficiency.

An inspection of the data revealed several uncontrolled sources of "error" variance which could be neither measured nor eliminated. Perhaps the most basic difficulty was that the amount of rework time a foreman had was not entirely a function of his own mistakes. For example, in an attempt to reduce the costs of shuffling material back and forth across the plant, a foreman who received defective material was supposed to rework the material (if at all possible) even if the defective workmanship arose in another work group. The error becomes more apparent when it is pointed out that this rework time was not charged back to the erring department nor was it possible to separate this from rework attributable to a foreman's own work group.
Thus a foreman's rework record consisted of a compilation of that due to errors due to his own work group confounded with errors in other foremen's groups.

Cost is a matter of vital concern to management and is probably one aspect of an ultimate criterion. Thus it is very important that this be used if at all possible. As in previously discussed criteria, certain difficulties were inherent in administrative procedures which militated against its use.

Budgets are drawn up on a departmental level for three month intervals and are determined by expenditures in the past and estimates of what it will cost to run the department in the succeeding fiscal period. Thus meeting a budget is a function of two things, 1. the general foreman's ability to estimate what he will need and 2. his salesmanship is selling a higher budget than required. This latter procedure insures that he will remain within the allotted expenditures despite extravagant or wasteful management of funds.

Another source of error is in the area of "indirect expenses". By this is meant expenses accrued outside the lines of normal work operations. Examples of this would be rework, other than that attributable to a foreman's own work group errors, and maintenance costs of the department's physical plant. A department is held accountable for repairs and upkeep to their building or portion of the building which
they occupy. The effects of an old building or an extra heavy flow of rework from other departments can seriously upset a budget.

Production is another index which is related to, or is, one aspect of an ultimate criterion. Unfortunately it was unobtainable in this situation. The majority of the departments in this plant were concerned with assembly line operations, hence production criteria would be meaningless in these departments.

There were several originating departments which were not on assembly line operations which might have been used except for conditions peculiar to such departments. For example, the large and small press departments appeared to offer possibilities for a production criterion. The work of each individual was largely independent of any other worker and seemed tied only to the speed with which any press operator cared to work. However there were many different types of presses each scheduled to manufacture certain specific parts with little overlap in the schedules of different presses. Because of the size and shape of these parts, some of them could be made from salvage and others could be made only from new stock. Thus some press operators were working with new stock all of the time and others were working with either new stock and/or many different odd-shaped salvage pieces. The ratio of new to salvage
material differed widely. This imposed a penalty upon certain workers for many of the salvage pieces were awkward and difficult to handle. Since the workers were paid a piece rate, a correction factor had been determined, but this was in many cases an admittedly arbitrary figure, and since almost every worker's production would have to be corrected by one or more of these correction factors, they assumed great importance. In view of this, it was decided to reject production of these workers as a criterion.

Interaction of Criteria

Each of these criteria has been discussed as a separate item, but this does not imply their independence. These interactions were another factor considered in accepting or rejecting criteria. One example will be cited.

A department which incurs unexpectedly heavy expenditures outside its work operations is faced with the problem of trying to economize in other areas, such as increased production or the use of fewer personnel. These economy measures in turn might effect the relationship between the worker and his employer. It might result in greater output per individual, which in turn may have its effect in more accidents and perhaps greater absenteeism. It might affect quality of production and eventually take its toll in quantity of production if the pace is maintained over a long period of time. Such "economizing" measures may result in
an increase in rework for the department and for those departments which receive materials from them. Decreases in quality may result in greater scrap, etc. Neighboring departments are affected in turn according to their functional proximity to this department.

The foregoing illustrates the interdependence of some of these factors. Many criteria were originally dubious because of the manner in which they were recorded. Their relationship to this complex of factors threw enough additional doubt upon their validity to eliminate them from consideration.

Collection of Criteria

In establishing the methodology for the collection of the criteria two problem presented themselves:

1. How stable are these leadership patterns over any period which might be set aside for criteria collection. Can one assume for instance that leadership patterns as measured at one date are representative of the period over which criteria are going to be collected?

2. How far can one generalize the foreman behavior descriptions of several workers to the others who did not fill out the form, or how representative is the sample of each foreman's work group?

Since the answer to these questions is basic to the collection of criteria, the author will digress somewhat and explore possible answers to these questions. The implica-
ations of the findings and the resultant adjustments made in the preliminary plans are discussed.

Stability of Leadership Patterns

An inspection of the data gathered in both Fleishman's and this author's administration of the questionnaires revealed 98 foremen who were represented in both administrations, although they were not necessarily rated by the same workers.

Product moment correlations were computed between the consideration and initiation of structure scores which each of the foremen received in the two administrations. They are reported in table 1.

The correlations between the two administrations are low, but show some stability of leadership patterns between the two administrations.

Further analysis involved dividing the 98 foremen into two groups: one group of 39 foremen who had been to a training school during the intervening period, and a second group of 59 foremen who had no such training during the same period. Product moment correlations were computed for both groups and are presented in table 2.

The apparent differences between the "training" and "no training" groups are large. When reported in terms of significance of differences one difference (that for consideration) is significant at the six per cent level of confi-
Table 1

MEANS, SIGMAS, AND CORRELATIONS BETWEEN MEAN SCORES MADE BY 98 FOREMEN ON TWO ADMINISTRATIONS OF THE FOREMAN BEHAVIOR DESCRIPTION FORM WITH AN ELEVEN MONTH INTERVAL BETWEEN ADMINISTRATIONS

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>Sigma</td>
<td>Mean</td>
</tr>
<tr>
<td>Consideration</td>
<td>71.06 18.85</td>
<td>74.12 13.62</td>
<td>.35*</td>
</tr>
<tr>
<td>Structure</td>
<td>41.13 9.61</td>
<td>39.70 7.86</td>
<td>.27*</td>
</tr>
</tbody>
</table>

* Significant beyond the one per cent level of confidence.

Table 2

MEANS, SIGMAS, AND CORRELATIONS BETWEEN MEAN SCORES FOR TWO GROUPS OF FOREMEN: THOSE WHO HAVE HAD TRAINING (39) AND THOSE WHO HAVE HAD NO TRAINING DURING THE SAME PERIOD (59).

Training Group

<table>
<thead>
<tr>
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<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>Sigma</td>
<td>Mean</td>
</tr>
<tr>
<td>Consideration</td>
<td>70.62 13.76</td>
<td>72.14 12.98</td>
<td>.27**</td>
</tr>
<tr>
<td>Structure</td>
<td>43.17 6.37</td>
<td>40.77 7.31</td>
<td>.22</td>
</tr>
</tbody>
</table>

No Training Group

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>Sigma</td>
<td>Mean</td>
</tr>
<tr>
<td>Consideration</td>
<td>73.35 15.02</td>
<td>74.39 12.58</td>
<td>.58*</td>
</tr>
<tr>
<td>Structure</td>
<td>41.47 7.12</td>
<td>39.61 6.09</td>
<td>.46*</td>
</tr>
</tbody>
</table>

* Significant beyond the one per cent level of confidence.
** Difference between correlations for training and no training group significant at six per cent level of confidence.
dence. Thus the data would seem to indicate that the intervention of training in some way effects the scores of the workers so that the correlation of scores is reduced. This in turn suggests that it would be best to omit all foremen who have had such training from those parts of the study in which criteria were collected over a period of time (group behavior criteria).

The obtained correlations of .58 for consideration and .46 for structure should not be interpreted as reflecting the upper limit of the stability of leadership patterns over this time interval. Undoubtedly, some of the variance is attributable to, among other things, the use of different workers, in the two administrations, to describe the same foremen.

Some idea of the effects of using different workers can be gained from estimates of inter-rater agreement in describing the same foreman. Since the workers who filled out forms constituted a random sample of each work group, the overall index of inter-rater agreement might be considered representative of the consistency with which workers in general might regard their foremen. The higher the coefficient of inter-rater agreement, the less the importance to be attached to the use of different samples in the two administrations.

Because the number of men who described each foreman varied in size (three to ten), the Horst method (18) of com-
Computing inter-rater agreement was used. The obtained coefficients of agreement are listed in Table 3.

Table 3

<table>
<thead>
<tr>
<th>INTER-RATER AGREEMENT AMONG WORKERS DESCRIBING THE SAME FOREMEN IN BOTH THE TRAINING AND THE NO TRAINING GROUPS LISTED IN TABLE 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Consideration</td>
</tr>
<tr>
<td>Structure</td>
</tr>
</tbody>
</table>

The coefficients are low enough to support the idea that the use of different samples had the effect of lowering the "test-retest" coefficients. Furthermore, one would not expect the "test-retest" correlations to be any higher than the inter-rater agreement. Since the coefficients of inter-rater agreement are of the same magnitude as the "test-retest" coefficients, in the no training group, one is lead to believe that the obtained stability is considerably lower than might have been obtained had the effects of different workers not been present.

A more direct estimate of the effects of using different samples could be obtained if it were possible to identify papers filled out by the same worker describing the same fore-
man in both administrations. The procedure of gathering data was designed so as to preserve anonymity of the rater. However in a few cases it became obvious that two forms describing a given foreman had been executed by the same unnamed worker. It was possible to make some statistical analysis of such cases without regard to who the raters might be. There were 18 such cases. For these pairs of papers a rho was computed for both consideration and structure. The obtained figures were .87 for consideration and .75 for structure. This lends additional validity to the hypothesis that the low "test-retest" coefficients reported are partly a function of using different raters, since the pattern appears relatively stable for the sample of eighteen. This, however, does not minimize the differences found between the trained and the untrained groups since there is no reason to believe that the number of men who filled out the forms the preceding year was any different in the two groups.

Representativeness of Sample

Data discussed in the preceding paragraphs also have a bearing on the second of the two general problems stated in this section—to what extent can one generalize the foremen descriptions of a small sample of each foreman's work group to the remaining members of the same work group.

The material presented on inter-rater agreement suggests that it would be possible to generalize the descriptions of a small segment of the work group to other members of the
same unit, but it would involve considerable additional error, unless a much larger sample had been used to describe each foreman.

Although the effects of personal and job factors on descriptions of behavior are unknown it might be well to compare the composition of the sample with that of the work group. Such a comparison is implied when two random samples, one, the workers who describe their foremen, and two, another sample of at least ten men from each work group are compared. The latter sample is thought to be representative of work group characteristics since it is based on at least one-half the members of each group. The data is presented in Table 17, p. 122. A chi-square test of significance of the differences between the distributions of age, education, skill, seniority, marital status, and method of pay shows that on none of these variables is there a significant difference between the distributions. Thus one can assume that the sample is comparable to the groups from which it was drawn.

**Implications of the Above Findings for the Collection of Criteria Data**

The data indicate adequate stability of leadership behavior in the untrained group. This lends assurance that in using this group, data may be gathered over a period of time without fear of fluctuating behavior patterns.
The original plans had called for the use of a small sample of each foreman's work group to describe his behavior, and a larger sample from which such criteria data as absenteeism and accident rates might be collected. The low inter-rater agreement necessitated some change in these plans, for they pointed up the error involved in generalizing from the descriptions given by this sample to other workers who had not filled out the forms.

The ideal arrangement would involve collecting criteria from the actions of only those workers who described their foreman. Subsequent examination showed this was possible with absentee and accident records, but not with grievance and turnover reports because of the limited distribution of grievances if only a few workers were considered, or because if a worker had quit it was not possible to obtain a description of his foreman from him.

In summary: accident and absenteeism data were collected from those men who described their foreman, while grievances and turnover data were collected from the group as a whole. Similarly only foremen who had had no training during the interval in which criteria were collected were used.

All criteria were collected for the period between the two administrations - May 1951 to April 1952.
CHAPTER 3
IDENTIFICATION OF FUNCTIONAL LEADERS

One of the first steps in a leadership study is the designation of the leader. This may be done by accepting as leaders those individuals who hold leadership positions. This procedure is quite appropriate in some studies, but it becomes dangerous when one is interested in the effects of leadership upon group behavior, as in the present study, since holding a leadership position by virtue of office does not give assurance that the leadership behavior of this incumbent is the most important in influencing the behavior of the group. One can cite several reasons why this might be so:

1. The designated leader may be in "secondary contact" with his group, i.e., the leader's only contact with his group is through an intermediary who conveys all messages and orders. In this situation the important variable may be the leadership behavior of the intermediary. An apparently innocuous and thoroughly warranted order may be received with suspicion and doubt or with good faith and trust, depending upon the manner in which it is executed. The attitudes and behavior of the intermediary form the context within which the effects of leadership behavior should be studied.

2. The individual may reject the leadership responsibilities associated with his position. When this happens, the group may select an informal leader from the members of
their group, or may move horizontally or vertically within the existing structural organization in selecting a functional leader. This latter person may or may not have a structural position within the group.

3. The working relationships of the individuals may be such that in effecting convenience and efficiency of operation, the designated leader is technically, geographically, and/or otherwise ill-fitted to assume the duties, even though willing. The foreman who has too much territory to supervise must relinquish some of his leadership to other more accessible individuals. Similarly, the leader who is not equipped technically to handle problems as they arise must assume a subordinate position to another more qualified individual.

Such discrepancies have been reported in the plant in which this study was done (10). It therefore becomes doubly important that the groups in which such deviations occur be designated. The problem then becomes one of identifying those foremen who are both structural and functional leaders of their work group, and using their work groups in the study of the effects of leadership on group performance.

The following sections will illustrate the method used, the adjustments made in the sample, and some additional analysis done with the data at hand.
Methodology

In identifying the functional leader in each work group, two questions were asked:

A. Is the group in question responding to the leadership behavior and attitudes of the organizational foreman?

B. If not, to whose leadership is the group responding?

Some investigators when trying to answer similar questions have found some type of sociometric analysis helpful (9) (59). Thus the functional leader of a work group may be identified by asking workers to name that individual from whom they take most of their orders. In this way a group consensus is obtained and if there is substantial agreement in choice, it is possible to identify a common functional leader. Because of its prior usefulness an adaptation of the method was used in this study.

The most complete information concerning the problems at hand would be obtained through "polling" all workers. Unfortunately, this proved impossible because of the additional time and money necessitated over and above that needed for the administration of the questionnaires and processing of the data. Therefore, a modification was introduced and the information was obtained from the administration of the questionnaires, although only from the workers who filled out the questionnaires. In this way no additional time was needed, and although the resulting sociometric analysis did
not involve all workers in each group, it did identify the functional leaders.

The procedure used in identifying the functional leader was as follows: When the workers filled out the questionnaire in which they described their foreman, they were urged to describe that individual from whom they took most of their orders and were asked to write his name on their answer sheets. They wrote their own names on a separate roster, which was the investigator's way of knowing who had filled out the forms without overtly linking the individual with his paper. However, administration procedures made such identification possible.

In setting up the scheduling procedure each foreman was asked to send only one man at a time from his work group. Thus for each session no two workers were present from any one foreman's group, and the foremen represented were scattered over the entire plant and not from a single department. Since the groups were small it was possible to compare the lists of the foremen work groups represented and the lists of the foremen nominated as functional leaders. If a man were present from John Doe's work group, but if John Doe's general foreman or a foreman other than John Doe was nominated, it was possible to say that John Doe was not functioning as the workers' leader. This procedure yielded much the same information as the conventional sociometric method.
Results of Sociometric Analysis

The results indicated several points of importance to the main study, the most outstanding being the presence of ten foremen, seven from the day shift and three from the afternoon shift, who consistently were not seen by their workers as being that person from whom they took most of their orders.

There were two distinct trends in the direction of the displaced nominations. The workers on the first shift who did not nominate their structural foreman as their boss tended to select a person who was higher in the structural organization; while the workers on the second shift selected without exception, another first line foreman. This difference in direction of displaced nominations between the two shifts is explained by the absence of anyone higher than a first line foreman on the second shift. Apparently, the loss of nominations tends to follow the structural hierarchy when possible. The absence of the general foreman does not preclude the displacement of nominations, but does force them to move horizontally rather than vertically to another foreman who appears in some cases to assume a leadership role similar to that of a general foreman. This condition is confirmed in the statements of several of the workers who were asked, indirectly, to describe their structural leaders who were named specifically (See Section I, Chapter 1).
I won't describe him. He ain't my boss. My foreman is just a stooge for him. Everytime something happens, he runs and gets _____, and he comes and tells us what to do. I hate that guy.

Thus some workers refused to describe their structural foreman, not because of confusion, but active rejection. Other statements were obtained as corrobatory evidence, all of which add confidence to the sociometric analysis.

Figures 2 and 3 show the nature of the displaced nominations. Each of the figures have a series of subdivisions indicated by letters. Each of these subdivisions illustrates one of the general patterns of displaced nominations.

Each of the lines leading to an arrow indicates one worker from that foreman's work group who selected as his foreman, the individual to whom the arrow is directed rather than the organizationally designated foreman. The number of non-displaced nominations in each of the foreman's group is denoted by a figure placed below that foreman's box.

A few of the general foremen received all or the great majority of nominations from a few of their foremen's work groups. In one department the general foreman received all of the nominations from the foremen under him. This is illustrated in Pattern A where each of the two foremen in that department lost four nominations to their general foreman and received none from their own groups. Preference of the general foreman over one of the foremen, but not the
PATTERNS OF SOCIOMETRIC CHOICE

Figure 2

S: SUPERINTENDENT
A.S: ASSISTANT SUPERINTENDENT
G.F.: GENERAL FOREMAN
A.G.F.: ASSISTANT GENERAL FOREMAN
F: FOREMAN
Figure 3
others, is illustrated in Pattern B. In this case, one of the foremen lost all his nominations to the general foreman, while the rest of the men did not lose any nominations to this man or to other foremen.

In the vast majority of cases of displacement, the assistant general foreman was by-passed in favor of the general foreman. Pattern C illustrates one of the few exceptions. In two of the departments (each with three foremen) the displaced nominations involved all foremen and included some reciprocations. See Pattern D.

Some of the departments were characterized by scattered nominations from many of the foremen moving upward to the general foreman. Pattern E is most illustrative of this.

The displacement of nominations on the second shift revealed greater consistency since, if displaced nominations were present in a department, they tended to be present in all foremen's groups and were directed toward the same individual (See Pattern F). This might be taken as further evidence of the dominating foremen on the second shift tending to assume overall leadership similar to the position occupied (structurally) by the general foreman.

Implications of the Sociometric Analysis

The ten foremen who consistently lost nominations were dropped from the study. Those foremen who lost or gained one or two nominations were kept if there were at least three
descriptions of that individual. Their work groups were then re-arranged so that each worker was placed in the work group of the foreman he described. In this manner the analysis conformed to the functional hierarchy.

Further Analysis

The writer would like at this time to digress somewhat and examine the behavior of those foremen who lost nominations in contrast to those who did not lose nominations from their work group; while this analysis does not bear directly upon the problem at hand, it does contribute to the overall study.

The pattern of analysis involved comparing the scores on each of the questions (on the Foreman Behavior Description form) of those foremen who lost nominations with those foremen in the same department and on the same shift who did not lose nominations.

This analysis necessitated in any one department one or more foremen who lost nominations and one or more foremen who did not lose nominations. Since there were many cases of complete "domination", i.e., no foreman in a given department who did not lose nominations to the same individual (Pattern A), some cases had to be dropped. In the actual analysis four foremen representing four different departments who consistently lost nominations were compared with those in their respective departments who did not lose nominations.
A total of ten comparisons were made.

The results of the analysis are presented in terms of less or more of a given type of behavior, rather than in terms of actual scores. This procedure was used because the small sample renders the use of actual numbers misleading. Similarly, the small sample and the lack of independence between the comparisons (four men are involved in all comparisons) precludes any attempt at showing significance of difference. Therefore, all results should be viewed as suggestive.

The results are presented in terms of the direction, greater or less, in which the behavior of the foremen who did not lose nominations differed from those who did. The questions are further ordered in terms of the number of exceptions that occurred in the data. Thus, if there were no exceptions, it means that the direction was the same in all ten of the comparisons. If there was one exception, the direction was true in nine out of ten cases, etc.

In all of the questions except those indicated by the word "Less", the foreman who did not lose nominations was rated as showing more of the type of behavior indicated.

Questions showing no exception:

3. He tries out his own ideas.
4. He backs up what people in his work group do.
Questions with one exception:

1. He is easy to understand.
5. He criticizes poor work.
7. He refuses to give in when people in his work group disagree with him. (Less)
24. He offers new approaches to problems.
26. He is willing to make changes.
34. He tries to keep the men under him in good standing with those in higher authority.
37. He decides in detail what shall be done and how it shall be done.
39. He stands up for people under him even though it makes him unpopular with others.
40. He makes those under him feel at ease when talking with him.
41. He puts suggestions that are made by men under him into operation.
48. He encourages slow-working people to greater effort.

Questions with two exceptions:
10. He helps people in the work group with their personal problems.
16. He stresses being ahead of competing work groups.
21. He sees that a worker is rewarded for a job well done.
42. He refuses to explain his actions. (Less)
44. He asks for sacrifices from his men for the good of
the entire department.

There are seven structure questions and eleven consideration questions included in the above list, so there seems to be little difference in the degree of representation of each dimension. With one exception, the foremen who did not lose nominations had higher consideration and structure scores. With one exception, the foremen who lost nominations were ranked below the median in their division on proficiency ratings.

These questions may be summarized into a composite picture of the way in which the foremen who did not lose nominations differ from those who did lose nominations.

The foreman who did not lose nominations may be thought of as a person who:

a. stands behind his workers when they are in trouble.

b. takes an active leadership role by instituting his own ideas and encouraging both quality and quantity of production, yet retains flexibility in his dealing with his work group, in that he explains the reasons behind his actions and accepts and institutes ideas presented by members of the work group.
SECTION III

RELATION OF CRITERIA TO LEADERSHIP BEHAVIOR
Before proceeding with the main body of this section, some discussion should be devoted to data which are relevant not to any one chapter but to all chapters. Such items as the following fall into this category:

1. **Correlation between criteria**: If two or more criteria intercorrelate highly the same factor or factors are being measured. If such be the case, only one of the related criteria need be used.

2. **Discrimination between foremen**: One of the prerequisites for the use of any instrument is that it discriminate between members of the sample on the variable in question. Similarly, it must be shown that the Leader Behavior Description form differentiates between foremen. If the differences between foremen are not significant, little could be gained by correlating them with the selected criteria.

The above items will be discussed in the order listed.

**Inter-relationships among the criteria**

Six criteria were correlated with consideration and structure. They are: 1. a score given each foreman on the basis of the scaling of the items on the Foreman Behavior Description form along the dimension of how well the workers like to work for foremen who displayed varying amounts of the given behavior (like rating), 2. proficiency ratings by
the foremen's superiors, 3. absenteeism rates, 4. accident rates, 5. grievance rates, and 6. turnover rates.

Table 4

INTER-CORRELATION BETWEEN CRITERIA VARIABLES

<table>
<thead>
<tr>
<th></th>
<th>1.</th>
<th>2.</th>
<th>3.</th>
<th>4.</th>
<th>5.</th>
<th>6.</th>
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<td>Grievance rate</td>
<td>-</td>
<td>.20</td>
<td>.37</td>
<td>-.18</td>
<td>.18</td>
<td>-.16</td>
</tr>
<tr>
<td>Turnover rate</td>
<td>-</td>
<td>.23</td>
<td>.08</td>
<td>.24</td>
<td>.21</td>
<td></td>
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<tr>
<td>Absenteeism rate</td>
<td></td>
<td>-.20</td>
<td>-.07</td>
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<tr>
<td>Accident rate</td>
<td></td>
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<td>.13</td>
<td>.03</td>
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<td>Ratings of prof.</td>
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<td></td>
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<tr>
<td>Like ratings</td>
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</tbody>
</table>

These six criteria were correlated with each other in order to establish the degree of dependence or independence of the criteria (see table 4). An inspection of the matrix shows that the highest correlation is .37 and seven of the fifteen coefficients are .20 or lower. Thus, there is some justification for assuming that the criteria are sufficiently independent to be considered separately.

Data specific to a single criterion will be presented in their respective sections.

**Discrimination between Foremen by the Foreman Behavior Description Questionnaire**

The variance of the scores on the Foreman Behavior Description questionnaire may be broken into two parts, that within the groups describing the same foreman and that
between groups describing different foremen. The former variance may be used as an error variance in testing the significance of the differences between foremen. Table 5 presents an analysis of this type. Since the resulting F ratios are both significant beyond the one per cent level of confidence, there is justification in assuming the instrument differentiates between foremen.

The next chapter discusses the scaling of the items on the Foreman Behavior Description along a like-dislike continuum. This is followed by a discussion of the relationships between proficiency and leadership behavior. The final chapter of this section considers the relationships between group behavior and the leadership dimensions.
Table 5

RESULTS OF ANALYSIS OF VARIANCE OF SCORES DESCRIBING DIFFERENT FOREMEN ON THE FOREMAN BEHAVIOR DESCRIPTION FORM
N=54 Foremen

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Source of Variance</th>
<th>D. F.</th>
<th>Variance</th>
<th>F Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>between foremen</td>
<td>33</td>
<td>970.77</td>
<td>5.96*</td>
</tr>
<tr>
<td>Consideration</td>
<td>within foremen</td>
<td>102</td>
<td>162.89</td>
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</tr>
<tr>
<td></td>
<td>Total</td>
<td>135</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>between foremen</td>
<td>33</td>
<td>30.24</td>
<td>9.56*</td>
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<tr>
<td>Initiating</td>
<td>within foremen</td>
<td>102</td>
<td>289.30</td>
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<tr>
<td>Structure</td>
<td>Total</td>
<td>135</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Significance beyond the one per cent level
In addition to such variables as absenteeism and accident rates, one must also recognize the importance of the general attitude of work groups toward working under differing types of leadership. Such a criterion is less readily obtainable than those which are present in factory records, but is just as important.

In measuring the workers' attitudes toward the differing leadership dimensions, each of the items on the Foreman Behavior Description Questionnaire was scaled as described below, along the dimension of "...liking to work for a foreman who acted in that manner", i.e., the manner indicated by the question. Thus would they like or dislike working under a foreman who refused to explain his actions. All of the items were placed in either a positive, negative, or neutral category.

On the basis of the scaling, stencils were constructed and used to score the descriptions of the leadership behavior of each of the foremen. The relationship between the above scaling of the items and consideration and structure was analyzed in a twofold manner. First the individual items were tabulated so that the consideration and structure items were related to their position on the like-dislike continuum. Secondly, the relationship was expressed in a
correlation between the scores given each foreman when their behavior descriptions were scored with the scaled values and their leadership behavior as expressed in their respective consideration and structure scores as ascribed by their work groups.

There are many methods of scaling items along any given continuum each with their own advantages and disadvantages. In a similar manner there are many "yardsticks" which may be used to select a rating method for the purpose at hand. The following items were among those considered in selecting a scaling method appropriate to this situation:

1. It was thought advisable to use worker responses because of the constant danger of unknown qualities in the social, personal, and physical situation which might effect responses.

2. The method should require only a small fraction of the allotted time because of the already heavy commitments made upon the amount of time workers were available for this study.

3. The method should make few demands upon the workers, i.e., it should be possible to answer the questions simply and without undue effort.

Using these items as guides, two scaling methods were selected, the Semi-internal Criterion method of scaling and the Choice method of scaling. Each will be discussed in the
following sections.

Semi-internal Criterion Method of Scaling

This method of scaling consisted of having the respondents rate the ratee on the dimension in question and then answer questions concerning the variables under investigation. The ratings served as criteria against which the item responses are analyzed.

As adapted in this study each worker rated (on a 20 point scale) a foreman of his choice on how well he liked or would like to work for him, and then described the way he treated his work group by answering multiple choice questions concerning specific behaviors. The questions presented were identical in wording, content, and order with those used by other groups in describing the behavior of foremen. Item-rating tetrachoric correlations were computed for each item. Those items showing a significant relationship with the ratings were retained for the final scale. Weights were assigned according to the direction of the relationship between the item and the ratings. This procedure might better be illustrated by showing the scaling of an actual item (Q.23 Rules with an iron hand.)

The distribution of ratings was divided as closely to the median as possible into two groups and the question response distribution was divided likewise. A tetrachoric correlation was computed between these two distributions.
The correlation was statistically significant and negative so the item was accepted and given a minus weight. If the correlation had been significant and positive, the question would have been accepted and scored positively.

The method satisfied the pre-requisites stated earlier in this chapter, for the selection of a rating method. It depended upon the responses of the workers. It did not require a great deal of time, and it made relatively few demands.

It should be noted however that although the demands were few in number, the act of rating on a defined scale was new to most of these people and without proper instruction in the concept and method, the ratings might prove unusable.

Because of this difficulty, an additional method of scaling was devised. It satisfied all of the aforementioned points as well as eliminating the rating procedure as an essential part of the method. It was designed as a safeguard against the failure of the ratings and also as an investigation into a simple method of scaling items with a factory population. As mentioned previously, this method is called the Choice method of scaling. It proceeds as follows:

**Choice Method of Scaling**

The choice method of scaling required the workers to evaluate each question on the basis of whether or not they
would like to work for a foreman who acted in the manner indicated by the question. For example, all workers indicated whether or not they would like or dislike working under a foreman who "...ruled with an iron hand". Responses by all workers to individual questions were noted and the total number of like and dislike responses were compiled for each question. A two-celled Chi Square test of significance was computed. If the test was significant at a level great enough to reject the null hypothesis, the question was accepted and scaled with a positive or negative weight, depending upon the direction of the perponderance of responses.

In addition each worker was asked to estimate how much importance he would place upon the behavior in question by drawing a line through a five point adjectival scale ranging from small to great importance. These estimates were secured to serve as differential weighting guides within the broader plus and minus categories, although the scaling was not dependent upon them.

Methodology

Seventy-five workers representing the entire plant were used in scaling the items. They were selected at random from all departments. None of the workers used in scaling the items were used in any other part of the study.

Each worker filled out all of the forms required by each scaling method in approximately one hour. Roughly 30
minutes were required for the Semi-internal Criterion method and 15 minutes for the Choice method of scaling.

The forms for the Semi-internal Criterion method were given first. Each worker selected a foreman under whom he had worked at some time and rated him on a 20 point scale as to how well he liked to work for him. The foreman rated was not necessarily the worker's present foreman.

To assist in the rating procedure, each worker was given a mimeographed rating scale with the first, fifth, tenth, fifteenth, and twentieth points defined in terms of best, above average, average, below average, and worst, respectively. They were taken step by step through the rating procedure first being told to locate the foreman roughly in the middle, upper, or lower parts of the scale. Then to locate him at or between two descriptive phrases, and finally to assign him a number which indicated his position in the group. The rating was written on the booklet which was used to describe his behavior.

The form the workers used in describing the behavior of the foremen they rated was identical to that questionnaire used by the other workers to describe their present foremen, the only difference being in the instructions which were altered to fit this phase of the study. For the instruments used see Appendix I.
When the workers had finished filling out the above forms, they were given those necessary for the Choice method of scaling. Again the same questions were used but in a different format. In this instance they were asked to consider each question separately and to indicate whether they would like or dislike to work for any foreman who acted in the manner indicated by the question and how much importance they would place upon that kind of behavior. An example of the format is given below. For the instrument used see Appendix I.

Easy to understand

<table>
<thead>
<tr>
<th>L</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>small</td>
<td>below av-</td>
</tr>
<tr>
<td>impor-</td>
<td>erage im-</td>
</tr>
<tr>
<td>tance</td>
<td>portance</td>
</tr>
</tbody>
</table>

The workers indicated their like or dislike by checking in the appropriate box (L-like, D-dislike) and indicated the amount of importance they would place upon that behavior by drawing a line through the scale ".....at that point which best shows the way you feel".

No group of workers numbered over 20. Enthusiasm ran high in all of the groups, for the workers regarded it as their opportunity to say what they liked and disliked about foreman behavior. The workers were guaranteed anonymity, and since no names were written on the papers, this appeared to the workers to be more than an idle statement.
Results

Before proceeding with an analysis of the results it might be well to look at the frequency distribution of the ratings collected by the Semi-internal Criterion method. It will be recalled that these served as criteria against which each question was evaluated.

Figure 4 presents the distribution of obtained ratings. The ratings are on the abscissa and the frequency is on the ordinate.

One of the first things which stands out is the lack of symmetry of the distribution. There is a distinct piling up at the two ends of the scale, with only eleven ratings being given between numbers five and fifteen, or between those points defined as above average and below average respectively. It is probable that in selecting a foreman to describe, the workers selected those foremen who had made the strongest impression, whether good or bad, to the exclusion of the middle or average categories. In this latter respect, a greater percentage of the men selected foremen who had made a favorable impression.

It is interesting to note that ratings were made predominantly in terms of round numbers. That is, the workers tended to rate the foremen at the defined points of one, five, ten, fifteen, and twenty. Thus, the perceived scale involved five rather than twenty points.
DISTRIBUTION OF RATINGS GIVEN IN THE SEMI-INTERNAL CRITERION METHOD

Figure 4
Comparison of the Two Methods

Material below presents the items answered by the workers along with the relevant statistics computed for each scaling method. The median importance value was computed in the Choice method of scaling as was the Chi Square test in determining significance of the like-dislike direction. The "r" refers to the tetrachoric correlations computed in the Semi-Internal Criterion method of scaling. After each item the above statistics are reported. A minus sign in front of either the median or the correlational coefficient indicates the behavior was disliked by the workers.

<table>
<thead>
<tr>
<th>Behavior</th>
<th>Chi Sq.</th>
<th>Median</th>
<th>r</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Easy to understand.</td>
<td>68.98</td>
<td>4.28</td>
<td>.88</td>
</tr>
<tr>
<td>2. Encourages overtime work.</td>
<td>0.056*</td>
<td>.70</td>
<td>.35*</td>
</tr>
<tr>
<td>3. Tries out his new ideas.</td>
<td>32.90</td>
<td>3.11</td>
<td>-.08*</td>
</tr>
<tr>
<td>4. Backs up what people in his work group do.</td>
<td>68.00</td>
<td>4.07</td>
<td>.81</td>
</tr>
<tr>
<td>5. Criticizes poor work.</td>
<td>3.08*</td>
<td>2.80</td>
<td>-.11*</td>
</tr>
<tr>
<td>6. Demands more than we can do.</td>
<td>43.50</td>
<td>-4.11</td>
<td>-.86</td>
</tr>
<tr>
<td>7. Refuses to give in when people in the work group disagree with him.</td>
<td>28.60</td>
<td>-3.12</td>
<td>-.70</td>
</tr>
<tr>
<td>8. Expresses appreciation when one of us does a good job.</td>
<td>54.00</td>
<td>4.09</td>
<td>.85</td>
</tr>
<tr>
<td>9. Insists that people under him follow standard ways of doing things in every detail.</td>
<td>1.70*</td>
<td>-1.78</td>
<td>-.36*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Chi Sq.</td>
<td>Median</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---------</td>
<td>--------</td>
</tr>
<tr>
<td>10. Helps people in the work group with their personal problems.</td>
<td></td>
<td>34.56</td>
<td>3.25</td>
</tr>
<tr>
<td>11. Slow to accept new ideas.</td>
<td></td>
<td>18.52</td>
<td>-2.97</td>
</tr>
<tr>
<td>12. Friendly and can be easily approached.</td>
<td></td>
<td>.3690</td>
<td>4.31</td>
</tr>
<tr>
<td>13. Gets the approval of the work group on important matters before going ahead.</td>
<td></td>
<td>36.90</td>
<td>3.77</td>
</tr>
<tr>
<td>14. Resists changes in the way of doing things.</td>
<td></td>
<td>22.22</td>
<td>-3.07</td>
</tr>
<tr>
<td>15. Assigns people under him to particular tasks.</td>
<td></td>
<td>8.00</td>
<td>2.85</td>
</tr>
<tr>
<td>16. Stresses being ahead of competing work groups.</td>
<td></td>
<td>3.52*</td>
<td>-1.00</td>
</tr>
<tr>
<td>17. Criticizes a specific act rather than a particular individual.</td>
<td></td>
<td>13.54</td>
<td>2.89</td>
</tr>
<tr>
<td>18. Lets others do their work the way they think best.</td>
<td></td>
<td>24.50</td>
<td>3.32</td>
</tr>
<tr>
<td>19. Does personal favors for the men under him.</td>
<td></td>
<td>9.06</td>
<td>2.91</td>
</tr>
<tr>
<td>20. Emphasizes meeting of deadlines</td>
<td></td>
<td>11.84</td>
<td>2.93</td>
</tr>
<tr>
<td>21. Sees that a worker is rewarded for a job well done.</td>
<td></td>
<td>56.82</td>
<td>3.67</td>
</tr>
<tr>
<td>22. Treats people under him without considering their feelings.</td>
<td></td>
<td>45.76</td>
<td>-4.00</td>
</tr>
<tr>
<td>23. Insists that he be informed on decisions made by the people under him</td>
<td></td>
<td>9.98</td>
<td>2.84</td>
</tr>
<tr>
<td>24. Offers new approaches to problems.</td>
<td></td>
<td>52.40</td>
<td>3.72</td>
</tr>
<tr>
<td>25. Treats all workers under him as his equals.</td>
<td></td>
<td>43.56</td>
<td>3.95</td>
</tr>
<tr>
<td></td>
<td>Willing to make changes.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>--------------------------</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td></td>
<td>Asks slower people to get more done.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Criticizes people under him in front of others.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Stresses the importance of high morale among those under him.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Talks about how much should be done.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rides the person who makes a mistake.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Waits for people under him to push new ideas before he does.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rules with an iron hand.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tries to keep the men under him in good standing with those in authority.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rejects suggestions for changes.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Changes the duties of people under him without first talking it over with them.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Decides in detail what shall be done and how it shall be done.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sees to it that people under him are working up to their limits.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Stands up for people under him even though it makes him unpopular with others.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Makes those under him feel at ease when talking to him.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Puts suggestions that are made by the men under him into operation.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Chi Sq.</th>
<th>Median</th>
<th>r</th>
</tr>
</thead>
<tbody>
<tr>
<td>26</td>
<td>58.38</td>
<td>3.74</td>
<td>.67</td>
</tr>
<tr>
<td>27</td>
<td>12.18</td>
<td>-2.68</td>
<td>-.66</td>
</tr>
<tr>
<td>28</td>
<td>39.40</td>
<td>-4.14</td>
<td>-.78</td>
</tr>
<tr>
<td>29</td>
<td>20.84</td>
<td>3.77</td>
<td>.61</td>
</tr>
<tr>
<td>30</td>
<td>20.84</td>
<td>-2.78</td>
<td>-.61</td>
</tr>
<tr>
<td>31</td>
<td>50.00</td>
<td>-3.93</td>
<td>-.80</td>
</tr>
<tr>
<td>32</td>
<td>20.84</td>
<td>-2.78</td>
<td>-.10*</td>
</tr>
<tr>
<td>33</td>
<td>50.00</td>
<td>-3.93</td>
<td>-.93</td>
</tr>
<tr>
<td>34</td>
<td>34.72</td>
<td>3.76</td>
<td>.80</td>
</tr>
<tr>
<td>35</td>
<td>36.64</td>
<td>-5.29</td>
<td>-.81</td>
</tr>
<tr>
<td>36</td>
<td>43.56</td>
<td>-3.86</td>
<td>-.84</td>
</tr>
<tr>
<td>37</td>
<td>.68*</td>
<td>2.54</td>
<td>-.20*</td>
</tr>
<tr>
<td>38</td>
<td>22.21</td>
<td>-3.06</td>
<td>-.71</td>
</tr>
<tr>
<td>39</td>
<td>54.00</td>
<td>3.46</td>
<td>.82</td>
</tr>
<tr>
<td>40</td>
<td>41.64</td>
<td>4.44</td>
<td>.94</td>
</tr>
<tr>
<td>41</td>
<td>46.72</td>
<td>3.76</td>
<td>.79</td>
</tr>
</tbody>
</table>
42. Refuses to explain his actions.  
Chi Sq.  Median  r
41.32  -3.63  -.70

43. Emphasizes the quantity of work.  
.55*  2.69  -.16*

44. Asks for sacrifices from his men for the good of the entire department.  
.50*  1.83  -.12*

45. Acts without consulting the men under him first.  
43.56  -3.58  -.77

46. Needle people under him for greater effort.  
55.10  -3.97  -.82

47. Insists that everything be done his way.  
40.50  -3.63  -.89

48. Encourages slow working people to greater effort.  
.05*  .76  -.38

* The statistic was not significant at the five per cent level and so the question was rejected by that method.

How comparable are the two methods of scaling as judged by the data gathered in this study? Do they select and/or reject the same items? How similar are scores derived from each method? How are the scores related to consideration and structure? The following discussion will attempt to answer these questions.

The two methods are similar in the number of rejected questions and the total number of plus and minus weights assigned.

The Choice method of scaling rejected eight items, and the Semi-Internal Criterion method rejected twelve items, but among these twelve were seven of the eight
Table 6

A COMPARISON OF THE NUMBER OF PLUS, MINUS AND NEUTRAL WEIGHTS ASSIGNED BY EACH METHOD

<table>
<thead>
<tr>
<th>Questions Selected</th>
<th>Questions Rejected</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Positive Weight</td>
<td>Negative Weight</td>
</tr>
<tr>
<td>Choice Method</td>
<td>22</td>
<td>18</td>
</tr>
<tr>
<td>Internal Criterion Method</td>
<td>17</td>
<td>19</td>
</tr>
</tbody>
</table>

rejected by the Choice method. The seven questions rejected by both methods are as follows:

2. Encourages overtime work.

5. Criticizes poor work.

9. Insists that people under him follow standard ways of doing things.

16. Stresses being ahead of competing work groups.

37. Decides in detail what shall be done and how it shall be done.

43. Emphasizes the quantity of work.

44. Asks for sacrifices from his men for the good of the entire department.

48. Encourages slow working people to get more done.

The others rejected by only the Semi-Internal Criterion method are:

3. Tries out his new ideas.

15. Assigns people under him to particular tasks.
17. Criticizes a specific act rather than a particular individual.

20. Emphasizes meeting of deadlines.

32. Waits for people under him to push new ideas before he does.

So much for the questions rejected. What of the questions selected by each method? The questions selected and the weights assigned reveal a consistency between methods similar to that found in the rejected questions.

As one can see from Table 8, when consideration and structure items are combined, the Choice method accepted forty items, giving twenty-two positive and eighteen negative weights; while the Semi-Internal Criterion method accepted thirty-six questions, assigning seventeen positive and nineteen negative weights. Thus the Choice method assigned a greater percentage of positive weights.

The two methods selected thirty-five common items (1, 4, 6, 7, 8, 10, 11, 12, 15, 14, 18, 19, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 33, 34, 35, 36, 38, 39, 40, 41, 42, 45, 46, and 47). Identical weights were assigned (plus or minus) with the exception of item 23 which was weighted positive in the Choice method and negative in the Semi-Internal Criterion method.

The Semi-Internal Criterion method selected one additional question (Q. 48. Encourages slow working people to greater effort.); while the Choice method selected five
additional questions (Q. 3, 15, 17, 20, and 32.)

Reliabilities and Inter-correlation of Both Methods

Papers representing behavior descriptions of 58 foremen were scored with stencils constructed from the results of the scaling methods. From this data split half coefficients of reliability (corrected with the Spearman Brown formula) were computed for each method as were the means and sigmas. (See table 7). The scores given each foreman by the two methods were correlated to illustrate the degree of comparability of the two methods. The resulting correlation (.98) was high enough to insure the interchangeability of the two methods.

Table 7

MEANS, SIGMAS, AND RELIABILITIES OF THE SCALING METHODS

<table>
<thead>
<tr>
<th>Method</th>
<th>Mean</th>
<th>Sigma</th>
<th>Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Choice method</td>
<td>104.49</td>
<td>15.00</td>
<td>.89</td>
</tr>
<tr>
<td>Semi-internal Criterion</td>
<td>96.35</td>
<td>14.73</td>
<td>.87</td>
</tr>
</tbody>
</table>

Importance Values

The importance ratings in the Choice method were obtained for the purpose of weighting the questions differentially within the broader plus and minus categories. In keeping with this purpose, the median importance value was computed for each item selected by the Chi Square test as
showing significant differences between the number of like and dislike responses.

Before these values could be accepted as weights, they had to show a sufficient spread so that the differential weighting was possible. Unfortunately, this stipulation was not satisfied by either the positively or negatively weighted questions. For the positive questions the range of median importance values was only 1.45 points, and for negative questions the range was only 1.50 points out of a possible range of five points.

Relationships Between Leader Behavior Dimensions and the Results of the Scaling

The relationships between the workers attitudes as expressed in both scaling methods and the leadership dimensions may be explored from two standpoints: 1. the number of plus and minus weights assigned each of the dimensions as compiled through a tabulation of the individual items and 2. the correlation between the leadership dimensions and scores of each foreman received when his behavior descriptions (as given by a different set of workers) were scored with the weights assigned each of the questions by the scaling process. The former procedure allows an inspection of individual items and the latter yields an overall quantitative view of the relationships. Each of the approaches will be discussed below in the order in which they are listed.
All of the items with positive loadings on consideration with the exception of Q. 17 (criticizes a specific act rather than a particular individual) were accepted by both methods and given positive weights. Conversely, all questions with negative loadings on consideration were accepted and given negative weights by both methods.

The structure items did not reveal the same consistency. Of the eighteen items with positive loadings on structure, only seven were selected by each method while seven were rejected by each method. Five of the eight items commonly selected had negative weights. One (Q. 24) was assigned a positive weight. Another (Q. 25) was assigned a positive weight by the Choice method and a negative weight by the Semi-Internal Criterion method.

The Choice method selected an additional two structure items and assigned positive weights (Q. 3 and 15. Tries out his own ideas, and Assigns people under him to particular work tasks). The Semi-Internal Criterion method also selected one other question and assigned a negative weight (Q. 48. Encourages slow working people to greater effort.)

There were two items with negative loadings on structure: Q. 18. Lets others do their work the way they think best, and Q. 32. Waits for people under him to push new ideas before he does. Both of these were selected by the Choice method of scaling with question 18 receiving a positive
<table>
<thead>
<tr>
<th>Consideration</th>
<th>Positive Loading</th>
<th>Negative Loading</th>
<th>Positive Loading</th>
<th>Negative Loading</th>
<th>Questions Accepted</th>
<th>Questions Rejected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive Loading</td>
<td>14,8,10,12,13,17,13,21,25,26,29,34,39,40,41</td>
<td>6,7,11,22,23,31,35,36,45,47,42,14</td>
<td>27,50,46</td>
<td>24</td>
<td>48</td>
<td>17</td>
</tr>
<tr>
<td>Negative Loading</td>
<td>14,8,10,12,13,19,21,25,23,29,34,39,40,41</td>
<td>6,7,11,22,28,31,35,36,42,45,47,14</td>
<td>25,9,23,27,16,57,15,16,20,37,43,44</td>
<td>17</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Structure Positive Loading</td>
<td>3,15,20,23,24</td>
<td>27,50,55,38,46</td>
<td>24</td>
<td>48</td>
<td>2,5,9,16,57,15,16,20,37,43,44</td>
<td>17</td>
</tr>
<tr>
<td>Negative Loading</td>
<td>18</td>
<td>32</td>
<td>18</td>
<td>48</td>
<td>32</td>
<td>12</td>
</tr>
</tbody>
</table>

Table 8

SUMMARY OF WEIGHTS ASSIGNED QUESTIONS ON FOREMAN BEHAVIOR DESCRIPTION
weight and question 32 a negative weight. The Semi-Internal Criterion method gave question 18 a positive weight and rejected question 32.

An analysis of the weights assigned the various items gives some indication of the high positive correlation between consideration and attitude scores, and the negative correlation between initiation of structure and attitude scores. To present the degree of relationship more specifically papers describing 58 foremen were scored with stencils constructed from the sealing of the items and pearsonian correlational coefficients were computed between attitude scores and consideration and structure. No attempt was made to partial out a leadership dimension, because the correlation between them was not significant (-.20). The resulting coefficients, based on 58 cases, are presented in Table 9.

Table 9

RELATIONSHIPS BETWEEN LEADERSHIP BEHAVIOR AND "LIKE RATINGS"

<table>
<thead>
<tr>
<th>Leadership Scores</th>
<th>r</th>
<th>Mean</th>
<th>Sigma</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consideration and Attitude</td>
<td>.96*</td>
<td>73.65</td>
<td>12.49</td>
</tr>
<tr>
<td>Structure and Attitude</td>
<td>-.48*</td>
<td>40.00</td>
<td>6.71</td>
</tr>
</tbody>
</table>

* Significant beyond the one per cent level of confidence.
** The mean and sigma of the attitude scores are reported in Table 7.

It is evident from the above table that workers like working for foremen who show a great deal of consideration
and dislike working for foremen who show a great deal of structure in their dealings with their work group. Since both correlations are significant beyond the one per cent level of confidence the relationships may be accepted as significant.

Further Analysis

A tabulation of the number of positive and negative statements, irrespective of their significance, shows some interesting differences.

Table 10 presents a compilation of the total positive and negative weights assigned by each method.

Table 10

<table>
<thead>
<tr>
<th>Method</th>
<th>Positive</th>
<th>Negative</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Choice method</td>
<td>29</td>
<td>19</td>
<td>48</td>
</tr>
<tr>
<td>Semi-Internal Criterion Method</td>
<td>19</td>
<td>29</td>
<td>48</td>
</tr>
</tbody>
</table>

A Chi Square test of the significance between the two sets of frequencies can be computed. Using such an analysis, a Chi Square of 8.71 is obtained which is significant beyond the one per cent level of confidence. From this one may conclude that there is a significant trend toward more negative items in the Semi-Internal Criterion method than in the Choice method of scaling. (This same relationship does not
hold when one considers only the items selected by the two methods.)

An inspection of the weights assigned each item shows that this is not only an overall trend but is present in the individual questions as well. That is no item which is negative in the Choice method is positive in the Semi-Internal Criterion method, but an item which is positive in the Choice method may be either positive or negative in the Semi-Internal Criterion method.

Since this trend is also consistent in each of the questions, it is possible to identify those questions which bear sole responsibility for this difference. The following are the questions which were positive in the Choice method and negative in the Semi-Internal Criterion method:

3. Tries out his new ideas.
5. Criticizes poor work.
15. Assigns people under him to particular tasks.
17. Criticizes a specific act rather than a particular individual.
23. Insists that he be informed on decisions made by the people under him.
37. Decided in detail what shall be done and how it shall be done.
43. Emphasizes the quantity of work.
44. Asks for sacrifices from his men for the good of the entire department.
48. Encourages slow working people to get more done.
It is possible that this difference in the number of positive and negative statements is a function of the difference in set given the workers when they filled out the forms for scaling the items. In the Semi-internal Criterion method the workers were responding to each behavior in terms of its occurrence in the behavioral context in which such behavior occurred. In other words, the behavior was associated with many other things, such as the manner in which the order was carried out or the nature of relations between the worker and his foreman and/or the general context in which it occurred.

In the Choice method of scaling the workers were asked to consider each type of behavior in a more abstract nature in terms of "... any foreman." It was hoped that in this manner the behavior would be divorced from any particular behavioral context. It is doubtful if there was a complete abstraction of the behavior, but one may assume that items as scaled by this method were less related to a behavioral context and were considered in more abstract terms.

Most of the questions have two things in common. All but one of the questions (17) is a structure question and the items tend to group themselves along the general lines of standards and methods of work.

Summary

This chapter has explored the relationships between the
leadership dimensions and the first of six criteria. It has attempted to show the degree to which workers like working under foremen who display varying amounts of the leadership dimensions. The results indicate that workers like working under foremen who are high on the consideration dimension (.96), and dislike working for foremen who are high on the structure dimension (-.48). Each of the relationships are significant beyond the one per cent level of confidence.

In addition to and coordinate with the above, two types of scaling were considered. The resulting correlation between the final scores (.98) was high enough to suggest their similarity.

The next chapter will present the analysis of the second of the six criteria - the relationships between ratings of proficiency by the foremen's superiors and the leadership dimensions.
CHAPTER 3

THE RELATIONSHIPS BETWEEN PROFICIENCY RATINGS AND LEADERSHIP BEHAVIOR

As the reader will recall, global proficiency ratings of foremen were obtained through ratings by division superintendents, assistant superintendents, and some general foremen. Eight divisions (102 foremen) representing both production and non-production divisions were included in the analysis.

The dichotomy of production vs. non-production refers to the organizational designations of production and service units respectively. The production units are those units which assemble, or produce a part or parts in such a way that they contribute to the finished product. Non-production or service divisions are those divisions which aid in the production of the finished unit, but are not connected directly with the production or assembly of parts.

Three of the eight divisions were non-production groups (Stores, Inspection, and Maintenance); while the remaining five were production divisions (Stamping, Assembly, Body Assembly, Machining, and Export). Export division was included in the production category because it processed, assembled, and packaged parts on an assembly line basis according to specifications of the receiver.

Rating Procedure

All proficiency ratings were made by the paired com-
comparison method. The names were submitted to raters on I.B.M. cards on which one pair of names was printed at the top of each card (25). The raters placed a check next to the name of the foreman who in their opinion was doing "the better job" or was "the more proficient". Each rater completed all ratings at one time. The number of foremen considered in each division is reported in table 11.

The data were tabulated by counting the number of first choices given each foreman. The number of such choices furnished the basis for assigning each foreman a standard score which indicated his position in his division. These were later used to combine divisions into larger groups. The ranking of foremen within their own divisions were used for correlational purposes in all intra-divisional analyses as well as in determining the reliabilities of the ratings.

In six of the eight divisions, two raters were used and rank order correlations were computed as indices of inter-rater agreement. In the remaining two divisions a second rater was not available, so each of the original raters were asked to rerate the same men after an interval of one week. They did not know they would be asked to repeat their ratings at the time they made the first ratings. Rank order correlations were computed between the two sets of ratings as indices of reliability.
Results

The presentation of the results is divided into three sections, 1. intra-divisional analyses, 2. analysis of combined divisions, and 3. further analysis. They will be discussed in the order listed.

Intra-divisional Analysis

Before the divisions were combined into larger groups, rhos were computed between proficiency and leadership behavior in each division. The dimension scores were taken from the responses of the workers in describing their foreman's behavior on the Foreman Behavior Description Questionnaire.

The number of foremen in some of the divisions was regretfully low. Nonetheless, the results are presented because of empirical differences between the divisions and the possible implications of the data.

Table 11 presents the reliabilities of the proficiency ratings and the relationship between the ratings and the consideration and structure scores for each division. An inspection of this table reveals one apparent trend; namely, a reversal in the sign of the correlations between proficiency and leadership behavior in the production and the non-production divisions. Thus in the production divisions, proficiency is positively related to initiation of structure
Table 11

INTRA-DIVISIONAL ANALYSIS OF THE RELATIONSHIPS BETWEEN PROFICIENCY RATINGS AND CONSIDERATION AND STRUCTURE SCORES*•**

<table>
<thead>
<tr>
<th>Production Divisions</th>
<th>Number of Foremen</th>
<th>Reliability</th>
<th>Corr. with Structure</th>
<th>Corr. with Consider.</th>
</tr>
</thead>
<tbody>
<tr>
<td>A.</td>
<td>17</td>
<td>.92</td>
<td>-.23</td>
<td>.46</td>
</tr>
<tr>
<td>B.</td>
<td>7</td>
<td>.85*</td>
<td>.21</td>
<td>-.07</td>
</tr>
<tr>
<td>C.</td>
<td>18</td>
<td>.88</td>
<td>.64**</td>
<td>-.18</td>
</tr>
<tr>
<td>D.</td>
<td>26</td>
<td>.79</td>
<td>.31</td>
<td>-.09</td>
</tr>
<tr>
<td>E.</td>
<td>8</td>
<td>1.00*</td>
<td>.76**</td>
<td>-.05</td>
</tr>
</tbody>
</table>

Non-production Divisions

| G.                   | 13                 | .69          | -.33                  | .64**                 |
| H.                   | 10                 | .78          | -.19                  | .23                  |
|                      | 13                 | .70          | .13                   | -.19                 |

* Based on two ratings by the same rater in contrast to other coefficients which are based on agreement between two raters.

** Significant at or beyond the three per cent level of confidence.

*** See table 16 for median and ranges of consideration and structure scores.

and (low) negatively related to consideration; while in the non-production divisions, proficiency seems to be negatively related to initiation structure and positively related to consideration. This is especially the case for the statistically significant correlations.

This trend must be qualified by the fact that two divisions (A and H) do not conform to the pattern in their respective groups. Further analysis shows, however, that these deviations are less serious than they first appear.
This will be discussed below.

The goal of all production divisions is to process as many parts as possible in a given unit of time, or in assembly operations, to perform work duties efficiently and maintain pace with the production line. This goal is tempered to varying degrees by such additional goals as are involved in grievances, accidents, absenteeism, etc. The production goal was given a somewhat greater weight by most raters of production divisions. However, in division "A" this goal was tempered, or perhaps temporarily superseded, by a program directed toward the reduction of an excessively high grievance rate. Thus raters in division "A" had temporarily, at least, a markedly different set of values, and perhaps a different hierarchial arrangement of goals. Thus the usual production goal may have been forced to occupy a somewhat less important position in division "A". This may account for the correlation of -.23 between proficiency and structure and the .46 between proficiency and consideration. It is interesting to note elsewhere (see table 16) that despite the supervisors emphasis upon consideration, it is not reflected in the foreman's behavior for division "A" has the highest structure and lowest consideration scores of all divisions.

The clue to the deviation of division "H" was obtained when the raters were asked why they had rated some of the
foremen ahead of others. Typical answers were, "You have to watch him before he will get his work out", and "He is too slow". These statements plus some familiarity with the conditions and nature of the division's work duties suggested that this division resembled production more closely than non-production groups in the sense of having to work against an exacting time schedule. It is possible that the raters in division "H" were using the same goal as production units, viz. getting as much work done in as short a time as possible.

In order to test this hypothesis, ratings were made of all eight divisions on a six inch continuous adjectival scale along the dimension of "...degree to which each division must work against a demanding time schedule". The ratings were recorded in terms of the number of eighth inch units of each division from the upper (or most demanding) end of the scale. Thus the lower the figure the more demanding the work schedule.

Five raters were used, all of whom understood the nature of the work, but were not identified with any of the divisions involved, and a Hoyt (19) correlational coefficient of .58 was obtained for inter-rater agreement. Table presents the results in terms of the average number of units of each of the divisions from the most demanding end of the scale.
Table 12
AVERAGED DIVISIONAL RATINGS
OF DEMANDINGNESS OF TIME SCHEDULE

<table>
<thead>
<tr>
<th>Division</th>
<th>Distance from upper end of scale in terms of eighth inch units</th>
</tr>
</thead>
<tbody>
<tr>
<td>A.</td>
<td>4.6</td>
</tr>
<tr>
<td>C.</td>
<td>7.2</td>
</tr>
<tr>
<td>D.</td>
<td>9.0</td>
</tr>
<tr>
<td>B.</td>
<td>10.4</td>
</tr>
<tr>
<td>H.</td>
<td>15.8</td>
</tr>
<tr>
<td>E.</td>
<td>18.2</td>
</tr>
<tr>
<td>G.</td>
<td>26.2</td>
</tr>
<tr>
<td>F.</td>
<td>29.3</td>
</tr>
</tbody>
</table>

From these ratings it can be seen that the non-production division in question (H) has been rated ahead of one of the production divisions (E) and is much closer to the mean of the production divisions (10.1) than it is to the mean of the remaining non-production divisions (27.7). Thus there is some tenability to the assumption that this division more closely resembles the production than the non-production divisions in this respect. This might account for its anomalous correlations.

It is also interesting to note that the range of production division scores (4.6-18.2) is considerably greater than the range between divisions "E" and "G". This suggests the possibility of a steady gradient in sign and magnitude of the coefficients according to the gradient of mean ratings on exactingness of schedules. A gradient in sign has been shown to exist between the two larger
groups, but there might also be a gradient in magnitude of correlation within the groups. Table 13 presents the above mentioned proficiency ratings for each division along with the correlations of proficiency ratings with consideration and structure (taken from table 11 and rearranged).

Table 13

<table>
<thead>
<tr>
<th>Division</th>
<th>Distance from upper end of scale</th>
<th>Corr. of Pro. with struct.</th>
<th>Corr. of Pro. with Consid.</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>4.6</td>
<td>-.23</td>
<td>.46</td>
</tr>
<tr>
<td>C</td>
<td>7.2</td>
<td>.64</td>
<td>-.18</td>
</tr>
<tr>
<td>D</td>
<td>9.0</td>
<td>.31</td>
<td>-.09</td>
</tr>
<tr>
<td>B</td>
<td>10.4</td>
<td>.21</td>
<td>-.07</td>
</tr>
<tr>
<td>H</td>
<td>15.8</td>
<td>.13</td>
<td>-.19</td>
</tr>
<tr>
<td>E</td>
<td>18.2</td>
<td>.76</td>
<td>-.05</td>
</tr>
<tr>
<td>G</td>
<td>26.2</td>
<td>-.19</td>
<td>.23</td>
</tr>
<tr>
<td>F</td>
<td>29.2</td>
<td>-.53</td>
<td>.64</td>
</tr>
</tbody>
</table>

The progression of changes in magnitude of correlational coefficients is not constant in either consideration or structure columns, but there is a trend. If the correlations are ranked from high positive to high negative and correlated with the rank order of the divisions on demandingness of time schedule, the following rhos are obtained: .26 between columns one and two and -.36 between columns one and three. Thus the more demanding the time schedule the more the correlations between proficiency and structure approach the positive end of the correlational continuum, and the correlations between consideration and proficiency approach the negative end of the continuum. Thus one might say that in looking at all
eight divisions, there is some tendency (though not statistically significant) for the raters to have favored structure more highly and consideration less highly in those divisions in which there is a relatively high demanding time schedule. The possible relation of leadership behavior and production orientation should not be lost sight of in the subsequent analysis when the divisions are grouped.

Combining Divisions

The number of foremen in most of the divisions was too low to establish significance of relationship, so the divisions were combined into a larger sample so as to yield a more stable coefficient of relationship between proficiency ratings and leadership behavior. The foremen in different divisions were combined through the use of standard scores assigned to each of the foremen according to his proficiency relative to other foremen in his division.

The first problem encountered was what units should be combined. Is it plausible to consider all divisions as members of the same population? The preceding analysis suggests of the possibility of two populations (Production and non-production). Accordingly the divisions were combined so as to parallel this dichotomy. Since division "R" appeared to resemble production divisions more closely than non-production units, it was combined with other production groups.
Pearsonian correlation coefficients were then computed between leadership behavior and proficiency within each of the groups. Table 14 presents the resulting pearsonian coefficients.

Table 14

<table>
<thead>
<tr>
<th>Division</th>
<th>N</th>
<th>Corr. of Prof. Ratings with Consideration</th>
<th>Corr. of Prof. with Structure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production</td>
<td>89</td>
<td>-0.02</td>
<td>0.29*</td>
</tr>
<tr>
<td>Non-production</td>
<td>23</td>
<td>0.28</td>
<td>-0.19</td>
</tr>
</tbody>
</table>

* Significant at 1 per cent level of confidence.

Table 15


<table>
<thead>
<tr>
<th>Divisions</th>
<th>Consideration</th>
<th>Structure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>Sigma</td>
</tr>
<tr>
<td>Production Divisions</td>
<td>71.70</td>
<td>11.49</td>
</tr>
<tr>
<td>Non-production Divisions</td>
<td>79.00</td>
<td>9.43</td>
</tr>
</tbody>
</table>

Table 14 presents the correlations between proficiency ratings and consideration and structure when two populations are considered. An inspection of the table reveals one significant relationship and that a positive one between proficiency and structure scores in the production groups. From this one might conclude that those foremen who structured most highly were also seen to be the better or more
proficient foremen than those who showed less structuring behavior with their groups.

As stated previously the two groups contain all eight divisions. There is however some basis for considering division "A" to be somewhat unique due to its emphasis upon the reduction of a high grievance rate. If this division is omitted from the production group and the correlations recomputed the following statistics are obtained (based on 72 foremen): -.31 and .47 between proficiency ratings and consideration and structure scores respectively. Both of the coefficients are significant beyond the 1 per cent level of confidence. Thus in the production divisions which were operating without special concern for worker grievances, proficiency varies positively with structuring behavior and negatively with consideration on the part of the foremen.

Further Analysis

Since the divisional raters seem to favor consideration and structure according to the demandingness of their time schedules, it is possible that the demandingness of time schedules is also reflected in the behavior of the foremen.

To explore this possibility the median consideration and initiation of structure scores were computed for each division, putting all foremen into their respective divisional distributions. The median scores were then ranked from highest to lowest. Rank order correlations were
<table>
<thead>
<tr>
<th>Production Divisions</th>
<th>Number of Foremen</th>
<th>Median Consid. Score</th>
<th>Range</th>
<th>Median St. Score</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>A.</td>
<td>17</td>
<td>62.00</td>
<td>34-88</td>
<td>44.00</td>
<td>24-54</td>
</tr>
<tr>
<td>B.</td>
<td>7</td>
<td>75.00</td>
<td>60-93</td>
<td>42.00</td>
<td>23-48</td>
</tr>
<tr>
<td>C.</td>
<td>18</td>
<td>74.88</td>
<td>48-91</td>
<td>39.00</td>
<td>32-49</td>
</tr>
<tr>
<td>D.</td>
<td>26</td>
<td>78.00</td>
<td>41-88</td>
<td>40.25</td>
<td>29-56</td>
</tr>
<tr>
<td>E.</td>
<td>8</td>
<td>72.50</td>
<td>57-90</td>
<td>40.75</td>
<td>29-51</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Non-production Divisions</th>
</tr>
</thead>
<tbody>
<tr>
<td>F.</td>
</tr>
<tr>
<td>G.</td>
</tr>
<tr>
<td>H.</td>
</tr>
</tbody>
</table>
computed between this ranking and a similar ranking of demandingness of time schedules. The resulting rhos are as follows: .80 and -.52 between the initiation of structure and consideration scores and demandingness of time schedule respectively. The former coefficient is significant at the three per cent level and the latter at the six per cent level of confidence. Thus the foremen in those divisions with high production stress structured more and showed less consideration than those foremen in divisions with relatively lower amounts of production stress.

Summary

This chapter presents an analysis of the relationships between the leadership dimensions and the second of six criteria—proficiency ratings of foremen by their superiors. Several points of interest appeared. They are:

1. It is possible that production and non-production divisions may be considered, at least in this instance, as different populations.

2. In the intradivisional analyses proficiency ratings appeared to be positively related to structure in the production groups and positively related to consideration in the non-production groups. It appears as though an underlying variable is the relative degree of "production pressure" facing each unit.
3. When the divisions were combined into two larger groups (production and non-production) a (significant) positive relationship between structure and proficiency ratings was found in the production groups. When the production division (A), which was trying to reduce grievances, was eliminated from the sample and the correlations recomputed, the above relationship increased and in addition consideration correlated (significantly) negatively with proficiency ratings.

4. A further analysis of the data showed that leadership behavior of the foremen is significantly related to the demandingness of their time schedule. Those foremen who worked under relatively high production stress structured more and showed less consideration in the leadership behavior than did those foremen working under a relatively low production stress.

To date the analyses of two of the six criteria have been presented (proficiency ratings by foremen's superiors and attitudes of workers toward working under foremen showing differing amounts of leadership dimensions). The following chapter will present a similar investigation of the last four criteria (absenteeism, accident, turnover, and grievance rates).
CHAPTER 4

THE RELATIONSHIPS BETWEEN LEADERSHIP BEHAVIOR
AND INDICES OF GROUP BEHAVIOR

The preceding chapter presented an analysis of the relationships between leadership behavior and the second of the criterion variables, viz. ratings of proficiency obtained from the foreman's superior. This chapter relates the same leadership dimensions to the remaining criteria, those dependent upon the behavior of the foreman's work group. Four such group measures are used: absenteeism, accident, grievance, and turnover rates.

The following analyses are based upon 58 production foremen who were designated as "functional" leaders by their work groups and who had had no training during the period which the criteria were collected.

The opportunities for uncontrolled variables to effect the above criteria are considerable. Each of the items may be effected by various personal and job factors such as age and skill of the workers or hazards of the job. If such factors prove important, they constitute a systematic variance which could distort any relationships of group behavior with leadership behavior. Consequently before the above mentioned criteria are correlated with leadership behavior, it is important to relate them to various personal and job factors. This will be done in the following pages.

Since the number of possible contaminating factors is large, some selection was made on the basis of the presumed
importance of an item and on its availability. In the final analysis nine "contaminating" items were considered. They are: age, education, marital status, skill, seniority, method of pay (piece rate and hourly pay), hazards of the job, and pleasantness of working conditions. All but the last two items were taken directly from company records; while the remaining items were obtained by averaging independent ratings by five raters. A more complete description of the measures follows.

The scores were compiled in terms of averages for each foreman's group so as to correspond to similar units in the criteria. Age and seniority were compiled in terms of years, education-highest completed grade, skill in terms of a 12 point scale and the pay method and marital status in terms of per cent occurrence. The next paragraph explains the rating procedures used in determining pleasantness of working conditions and job hazards.

Ratings were made by sorting cards containing either foremen's names or specific jobs (see following paragraph) into five piles. The piles were defined along the dimension in question by the use of such terms as, among the most (pleasant or hazardous), above average, average, below average, among the least (pleasant or hazardous). The cards were sorted so that the number of cards in each pile corresponded to the number expected on the basis of the normal
curve. Thus 10 per cent of the cards were placed in the two end piles, 20 per cent were placed in the second and fourth piles, and 40 per cent were placed in the middle pile. Both hazards and pleasantness were conceived of in terms of factors inherent in the job and working conditions respectively.

Absenteeism and accident rates were secured for specific individuals. Hence in determining the effects of age, education, skill, etc. on these criteria the personal and job data were based only on the same individuals. Grievance and turnover rates however were secured for the work group as a whole rather than from specified people. Hence, measures of age, education, skill, etc. were based on a larger sample (at least 10 men) from each foreman's work group. This was considered more representative of the work group characteristics. Hazards and pleasantness ratings were made of the work group as a whole.

In some cases the use of the workers who described their foremen and the use of a larger sample from the same work groups did not result in different scores and in other cases, there was a considerable difference. Table 17 presents the means, sigmas, and the correlations of the two sets of measures, as well as a Chi Square test of significance of differences between the two distributions. Since none of the Chi Squares reach the level of significance com-
parability of the distributions may be assumed. It is interesting to note that skill, education, and per cent married have the highest correlations and age the lowest.

The only reliabilities computed for the "contamination" factors were those associated with the ratings. The only error variance which might occur in the other factors would be that attributable to inaccurate recording of the data, or to inaccurate reporting of the statistics by the worker to management. The reliabilities of the ratings were determined with the Hoyt method (19) which utilizes analysis of variance techniques. The resulting coefficients are listed in table 18.

Table 18

<table>
<thead>
<tr>
<th></th>
<th>Work Groups</th>
<th>Sp. Jobs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pleasantness of working conditions</td>
<td>.82</td>
<td>.71</td>
</tr>
<tr>
<td>Hazards of jobs</td>
<td>.80</td>
<td>.63</td>
</tr>
</tbody>
</table>

Inasmuch as different samples are used, the resulting analysis will be divided into two sections. One section contains the analysis of absenteeism and accident rates, and the other section contains the analysis of grievance and turnover rates.
Table 17

MEANS, SIGMAS, AND INTER-CORRELATIONS OF PERSONAL AND JOB FACTORS AS REPRESENTED BY DATA TAKEN FROM WORKERS WHO DESCRIBED FOREMEN AND ANOTHER LARGER SAMPLE REPRESENTATIVE OF WORK GROUP CHARACTERISTICS (N=58)

<table>
<thead>
<tr>
<th></th>
<th>A Men Who Described Foremen</th>
<th>B Sample Representative of Work Group</th>
<th>Correlation Between Columns A and B</th>
<th>Chi. Sq.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aver. Age (years)</td>
<td>40.37 6.80</td>
<td>40.60 4.47</td>
<td>.47</td>
<td>2.00</td>
</tr>
<tr>
<td>Aver. Education (grade)</td>
<td>9.44 1.15</td>
<td>9.09 1.45</td>
<td>.87</td>
<td>5.78</td>
</tr>
<tr>
<td>Aver. Seniority (years)</td>
<td>11.49 5.13</td>
<td>11.10 3.97</td>
<td>.52</td>
<td>.09</td>
</tr>
<tr>
<td>Aver Skill Level</td>
<td>6.88 2.52</td>
<td>6.66 2.26</td>
<td>.96</td>
<td>.28</td>
</tr>
<tr>
<td>(12 pt. scale)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Per Cent Hourly Pay</td>
<td>47.65 36.01</td>
<td>49.32 33.01</td>
<td>.73</td>
<td>3.51</td>
</tr>
<tr>
<td>Per Cent Piece Rate Pay</td>
<td>39.58 34.56</td>
<td>39.01 32.34</td>
<td>.52</td>
<td>3.04</td>
</tr>
<tr>
<td>Per Cent Married</td>
<td>80.05 15.58</td>
<td>81.32 11.91</td>
<td>.32</td>
<td>1.95</td>
</tr>
<tr>
<td>Aver. Hazard Rating</td>
<td>3.24 .72</td>
<td>2.85 1.12</td>
<td>.60</td>
<td>.75</td>
</tr>
<tr>
<td>(5 pt. scale)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aver. Pleasantness Rating</td>
<td>3.06 .88</td>
<td>3.26 .93</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(5 pt. scale)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Analysis of Absenteeism and Accident Rates

The reliabilities of each of the above mentioned criteria were determined by correlating odd and even weeks for absenteeism and odd and even months for accidents and correcting the coefficients by the Brown Spearman formula. The unit was the foreman rather than the worker. Thus while the reliability of the individual worker's record might have been low, when summed into foreman units the reliabilities became acceptable. Table 19 presents the corrected split half coefficients and the means and sigmas of the two distributions. Since the criteria were corrected by dividing by the number of individuals whose records made up that particular foreman's score, the means should be interpreted as accidents or absents per man.

Table 19

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Sigma</th>
<th>Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Absenteeism Rates</td>
<td>4.70</td>
<td>3.53</td>
<td>.85</td>
</tr>
<tr>
<td>Accident Rates</td>
<td>3.43</td>
<td>1.93</td>
<td>.72</td>
</tr>
</tbody>
</table>

Investigation of Contaminating Factors in Absenteeism and Accident Rates

As the reader will recall each of the criteria were analyzed with respect to sources of "contamination". Thus if absenteeism was found to be related to age, it is important that age be partialed before correlating absenteeism
with the leadership dimensions.

Again in review measures of nine possible contaminating variables were computed. They are: age, education, seniority, skill, piece rate pay method, hourly pay method, marital status, hazards of the job, and pleasantness of working conditions.

In order to study the effects of these upon the criteria under consideration in this section (absenteeism and accident rates) all such scores and the criteria were intercorrelated. This matrix is presented in the upper right hand section of table 20.

An inspection of the table reveals that both criteria show correlation with other factors. Thus absenteeism correlates negatively with pleasantness of working conditions and positively with hazards while accident rate shows a negative correlation with the other criterion (absenteeism rates).

The variance in the matrix and its relationship to the criteria may be more completely defined through an analysis which reduces the matrix to a series of factors. Thus the data were cluster analyzed, the rationale being that in identifying and partialling the effects of that factor or factors which have high loadings by both the criteria or criterion and other personal or job scores, one is eliminating that variance in the "contaminating" variables and the
criteria which are related to each other. If none of the personal or job scores have high loadings on the same factor as a criterion, then they need not be considered as effecting the criteria.

The method of controlling this variance, when necessary, consists of constructing the factor score which requires partialling and correlating it with both the criteria and leadership behavior. It is then partialled through standard partial correlation techniques.

When the correlational matrix presented in table 20 was cluster analyzed (52) five orthogonal factors were identified and rotated for meaningfulness. These factors and their loadings are presented in table 21.

Each factor was defined in terms of the variables with large loadings on it (the underlined variables). The following suggests definitions of each factor, and the variables and their loadings which define the factor.

I. **Type of Skill Work**: per cent hourly pay (.81), skill of group (.58), and per cent piece rate pay (-.59). This factor might be thought of as a skill factor in which method of pay is a product of the type of work done. That is, there are many skilled jobs which do not have an end product such that a piece rate method of pay is applicable.
<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>AGE OF GROUP</strong></td>
<td></td>
<td>-0.27</td>
<td>0.60</td>
<td>0.04</td>
<td>-0.06</td>
<td>-0.12</td>
<td>0.31</td>
<td>0.23</td>
<td>-0.03</td>
<td>-0.05</td>
<td>-0.07</td>
</tr>
<tr>
<td><strong>EDUCATION OF GROUP</strong></td>
<td>0.04</td>
<td>-</td>
<td>0.18</td>
<td>0.18</td>
<td>-0.03</td>
<td>-0.11</td>
<td>-0.14</td>
<td>-0.08</td>
<td>-0.04</td>
<td>-0.06</td>
<td>-0.10</td>
</tr>
<tr>
<td><strong>SENIORITY OF GROUP</strong></td>
<td>0.03</td>
<td>-0.03</td>
<td>0.19</td>
<td>0.06</td>
<td>-0.17</td>
<td>0.19</td>
<td>-0.19</td>
<td>0.39</td>
<td>-0.25</td>
<td>-0.09</td>
<td>-0.16</td>
</tr>
<tr>
<td><strong>SKILL OF GROUP</strong></td>
<td>0.04</td>
<td>0.00</td>
<td>0.03</td>
<td>0.56</td>
<td>-0.43</td>
<td>0.04</td>
<td>0.26</td>
<td>-0.04</td>
<td>-0.06</td>
<td>0.06</td>
<td>0.07</td>
</tr>
<tr>
<td><strong>PER CENT HOURLY PAY</strong></td>
<td>0.01</td>
<td>-0.08</td>
<td>-0.01</td>
<td>0.06</td>
<td>-0.73</td>
<td>0.10</td>
<td>0.39</td>
<td>0.28</td>
<td>-0.13</td>
<td>0.16</td>
<td></td>
</tr>
<tr>
<td><strong>PER CENT PIECE WORK PAY</strong></td>
<td>0.01</td>
<td>-0.02</td>
<td>-0.03</td>
<td>0.03</td>
<td>0.04</td>
<td>0.04</td>
<td>-0.53</td>
<td>0.44</td>
<td>0.07</td>
<td>0.16</td>
<td></td>
</tr>
<tr>
<td><strong>PER CENT MARRIED</strong></td>
<td>0.00</td>
<td>0.03</td>
<td>0.09</td>
<td>0.03</td>
<td>-0.03</td>
<td>0.04</td>
<td>0.13</td>
<td>0.11</td>
<td>0.06</td>
<td>0.16</td>
<td></td>
</tr>
<tr>
<td><strong>PLEASANTNESS OF WORKING COND.</strong></td>
<td>0.01</td>
<td>-0.06</td>
<td>-0.03</td>
<td>0.08</td>
<td>-0.08</td>
<td>0.05</td>
<td>0.01</td>
<td>0.01</td>
<td>0.61</td>
<td>0.27</td>
<td></td>
</tr>
<tr>
<td><strong>HAZARDS OF JOB</strong></td>
<td>0.03</td>
<td>0.03</td>
<td>-0.01</td>
<td>-0.01</td>
<td>0.09</td>
<td>0.00</td>
<td>0.04</td>
<td>-0.01</td>
<td>0.00</td>
<td>-0.04</td>
<td></td>
</tr>
<tr>
<td><strong>ABSENTEEISM RATE</strong></td>
<td>0.04</td>
<td>-0.08</td>
<td>0.02</td>
<td>0.07</td>
<td>0.00</td>
<td>0.02</td>
<td>0.09</td>
<td>0.02</td>
<td>0.07</td>
<td>-0.20</td>
<td></td>
</tr>
<tr>
<td><strong>ACCIDENT RATE</strong></td>
<td>0.02</td>
<td>0.02</td>
<td>-0.04</td>
<td>-0.06</td>
<td>0.01</td>
<td>0.09</td>
<td>0.62</td>
<td>0.00</td>
<td>0.01</td>
<td>0.00</td>
<td></td>
</tr>
</tbody>
</table>

*Lower left hand sections contain the final residual table.
<table>
<thead>
<tr>
<th></th>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
<th>V</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Age of group</td>
<td>.11</td>
<td>.69</td>
<td>.01</td>
<td>-.09</td>
<td>-.02</td>
</tr>
<tr>
<td>2. Education of group</td>
<td>.00</td>
<td>-.32</td>
<td>-.09</td>
<td>-.05</td>
<td>.29</td>
</tr>
<tr>
<td>3. Seniority of group</td>
<td>-.02</td>
<td>.82</td>
<td>-.26</td>
<td>-.06</td>
<td>.30</td>
</tr>
<tr>
<td>4. Skill of group</td>
<td>.58</td>
<td>.03</td>
<td>-.03</td>
<td>-.10</td>
<td>.59</td>
</tr>
<tr>
<td>5. Per cent hourly pay</td>
<td>.81</td>
<td>-.04</td>
<td>-.50</td>
<td>-.05</td>
<td>-.03</td>
</tr>
<tr>
<td>6. Per cent piece rate pay</td>
<td>-.59</td>
<td>.04</td>
<td>.58</td>
<td>.19</td>
<td>-.08</td>
</tr>
<tr>
<td>7. Per cent Married</td>
<td>.17</td>
<td>.39</td>
<td>.08</td>
<td>.15</td>
<td>-.02</td>
</tr>
<tr>
<td>8. Pleasantness of working conditions</td>
<td>.13</td>
<td>.32</td>
<td>-.73</td>
<td>.04</td>
<td>.05</td>
</tr>
<tr>
<td>9. Hazards of job</td>
<td>.05</td>
<td>-.02</td>
<td>.82</td>
<td>-.03</td>
<td>-.01</td>
</tr>
<tr>
<td>10. Absenteeism rate</td>
<td>-.01</td>
<td>-.09</td>
<td>.28</td>
<td>-.42</td>
<td>.00</td>
</tr>
<tr>
<td>11. Accident rate</td>
<td>.11</td>
<td>-.07</td>
<td>-.03</td>
<td>.50</td>
<td>.00</td>
</tr>
</tbody>
</table>
II. **Length of Service:** age (.69), seniority (.82), per cent married (.39), pleasantness (.32), and education (-.32). This factor shows that age, seniority, per cent of sample married, and pleasantness of job vary directly and are inversely related to amount of education.

III. **Working Conditions:** hazards (.32), per cent piece rate pay (.58), per cent hourly pay (-.50), and pleasantness (-.73). This factor shows that those workers in jobs with high hazard ratings tend to be paid to a greater extent by piece rate methods as against hourly rates, and have jobs which tend to have low pleasantness ratings.

IV. **Exposure to the Job:** absenteeism rate (-.42) and accident rate (.50). This factor shows that workers with high absenteeism rates tend to have low accident rates and/or those workers with low accidents rates tend to have high absenteeism rates. This might be explained in terms of exposure to job hazards.

V. **Training:** skill (.59), seniority (.30), education (.29). This factor shows that skill, seniority, and education vary together.

In brief, the cluster analysis indicates that the variance in the correlations may be explained by these five factors and their loadings, or that instead of thinking in terms of eleven variables we need only consider five. In addition the eleven variables were inter-correlated to some
extent which further confused the pattern; while these five factors are independent. Since they are independent we need only concern ourselves with the factors which contain the criteria.

This analysis indicates that the only variable clearly associated with either of the criteria is the other criterion. A glance at the correlational matrix shows that the original correlation between these two variables is -.20. Thus the cluster analysis yielded somewhat the same pattern. The implication of this analysis is that when correlating either one of the criteria with leadership behavior the effects of the other must be partialled. The method used in partialling has already been summarized. A step by step procedure follows.

The original correlation between the criteria was put into a Doolittle solution in which the loadings of each of the variables on the common factor (IV) were considered the "criteria". Betas for the prediction of the "criteria" were obtained for both absenteeism and accident rates. These betas were then converted in b's by dividing each by the sigmas of its respective raw score distribution. Each foreman's absentee and accident rate scores were then multiplied by their respective b's and the results summed to produce a factor score for each foreman. This factor score was correlated with each of the leadership dimensions and the two
criteria. The effects of this factor were then partialled through inserting these coefficients in the standard formula for partialling through use of correlational terms.

Results

Table 22 presents the correlational coefficients relative to the partialling process. None of the correlations have been presented to date.

When the above coefficients were used in the partialling process the partial correlational coefficients presented in table 23 were obtained.

The above table points to a significant positive relationship between structure scores and absenteeism rates and a significant negative relationship between consideration scores and absenteeism rates. Accident rate did not correlate significantly with either of the leadership dimensions.

We have now examined four of the six criteria, and are ready to proceed to a similar analysis of grievance and turnover rates.

Analysis of Grievance and Turnover Rates

The reliabilities of the above mentioned criteria were computed by correlating odd and even months and correcting the coefficient by the Brown Spearman formula. Again the unit was the foreman rather than a worker. Table 24 presents the corrected reliability estimates as well as the means and sigmas of the distributions. Since the number of griev-
Table 22

CORRELATIONS USED IN PARTIALLING CONTAMINATING FACTORS WHEN CORRELATING ABSENTEEISM AND ACCIDENT RATES WITH LEADERSHIP BEHAVIOR N=58

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consideration</td>
<td></td>
<td></td>
<td>.08</td>
<td>-.39</td>
<td>.34</td>
</tr>
<tr>
<td>Structure</td>
<td>2.</td>
<td></td>
<td>.10</td>
<td>.24</td>
<td>-.09</td>
</tr>
<tr>
<td>Accident rate</td>
<td></td>
<td></td>
<td></td>
<td>.38</td>
<td></td>
</tr>
<tr>
<td>Absenteeism rate</td>
<td>4.</td>
<td></td>
<td></td>
<td></td>
<td>.18</td>
</tr>
<tr>
<td>Factor score</td>
<td>5.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 23

PARTIAL CORRELATION COEFFICIENTS BETWEEN THE CRITERIA AND LEADERSHIP BEHAVIOR WHEN THE EFFECTS OF THE CONTAMINATING FACTORS ARE REMOVED N=58

<table>
<thead>
<tr>
<th></th>
<th>Corr. with Consider.</th>
<th>Corr. with Structure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Absenteeism rate</td>
<td>-.49***</td>
<td>.27*</td>
</tr>
<tr>
<td>Accident rate</td>
<td>-.06</td>
<td>.15</td>
</tr>
</tbody>
</table>

*** Significant beyond 1 per cent level of confidence.
* Significant at 5 per cent level of confidence.
ances and quits were corrected for "number of sources" from which such might arise by dividing by the number of men in each group, the means should be read as the grievances and quits per man.

Table 24

MEANS, SIGMAS, AND RELIABILITY ESTIMATES OF GRIEVANCE AND TURNOVER RATES

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Sigma</th>
<th>Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grievance rates</td>
<td>.19</td>
<td>.17</td>
<td>.73</td>
</tr>
<tr>
<td>Turnover rates</td>
<td>.11</td>
<td>.10</td>
<td>.59</td>
</tr>
</tbody>
</table>

Investigation of Contaminating Factors in Grievance and Turnover Rates

A similar problem, of contamination, was confronted when dealing with grievance and turnover rates as with absenteeism and accident rates. As such the method of identifying and partialling sources of uncontrolled variance was identical with that reported earlier. The one difference was in the compilation of the job and personal scores. As the reader will recall in the analysis of absenteeism and accident rates such scores were compiled from the men who described their foremen since only their absenteeism and accidents were considered. Since however grievances and turnover came from the work group as a unit, a more representative (of work group characteristics) measure was desired. Hence the personal and job scores were based on
at least ten men from each work group.

As with the previous analysis the scores were inter-correlated. An inspection of the matrix presented in table 25, shows that each of the criteria correlated with several variables. Grievance rates shows correlations with hazards of job (.33), pleasantness of working conditions (-.32), education (-.39), per cent hourly pay (-.21) and turnover rate (.20); while turnover correlates with per cent married (-.43), hazards of job (.21), skill (-.20), and grievance rate (.20).

Again, a more accurate understanding of the sources of variance in the matrix was obtained through a cluster analysis (52). Five factors were identified and rotated for meaningfulness. Since none of the cells in the residual table (see lower left hand section of table 25) are greater than .09, there is assurance in believing that there is little other than error variance left. The factors and their loadings are presented in table 26.

Each factor was defined in terms of the variables with large loadings on it (the underlined variables). The following suggests the definitions of each factor and the variables and their loadings which define the factor.

I. Type of Skill Work: skill (.52), per cent hourly pay (.52), pleasantness (.60), and piece work pay (-.80). This factor shows that skill, hourly pay, and pleasantness of the
### Table 25

**CORRELATIONAL MATRIX AND FINAL RESIDUAL TABLE OF PERSONAL FACTORS, JOB FACTORS, AND GRIEVANCE AND TURNOVER RATES**

<table>
<thead>
<tr>
<th></th>
<th>Age of Group</th>
<th>Education of Group</th>
<th>Seniority of Group</th>
<th>Skill of Group</th>
<th>Per Cent Married</th>
<th>Per Cent Hourly Pay</th>
<th>Per Cent Piece Work Pay</th>
<th>Pleasantness of Working Cond.</th>
<th>Hazards of Job</th>
<th>Grievance Rate</th>
<th>Turnover Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1.</strong></td>
<td>-</td>
<td>-19</td>
<td>.55</td>
<td>.02</td>
<td>.09</td>
<td>.15</td>
<td>-.02</td>
<td>-.33</td>
<td>-.10</td>
<td>-.09</td>
<td>-.01</td>
</tr>
<tr>
<td><strong>2.</strong></td>
<td>-.07</td>
<td>-</td>
<td>.11</td>
<td>.28</td>
<td>.03</td>
<td>.07</td>
<td>-.09</td>
<td>.03</td>
<td>-.16</td>
<td>-.39</td>
<td>-.11</td>
</tr>
<tr>
<td><strong>3.</strong></td>
<td>-.01</td>
<td>.02</td>
<td>-</td>
<td>.17</td>
<td>.03</td>
<td>-.11</td>
<td>.42</td>
<td>.41</td>
<td>.02</td>
<td>-.13</td>
<td></td>
</tr>
<tr>
<td><strong>4.</strong></td>
<td>-.06</td>
<td>.07</td>
<td>.01</td>
<td>-.04</td>
<td>.31</td>
<td>.42</td>
<td>.26</td>
<td>-.19</td>
<td>-.12</td>
<td>-.20</td>
<td></td>
</tr>
<tr>
<td><strong>5.</strong></td>
<td>.09</td>
<td>.06</td>
<td>.02</td>
<td>-.09</td>
<td>-.27</td>
<td>-.11</td>
<td>.25</td>
<td>.20</td>
<td>-.03</td>
<td>-.43</td>
<td></td>
</tr>
<tr>
<td><strong>6.</strong></td>
<td>-.04</td>
<td>.05</td>
<td>.02</td>
<td>.09</td>
<td>-.05</td>
<td>-.33</td>
<td>.37</td>
<td>-.26</td>
<td>-.21</td>
<td>-.11</td>
<td></td>
</tr>
<tr>
<td><strong>7.</strong></td>
<td>-.02</td>
<td>.02</td>
<td>-.01</td>
<td>.08</td>
<td>-.03</td>
<td>.05</td>
<td>-.47</td>
<td>.26</td>
<td>.16</td>
<td>-.08</td>
<td></td>
</tr>
<tr>
<td><strong>8.</strong></td>
<td>.06</td>
<td>-.03</td>
<td>-.04</td>
<td>.96</td>
<td>-.02</td>
<td>-.02</td>
<td>.06</td>
<td>-.69</td>
<td>-.32</td>
<td>-.07</td>
<td></td>
</tr>
<tr>
<td><strong>9.</strong></td>
<td>-.04</td>
<td>-.05</td>
<td>.02</td>
<td>-.06</td>
<td>.06</td>
<td>-.02</td>
<td>-.01</td>
<td>-.09</td>
<td>-.33</td>
<td>.21</td>
<td></td>
</tr>
<tr>
<td><strong>10.</strong></td>
<td>-.09</td>
<td>.00</td>
<td>.09</td>
<td>-.06</td>
<td>.03</td>
<td>-.07</td>
<td>.00</td>
<td>.02</td>
<td>.04</td>
<td>-.20</td>
<td></td>
</tr>
<tr>
<td><strong>11.</strong></td>
<td>-.01</td>
<td>.02</td>
<td>-.01</td>
<td>-.07</td>
<td>-.04</td>
<td>.09</td>
<td>-.05</td>
<td>.02</td>
<td>.06</td>
<td>.08</td>
<td></td>
</tr>
</tbody>
</table>

*Lower left hand section of the matrix contains the final residual table.*
Table 26

FACTORS IDENTIFIED IN ANALYSIS OF SOURCES OF CONTAMINATION IN GRIEVANCE AND TURNOVER RATES

<table>
<thead>
<tr>
<th></th>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
<th>V</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Age of group</td>
<td>-.12</td>
<td>.56</td>
<td>.07</td>
<td>.10</td>
</tr>
<tr>
<td>2</td>
<td>Education of group</td>
<td>.10</td>
<td>-.14</td>
<td>.08</td>
<td>-.78</td>
</tr>
<tr>
<td>3</td>
<td>Seniority of group</td>
<td>-.04</td>
<td>.74</td>
<td>-.12</td>
<td>.08</td>
</tr>
<tr>
<td>4</td>
<td>Skill of group</td>
<td>.52</td>
<td>-.13</td>
<td>-.06</td>
<td>-.10</td>
</tr>
<tr>
<td>5</td>
<td>Per cent Married</td>
<td>.14</td>
<td>.17</td>
<td>-.60</td>
<td>-.05</td>
</tr>
<tr>
<td>6</td>
<td>Per cent hourly pay</td>
<td>.52</td>
<td>.04</td>
<td>-.59</td>
<td>-.02</td>
</tr>
<tr>
<td>7</td>
<td>Per cent piece work pay</td>
<td>-.20</td>
<td>-.08</td>
<td>-.04</td>
<td>.02</td>
</tr>
<tr>
<td>8</td>
<td>Pleasantness of working conditions</td>
<td>.60</td>
<td>.69</td>
<td>-.08</td>
<td>-.15</td>
</tr>
<tr>
<td>9</td>
<td>Hazards of job</td>
<td>-.27</td>
<td>-.58</td>
<td>.18</td>
<td>.22</td>
</tr>
<tr>
<td>10</td>
<td>Grievance rate</td>
<td>-.19</td>
<td>-.21</td>
<td>.02</td>
<td>.53</td>
</tr>
<tr>
<td>11</td>
<td>Turnover rate</td>
<td>.04</td>
<td>.00</td>
<td>.67</td>
<td>.20</td>
</tr>
</tbody>
</table>
job vary directly and are inversely related to per cent piece work pay.

II. Length of Service: seniority (.74), pleasantness (.69), age (.56), and hazards (-.58). This factor shows that the older workers have the most seniority and move toward those jobs with relatively higher pleasantness and lower hazard ratings.

III. Stability or Responsibility: turnover (.67), per cent hourly pay (-.39), and per cent married (-.60). This factor shows that turnover rates vary inversely with the percentage of men who are married and the percentage of men who are paid on an hourly scale.

IV. Intelligence: education (-.78) and grievances (.55). This factor shows that the work groups composed of men of relatively higher education tend to have lower grievance rates than those work groups composed of men with relatively less education. It might reflect the extent to which the worker can understand and appreciate the foreman's position and the necessity for certain actions.

V. Training: Skill (.60), Seniority (.42), and Age (.37). This factor shows that age, seniority, and skill vary directly with each other.

The two factor analyses reveal similar or identical factors in three (I, II, V) of the five cases. The other two factors (III and IV) are somewhat specific to the differ-
ent criteria in each matrix.

As with the previous analysis this indicates that the variance in the matrix may be accounted for in terms of five independent factors, rather than in terms of eleven related variables. This presents a much sharper definition of the matrix and allows the same type of partialling process outlined earlier. Since each of the criteria have loadings on only one factor, it means that four of the five factors may be ignored when dealing with any one criterion. The rationale of course is that variance on these other four factors do not effect any one criterion since they are independent of it.

The results of this analysis indicate that two variables (per cent married and per cent hourly pay) must be considered when partialling the sources of contamination from turnover rates and only the amount of education need be considered when partialling contamination from grievance rates.

Results

Table 27 presents the correlational coefficients relevant to partialling contamination from grievances rates and table 28 presents a similar series of coefficients used in correcting turnover rates.

When the above coefficients were used in partialling the effects of the contaminating factors, the partial corre-
Table 27
CORRELATIONS USED IN PARTIALLING CONTAMINATING FACTORS WHEN CORRELATING GRIEVANCE RATES WITH LEADERSHIP BEHAVIOR

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consideration</td>
<td>1.</td>
<td>-</td>
<td>-</td>
<td>.23</td>
</tr>
<tr>
<td>Initiation of Structure</td>
<td>2.</td>
<td>-</td>
<td>.14</td>
<td>.39</td>
</tr>
<tr>
<td>Factor Score</td>
<td>3.</td>
<td>-</td>
<td>.78</td>
<td></td>
</tr>
<tr>
<td>Grievance Rate</td>
<td>4.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 28
CORRELATIONS USED IN PARTIALLING CONTAMINATING FACTORS WHEN CORRELATING TURNOVER RATES WITH LEADERSHIP BEHAVIOR

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consideration</td>
<td>1.</td>
<td>-</td>
<td>-</td>
<td>.31</td>
</tr>
<tr>
<td>Initiation of Structure</td>
<td>2.</td>
<td>-</td>
<td>.06</td>
<td>.08</td>
</tr>
<tr>
<td>Factor Score</td>
<td>3.</td>
<td>-</td>
<td>.74</td>
<td></td>
</tr>
<tr>
<td>Turnover Rate</td>
<td>4.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
lation coefficients prescribed in table 29 were obtained.

Table 29

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Grievance rate</td>
<td>.45*</td>
<td>-.07</td>
</tr>
<tr>
<td>Turnover rate</td>
<td>.06</td>
<td>.13</td>
</tr>
</tbody>
</table>

* Significant beyond 1 per cent level of confidence.

An inspection of table 29 reveals one significant relationship, that, a positive correlation between grievances and initiation of structure. Thus the more the foreman structures in his relationships with his work group the higher his grievance rate.

Summary and Additional Discussion

We have now noted the relationship between the Foreman Behavior Description Questionnaires and the last of the six criteria. In general the results of the chapter showed significant positive relationships between initiation of structures scores and grievance rates and absenteeism rates, while consideration scores were negatively related to absenteeism rates.

The above summary is restricted to production units inasmuch as non-production groups were dropped because of what appeared to be some basic differences. It might be in-
teresting before leaving this section to look at a somewhat similar analysis for the non-production groups. No attempt was made to identify and eliminate sources of contamination in the data since the number (20) was considered too small.

We have already noted that the non-production groups, in contrast to the production sections, showed a tendency toward positive relationships between consideration scores and proficiency ratings and a negative relationship between initiation of structure and proficiency ratings.

In respect to the four criteria mentioned in this chapter, table 30 presents a correlational analysis of group behavior indices and leadership behavior.

Table 30

CORRELATIONS BETWEEN GROUP BEHAVIOR INDICES AND LEADERSHIP BEHAVIOR IN NON-PRODUCTION GROUPS

<table>
<thead>
<tr>
<th>Absenteeism</th>
<th>Accidents</th>
<th>Grievances</th>
<th>Turnover</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consideration</td>
<td>-.38</td>
<td>-.42*</td>
<td>.15</td>
</tr>
<tr>
<td>Init. of Structure</td>
<td>.06</td>
<td>.18</td>
<td>.23</td>
</tr>
</tbody>
</table>

* Significant at or beyond five per cent level of confidence.

It is interesting to note that in comparison with comparable correlations for the production groups, accident and turnover rates show considerably greater relationship with leadership behavior while absenteeism and grievance rates assume a smaller relationship. This might be taken as fur-
ther evidence of the dichotomy of the two groups.

The author would like to take this opportunity to consider an hypothesis relating to the nature of the variance in accident and absenteeism rates which is correlating with the leadership dimensions, and which might account for the differences in the reported correlations.

The variance which is correlating with the leadership dimensions is that variance associated with an attempt to obtain relief from an unpleasant situation created by the leadership behavior of the foreman. We have noted that workers like working for foremen who are high on consideration and low on initiation of structure. Thus some workers might be using minor injuries as excuses for trips to the dispensary; however, before the worker can leave his job, he must be released by his foreman. In the production departments the time schedule is such that every man is needed. To excuse a worker means that production will be slowed or impaired to some extent, or perhaps throw too great a burden upon other workers. This means that a worker's injury must be serious enough to warrant immediate attention.

In the non-production departments the press of the schedule is considerably less and the foreman is able to release his men without endangering his work obligations.
He may realize that the injury is minor, but he knows that he is "keeping peace in the family". Therefore, in the latter situation, as against the former, minor accidents can operate as a method of escape. Similarly when this escape avenue is present, the workers feel less need to take advantage of the alternate route of absenteeism which is the less desirable of the two since it means loss of pay. Correspondingly, absenteeism shows a smaller relationship with the leadership dimensions.

This is entirely hypothetical. But it does constitute further evidence of the difference between these two groups as well as help in understanding the extent of such differences.
SECTION IV
AN EVALUATION OF THE EFFECTS OF A TRAINING PROGRAM UPON LEADERSHIP BEHAVIOR, ATTITUDES, AND EXPECTATIONS.
EFFECTS OF TRAINING ON FOREMAN LEADERSHIP BEHAVIOR, EXPECTATIONS, AND ATTITUDES

In addition to studying the relationships between consideration and initiation of structure scores and various criteria, the leadership dimensions were also considered in relation to a training situation. More specifically, the effects of a training situation were noted upon foreman leadership behavior, attitudes, and expectations. The following paragraphs will present background material, methodology, and results.

In 1947 the central offices of International Harvester Company in Chicago, Illinois, opened a training program which is attended by foremen and supervisors from many plants scattered over the United States and Canada. The course is laid out on an eight hour a day-two week basis, with all expenses being paid by the company. Such subjects as planning and organization, logical thinking, and economics are taught. According to Walker, the purpose of the course is to change attitudes and behavior of people in supervisory positions (55). As Fleishman noted, a great deal of the curriculum is oriented toward teaching human relations.

Late in 1951 the Springfield, Ohio, branch of International Harvester Company organized, in conjunction with
Wittenberg College, a refresher course for their management personnel who had attended the central training school at Chicago. Since the purpose of the program is to refresh the material presented in the central school, the courses are organized around the same subject matter, although in a somewhat shorter form. Thus, the central school requires two weeks, while the refresher course lasts one week. Such subjects as human relations, economics, and organization are taught. The classes average around twenty-five men and employ the lecture-discussion approach.

**Purpose**

The purpose of this investigation is to see if attending the refresher course at Wittenberg College results in any measurable change in leadership behavior, attitudes, and/or expectations.

**Caution**

The data presented in the preceding section on the relation between proficiency and consideration and structure suggest that the work conditions and general orientation of the production and the non-production foremen are so different that they should not be combined into a single group without further investigation into the areas of differences and similarities. Thus, it is possible that in combining the two groups in unequal proportions, one is introducing a bias.
Unfortunately, it was not possible to construct control and experimental groups without using both groups; nor was it possible to distribute both groups equally between the control and experimental sections and still have groups of sufficient size to conduct the investigation.

Thus, any results should be qualified with the above note until more is known concerning the similarities and differences of the two groups and the possible effects thereof.

Suffice it to say that ten of the men in the control group are non-production foremen as against only one in the experimental group.

**Methodology**

The methodology was dictated by the conditions under which the investigation was done. It was necessary to work with data which were a function of prior administrative decisions made by management. The data were such that the following analysis seemed the most adequate, despite its apparent limitations.

Two groups of thirty-one foremen were selected, each of whom had been to the central training school in Chicago. One of the groups (experimental) had also attended the training school at Wittenberg College, while the other group (control) had not attended this second school. The average time since attending Wittenberg was 3.24 months.
with a sigma of 1.56 months.

The groups were matched on a number of variables including several personal history items and length of time since attending the central training school in Chicago. In addition, the significance of differences between the two groups were noted, at each administration, on the two forms filled out by the foreman's bosses, What You expect of Your Foremen and Leadership Opinion Questionnaire. Since any change in foreman behavior, expectations, or attitudes, could be a function of a corresponding change in their bosses' reactions, it was important that such be noted.

Change as the result of the introduction of the experimental variable (training) was explained on four questionnaires, three of which were filled out by the foremen (Foreman Leadership Opinion Questionnaire, Supervisory Behavior Description, and What Your Boss Expects of You) and one filled out by the workers (Foreman Behavior Description). Differences between the experimental and control groups were noted in both administrations (pre and post training) and significance of change within the same group was computed. Whenever possible, the correlation between scores was taken into account in order to reduce the standard error of the difference between mean scores.
<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>CONTROL</th>
<th>EXPERIMENTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MEAN</td>
<td>SIGMA</td>
</tr>
<tr>
<td>Age</td>
<td>42.86</td>
<td>7.28</td>
</tr>
<tr>
<td>Education</td>
<td>11.66</td>
<td>2.42</td>
</tr>
<tr>
<td>Years at International Harvester</td>
<td>16.86</td>
<td>7.28</td>
</tr>
<tr>
<td>Years as a supervisor</td>
<td>6.82</td>
<td>3.90</td>
</tr>
<tr>
<td>Number of men supervised</td>
<td>26.73</td>
<td>9.52</td>
</tr>
<tr>
<td>Months since attending central school in Chicago</td>
<td>24.21</td>
<td>8.73</td>
</tr>
</tbody>
</table>
Results

Table 31 presents the means, sigmas, and critical ratios between the two groups on the personal history items and length of time since attending central training school in Chicago. Since none of the critical ratios reach the five per cent level of significance, we may assume the groups are similar in these respects. Cognizance should be taken, however, of the critical ratio for education, which reached the seven per cent level of significance.

Table 32 presents the means, sigmas, and critical ratios of the two forms filled out by the foremen's bosses. It is rather important that there be no difference between the two groups at either of the administrations, for, as stated previously, it is possible that a change in the foreman's behavior might result as a function of a change in the behavior and expectations of his boss. Again none of the critical ratios reached the five per cent level of significance; although one (1.76) approached the required (1.96) ratio for such significance.

Table 33 presents the means, sigmas, and critical ratios on the first administration of those four questionnaires in which change was investigated as a result of the introduction of the experimental variable (training). Again none of the critical ratios reached the five per cent level of significance, although one (What Your Boss Expects of You)
Table 32

VARIABLES CONTROLLED ON BOTH ADMINISTRATIONS

FIRST ADMINISTRATION

| VARIABLE | DIMENSION | CONTROL | | | | | EXPERIMENTAL | | | |
|----------|-----------|---------|------------|------------|------------|------------|---------|--------|--------|
|          |           | MEAN    | SIGMA      | MEAN       | SIGMA      | C.R.       |         |        |        |
| Number   | Number    | MEAN    | SIGMA      | MEAN       | SIGMA      | C.R.       |         |        |        |
|          |           | 53.29   | 6.72       | 53.16      | 7.02       | 1.59       |         |        |        |
| of Your Foremen | Consideration | Init. Struct. | 55.26 | 7.00 | 52.71 | 7.44 | 1.39 |
| Leadership Opinion | Consideration | Questionnaire | 58.00 | 4.92 | 57.48 | 6.10 | 1.45 |
| Questionnaire | Init. Struct. | 52.16 | 7.63 | 50.17 | 9.15 | 1.45 |

SECOND ADMINISTRATION

| VARIABLE | DIMENSION | CONTROL | | | | | EXPERIMENTAL | | | |
|----------|-----------|---------|------------|------------|------------|------------|---------|--------|        |
|          |           | MEAN    | SIGMA      | MEAN       | SIGMA      | C.R.       |         |        |        |
| Number   | Number    | MEAN    | SIGMA      | MEAN       | SIGMA      | C.R.       |         |        |        |
|          |           | 50.64   | 10.28      | 55.42      | 11.01      | 1.76       |         |        |        |
| of Your Foremen | Consideration | Init. Struct. | 53.19 | 6.36 | 51.32 | 7.33 | 1.07 |
| Leadership Opinion | Consideration | Questionnaire | 57.70 | 5.62 | 59.97 | 5.26 | 1.64 |
| Questionnaire | Init. Struct. | 52.87 | 7.51 | 50.81 | 8.01 | 1.45 |

Filled out by the foremen's bosses
Table 33

DIFFERENCES BETWEEN EXPERIMENTAL AND CONTROL GROUPS ON FIRST ADMINISTRATION

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>DIMENSION</th>
<th>CONTROL</th>
<th>CONTROL</th>
<th>EXPERIMENTAL</th>
<th>EXPERIMENTAL</th>
<th>C.R.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>MEAN</td>
<td>SIGMA</td>
<td>MEAN</td>
<td>SIGMA</td>
<td></td>
</tr>
<tr>
<td>Filled out by foremen</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Supervisory Behavior</td>
<td>Consider.</td>
<td>72.64</td>
<td>20.21</td>
<td>77.35</td>
<td>18.64</td>
<td>---</td>
</tr>
<tr>
<td>Description</td>
<td>Init. Str.</td>
<td>46.00</td>
<td>8.09</td>
<td>49.45</td>
<td>8.64</td>
<td>1.62</td>
</tr>
<tr>
<td>2. What does your boss</td>
<td>Consider.</td>
<td>49.58</td>
<td>8.60</td>
<td>53.45</td>
<td>8.61</td>
<td>1.77</td>
</tr>
<tr>
<td>Expect of you</td>
<td>Init. Str.</td>
<td>49.55</td>
<td>10.07</td>
<td>50.42</td>
<td>10.33</td>
<td>---</td>
</tr>
<tr>
<td>3. Foreman Leadership</td>
<td>Consider.</td>
<td>56.00</td>
<td>8.08</td>
<td>54.13</td>
<td>6.58</td>
<td>1.00</td>
</tr>
<tr>
<td>Opinion Questionnaire</td>
<td>Init. Str.</td>
<td>52.61</td>
<td>9.12</td>
<td>52.87</td>
<td>6.98</td>
<td>---</td>
</tr>
<tr>
<td>Filled out by workers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Foreman Behavior</td>
<td>Consider.</td>
<td>72.58</td>
<td>15.45</td>
<td>70.90</td>
<td>12.72</td>
<td>---</td>
</tr>
<tr>
<td>Description</td>
<td>Init. Str.</td>
<td>40.29</td>
<td>7.32</td>
<td>42.31</td>
<td>6.30</td>
<td>1.40</td>
</tr>
</tbody>
</table>
approaches this level with a critical ratio of 1.77. This table indicates that both groups may theoretically be treated as having the same initial scores on these four questionnaires before the experimental variable was introduced. However, there still may be some doubt in view of the closeness of several of the critical ratios to the five per cent level of confidence. Therefore, two types of analysis are made of with the same data. The first is the more conventional of the two and regards the two groups as matched on the basis of their first scores and computes significance of difference between the scores for the second administration. The second method assumes the initial scores are different, makes allowances for this, and thus obviates the necessity of having perfectly matched scores.

The reference for this second technique may be found in Peters and Voorhis (p. 463) under the title of A Regression Technique for Matching Groups. In essence, the method is as follows:

The means, sigmas and correlation between the first and second administration for the control group are used to establish a regression equation which predicts the second score on the basis of the first score. This formula is then applied to the experimental group and a second score is predicted on the basis of their first administration
score. The differences between the predicted and obtained scores are noted and tested for statistical significance. A significant difference implies that the introduction of the experimental variable has resulted in a significant change in the scores of the experimental group.

The analysis by conventional method is presented first and is followed by the results of the second method.

Analysis of Data by Conventional Method

Table 34 presents the means, sigmas, and critical ratios on the same four questionnaires, but at the time of the second administration. A check on the critical ratios shows that none of them reach significance. Again notice should be taken of the critical ratio between the two groups on the form filled out by the workers. This ratio reaches the seven per cent level of confidence, which might be considered close enough to warrant some attention. The difference between the scores on this questionnaire indicates that the experimental group, with the refresher course at Wittenberg, shows a greater amount of structure than does the control group.

In addition to noting differences between the two groups, the data were also analyzed to see if there were significant changes within a single group. Table 35 presents the test-retest correlations between the scores for both administrations for each group and the resulting
critical ratio when the correlation is taken into account. For the means and sigmas see Tables 33 and 34.

In this analysis one significant change is noted. There is a significant drop in the mean structure score for those foremen comprising the control group. None of the other critical ratios approached significance.

**Analysis of Data by the Statistical Regression Method**

As mentioned above, this method of analysis involved computing the regression equation describing the linear regression of the second test scores on the first test scores for the control group. This formula is then used to predict the second test score, for each of the members of the experimental group, given their first score. The differences between the predicted and obtained scores are then summed algebraically and tested for significance. The reference to this method has been cited earlier.

The results of this method are listed in table 36 in terms of the differences between the predicted and obtained scores and the significance of this difference. A minus mean score means the predicted scores were less than obtained scores. The means and sigmas of the distributions are reported elsewhere in the chapter.
Table 34

DIFFERENCES BETWEEN EXPERIMENTAL AND CONTROL GROUPS ON THE SECOND ADMINISTRATION

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>DIMENSION</th>
<th>MEAN</th>
<th>SIGMA</th>
<th>MEAN</th>
<th>SIGMA</th>
<th>C.R.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Filled out by foremen</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Supervisory Behavior</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Description</td>
<td>Consideration</td>
<td>74.67</td>
<td>20.61</td>
<td>75.55</td>
<td>17.54</td>
<td>----</td>
</tr>
<tr>
<td></td>
<td>Init. Struct.</td>
<td>47.16</td>
<td>9.35</td>
<td>50.21</td>
<td>9.25</td>
<td>1.33</td>
</tr>
<tr>
<td>2. Foreman Leadership</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Opinion Q.</td>
<td>Consideration</td>
<td>54.87</td>
<td>6.79</td>
<td>54.32</td>
<td>7.12</td>
<td>----</td>
</tr>
<tr>
<td></td>
<td>Init. Struct.</td>
<td>50.90</td>
<td>8.55</td>
<td>55.45</td>
<td>6.98</td>
<td>1.29</td>
</tr>
<tr>
<td>3. What Does Your Boss</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expect of You</td>
<td>Consideration</td>
<td>48.19</td>
<td>13.20</td>
<td>51.23</td>
<td>15.00</td>
<td>1.02</td>
</tr>
<tr>
<td></td>
<td>Init. Struct.</td>
<td>50.33</td>
<td>8.32</td>
<td>52.58</td>
<td>10.00</td>
<td>----</td>
</tr>
<tr>
<td>Filled out by Workers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Foreman Behavior</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Description</td>
<td>Consideration</td>
<td>75.48</td>
<td>13.21</td>
<td>73.03</td>
<td>12.70</td>
<td>----</td>
</tr>
<tr>
<td></td>
<td>Init. Struct.</td>
<td>37.48</td>
<td>6.31</td>
<td>40.74</td>
<td>7.34</td>
<td>1.85</td>
</tr>
</tbody>
</table>
**Table 35**

SIGNIFICANCE OF CHANGE BETWEEN TWO ADMINISTRATIONS WITHIN THE SAME GROUP

(For means and sigmas see tables 33 and 34)

<table>
<thead>
<tr>
<th></th>
<th>Control</th>
<th>Experimental</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( r^* )</td>
<td>C.R.</td>
</tr>
<tr>
<td><strong>A. Filled out by foremen</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Foreman Leadership Opinion Questionnaire</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Consideration</td>
<td>( .90 )</td>
<td>1.54</td>
</tr>
<tr>
<td>b. Structure</td>
<td>( .74 )</td>
<td>1.48</td>
</tr>
<tr>
<td>2. Supervisory Behavior Description</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Consideration</td>
<td>( .77 )</td>
<td></td>
</tr>
<tr>
<td>b. Structure</td>
<td>( .60 )</td>
<td></td>
</tr>
<tr>
<td>3. What Does Your Boss Expect of You</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Consideration</td>
<td>( .34 )</td>
<td></td>
</tr>
<tr>
<td>b. Structure</td>
<td>( .58 )</td>
<td></td>
</tr>
<tr>
<td><strong>B. Filled out by workers</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Foreman Behavior Description</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Consideration</td>
<td>( .56 )</td>
<td>1.21</td>
</tr>
<tr>
<td>b. Structure</td>
<td>( .53 )</td>
<td>2.27**</td>
</tr>
</tbody>
</table>

* Pearsonian correlational coefficients
** A significant drop in initiating structure
Table 36

RESULTS OF ANALYSIS OF DATA BY STATISTICAL REGRESSION METHOD

<table>
<thead>
<tr>
<th>Instruments and Leadership Dimension</th>
<th>Mean Difference</th>
<th>C.R.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foreman Leadership Opinion Q.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consideration</td>
<td>- .68</td>
<td></td>
</tr>
<tr>
<td>Initiation of Structure</td>
<td>-1.94</td>
<td>1.20</td>
</tr>
<tr>
<td>Supervisory Behavior Description</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consideration</td>
<td>2.68</td>
<td></td>
</tr>
<tr>
<td>Initiation of Structure</td>
<td>-.87</td>
<td></td>
</tr>
<tr>
<td>What Does Your Boss Expect of You</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consideration</td>
<td>-2.52</td>
<td></td>
</tr>
<tr>
<td>Initiation of Structure</td>
<td>.45</td>
<td></td>
</tr>
<tr>
<td>Foreman Behavior Description</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consideration</td>
<td>1.74</td>
<td></td>
</tr>
<tr>
<td>Initiation of Structure</td>
<td>-2.10</td>
<td>1.21</td>
</tr>
</tbody>
</table>

The results of the analysis, as presented in table 36, show that some of the differences even approach significance. In fact, the majority are less than 1.00. Thus one may interpret the results as showing no difference between the groups.

**Summary**

The results of the evaluation of the effects of the training are largely negative. Only the conventional method of analysis results in a significant difference,
and it is interesting to note that the difference lies in a decrease in the amount of structuring behavior on the part of the control group. One interpretation might be that the training tended to retard a general decrease in structuring. This is associated with a difference (significant at seven per cent level of confidence) between the control group and experimental, which points to more structuring on the part of the experimental group. Of course, all such conclusions must be qualified in the light of the statistical regression analysis which did not show the above relationship between groups; however, it had no effect on reported changed within the same group.
SECTION V

DISCUSSION AND SUMMARY
CHAPTER 1
OVERVIEW

The following discussion will revolve around further implications of the data which have been presented to date. Much has been written concerning the position of the foreman in the modern plant. Perhaps the article by Roethlesberger may be taken as typical of the tenor of such papers. He describes the foreman as torn between two poles represented by the conflicting demands made upon the foreman by members of his work group and by members of management.

Again and again he is put in a position either of getting the workers' cooperation and being "disloyal" to management or of being "loyal" to management and incurring the resentment and the overt opposition of his subordinates. (p.61)

A somewhat similar situation was found among the foremen of the production divisions. The foreman's boss related the foreman's work proficiency to degree to which the foreman showed structuring behavior; while the work group indicated displeasure in working for a foreman who structured highly. Thus the foreman must structure to please his boss, but in so doing he incurs the displeasure of his work group. The foreman's dilemma is furthered if he attempts to please his boss and as a result finds an increasing grievance and absenteeism rate, which if they become excessive can earn the displeasure of the individual whom the foreman was trying to please.

-160-
It may well be that the supervisors fail to see the ultimate outcome of their behavior. It is conceivable that when a supervisor is continually faced with the necessity of meeting a production goal with consistently lower (at least not higher) costs he becomes "enamored" with that type of leadership which he sees as more closely related to his immediate problems. It is conceivable that greater structuring may result in increased production over a short period of time, but in terms of a long range goal, this type of behavior will inevitably defeat itself.

Thus there is need for the acceptance of long range as against short range goals. It is doubtful if there is much acceptance of long range goals except on the higher managerial levels since the evaluation of the performance of the unit is largely in terms of short intervals. Thus budgets are determined for three month intervals, and the stoppage of the assembly line brings immediate evaluation. It is possible that before long range goals can be more completely accepted, it will be necessary to change the nature of the situation in which the units work. Emphasis must be placed upon long term achievement rather than day to day judgments.

One might further hypothesize concerning the relationship between the above discussion and some of the relation-
ships reported by Fleishman. The prior study by Fleishman showed a tendency by the foreman to show greater structuring in their behavior when they returned from the training school in Chicago. The most recently trained groups showed significantly less consideration than their counterparts in the non-trained group. This becomes especially interesting when it is recalled that the purpose of the course is to make the trainees more human relations oriented. It is possible that such a reversal in training effects is a function not of the course material but of an increased identification with the company together with increased acceptance of and conformity to company standards. Thus, those who identify themselves more strongly with the company tend to conform more closely to company standards of proficiency, i.e., show greater structuring; while those foremen who identify themselves to a greater extent with their work groups show a greater degree of that behavior seen as desirable by their work groups (low structuring and high consideration). Thus as one union steward mentioned to this author, "What do they teach them at that school". They're hard to get close to when they come back."

In this sense, it is interesting to note that the effects of attending the Wittenberg College program were smaller than the effects of attending the Central Training School at Chicago. The difference between the trained and
untrained group (Wittenberg study) was not significant in any occasion. While in the central school Fleishman found a significantly smaller amount of consideration among the most recently trained and an overall tendency for the trained men to show more structuring behavior. The comparison is not completely unqualified, however, for all groups who attended Wittenberg also had attended the Chicago school. A "true" estimate of the effects of Wittenberg would involve using a group which had not been to the central school. Nonetheless, some speculation is warranted.

The differences between the two schools may be found in the differences between the social setting in which each took place. The foreman who attended the Chicago school traveled several hundred miles, lived in hotels (with all expenses paid), were met by and mingled with members of top management for a period of two weeks. Thus, they were the honored guests of management in a social setting completely divorced from that which involved varying degrees of identification with work groups. Under such conditions it is reasonable to suppose the trainees returned to their plants with an increased awareness of and relation to the company. Fleishman's reported gradual decrease in structuring and increase in consideration behavior the longer the foreman is back on the job is to be expected inasmuch as prior relationships and trusts are becoming renewed. In contrast,
the foremen attending the Wittenberg school were absent from work for a one week period, did not leave Springfield, lived at home, and did not mingle with members of top management. While the course material is similar, the social settings were remarkably different. The "mingling with", "guest of" management is absent; as such, there is relatively less in the social setting which might increase identification with management.

Irrespective of the reasons why the foreman finds himself torn between two poles and the forces which determine his resultant behavior, the fact remains that it happens, and some solution should be found which might ease the foreman's predicament. A partial answer to this dilemma might be found if it were possible to train the foreman to "structure considerately." For example, in assigning work duties the foreman might explain the reasons for his decisions and make some allowances for personal worker desires. The two dimensions need not be thought of as independent. Indeed, some work has been done which has shown a significant positive relationship between the two (15). Investigation along this line may lead to more productive efforts.

The question remains if foremen are to "structure considerately", what types of structuring behavior should receive the most attention in a training program. Unfortunately, some of the structuring behavior is not adapted to
consideration as used in this study. Thus, it is rather incongruous to "rule with an iron hand" considerately; however, there might be some structuring actions which are acceptable to the work group or which would lend themselves more profitably to training. A partial answer to this may be found in the differences between the two scaling methods. As the reader will recall, the Choice method of scaling required the workers to evaluate the items as abstracted from any particular setting in contrast to the Semi-internal method of scaling in which the items were evaluated in terms of the behavior of specific individuals. Also in review, the two methods were highly similar with the exception of the significant difference between the total number of positive and negative weights which they assigned. The Choice method of scaling assigned a greater number of positive weights than did the Semi-internal method. When this was interpreted in terms of individual questions, twelve structure items stood out as having been assigned negative weights by the behavioral method (Semi-internal) as against positive weights by the abstract scaling (Choice method). In other words, there are some types of behavior (all structure items) which are not viewed with disfavor until placed in a behavioral context, and then antagonisms are aroused. It is impossible to specify individual questions, since all but one of the differences in sign was not
significant. As a group they assumed significance though, so any interpretation of behavior areas must be made on the group level. In general, these questions lumped themselves into the general area of leadership in standards, methods, and procedures of work duties in contrast to such structure items as, "Rules with an iron hand" and "Refuses to explain his actions" which were given negative weights by both methods. Thus it is these areas in which the foremen might be taught to "structure considerately" for these are, possibly, the areas of overlap between work group and company standards. This of course, is only tentative and additional research is needed to substantiate this interpretation and further refine the analysis into more meaningful behavior categories, if the above relationships are found in other dissimilar situations.

Before closing this chapter some attention should be devoted to the data in the training study and that reported on the constancy of leadership patterns over a period of time.

In the study of the constancy of leadership patterns over a period of time (see Section II Chapter 2) it was noted that those foremen who had attended central school showed considerably less pre and post score agreement than did those foremen who had not attended the central school.
The difference between the correlations for the structure and consideration dimension (the latter significant at the six per cent level) showed greater stability for those foremen who did not have this intervening training. Similar results are noted between the pre and post test correlations of scores for the experimental and control groups in the evaluation of Wittenberg. Thus, although none of the differences are statistically significant, the same trend is apparent; i.e., the highest agreement between scores on the Foreman Behavior Description form in the group which did not have an intervening training program. Since the means are not suggestive of a change and yet there appears to be some evidence of a real difference, it raises the possibility of differential effects according to the individual and the situation in which he finds himself.
CHAPTER 2

SUMMARY AND CONCLUSIONS

This study was conducted at the Springfield, Ohio, branch of the International Harvester Company in 1962 while the author was the Harvester Research Fellow at Ohio State University. The setting was provided by a logical extension of work done the preceding year by Fleishman.

In review, Fleishman standardized, in an industrial situation, a Leader Behavior Description questionnaire originally developed by Hemphill and Coons. He subsequently administered the revised questionnaire in an evaluation of a training program to determine the effects of training upon leader behavior, attitudes, and expectations of management personnel. The results of his study indicated a significant decrease in the consideration scores (as ascribed by the work groups) of the most recently trained foremen. The overall, but non-significant, trend also pointed to increased structuring behavior.

An extension of this line of research poses the question of the import of this change upon the foreman efficiency. While the decrease in consideration and increase in initiation of structure were not the planned objectives of the training course, it is possible that this result is best from the standpoint of work efficiency. Hence, it is important to determine if differences in consideration and initiation of structure on the part of the
foreman are related to various measurable aspects of the work efficiency of the men supervised by the given foreman and of the foreman as viewed by his superior. This means essentially the validation of a new instrument for measuring leader behavior in an industrial situation.

In undertaking this study of the effects of leadership, two initial problems are involved: 1. Insuring that the designated leader is also the functional leader, 2. Obtaining some idea of the extent to which the descriptions of a foreman by a few workers could regeneralize to all members of the work group, and 3. Selection and purification of criteria measures.

The first problem was answered by including in the administration of the questionnaire a nominating technique by which the individuals who described the behavior of their superiors were able to designate that person from whom they took most of their orders. Those foremen who were not nominated by their work groups were considered structural, but not functional leaders.

The second problem was answered by determining the degree of inter-rater agreement, which, if high one might generalize more freely than if low.

With reference to the third question, six criteria were analyzed and employed. They are as follows: A rating of how well the workers liked working for foremen
who displayed the varying amounts of behavior indicated by the questions, global proficiency ratings of the foremen by their superiors, absenteeism, accident, turnover, and grievance rates of the foreman's work group. The last four criteria were investigated in relation to various job and personal factors which might contaminate the criteria. The effects of a series of such factors were noted and partialled out when necessary. The factors considered were: age, education, seniority, method of pay, skill, marital status, hazards of the job, and pleasantness of working conditions. All items but the last two were taken directly from company records; while the last two items were obtained through independent ratings by five raters.

In addition to the main investigation just outlined, some attention was given to evaluating the effects on leadership of an auxiliary training program at Wittenberg College which served only the Springfield plant of the Harvester Company. The method of evaluation consisted of constructing two groups, an experimental and a control group. Groups were similar in all respects except that one group (the experimental) had been to the training school at Wittenberg College; while the second group (control) had not attended. Differences within each group and between both groups were noted.
Conclusions

The study pointed up interesting relationships between the criteria and leadership behavior as well as several peripherally related but nonetheless interesting points. The more pertinent material will be discussed below. This will be followed by the less related points of interest and implications for further research.

1. The scaling of the items along the continuum of like-dislike was designed as a human relations approach to the leadership dimensions. While there are undoubtedly other factors which were not considered such as home conditions, attitude toward the city, pay, etc., this might be considered as one of the components of a more general morale complex. While there have been few studies which illustrate the degree of importance of this specific factor, it is generally conceded that liking or disliking to work under one's foreman is important in determining the worker's attitude toward his job and the company (13) (60) (36).

The results of this phase indicated that workers like working under foremen who are high on the consideration dimension and low on the initiation of structure dimension. ($r = .96$ and $- .48$ respectively). Both relationships may be accepted as significant since the null hypothesis that there is no relationship present was rejected beyond the
one per cent level of confidence.

2. Ratings of foreman proficiency were obtained with the idea of investigating the relationships between management's idea of success and leadership behavior of the foremen. An analysis of the data revealed several interesting points, one of which is the distinction between production and non-production divisions.

With one exception, in each of the two groups mentioned above, the ratings of proficiency correlated positively with different dimensions. In the production divisions proficiency correlated positively with initiation of structure, while in the non-production groups it correlated positively with consideration and negatively with initiation of structure. The one exception in the production divisions may be explained in terms of attempts at reducing an excessively high grievance rate at the time the data were gathered.

Perhaps a more accurate distinction was made when the divisions were rated on the basis of the demandness of their time schedules. The one deviate division of the non-production units was found to resemble the production divisions more closely than did the remaining non-production divisions. Thus it is possible that the underlying variable effecting the ratings of proficiency was the degree to which the foremen in any one rater's unit must work against
a demanding time schedule.

In view of this finding, the populations were redefined on the basis of the demandingness of their time schedule, two groups were formed, and the correlations between consideration, initiation of structure, and proficiency were computed within each of these groups. The only significant relationships were found in the groups high on demandingness of time schedule (production groups). In these groups, proficiency and initiation of structure correlated .29.

When the one production division mentioned above (as attempting vigorously to reduce a grievance rate) was removed from the sample, the correlation rose to .46 between proficiency and initiation of structure and -.27 between proficiency and consideration. Both coefficients are statistically significant.

Since the distinction between divisions on the basis of the demandingness of time schedules seems a real difference, it is possible that there are other differences either as a result of the above distinction or other characteristics which have not been acknowledged. Inasmuch as these groups might constitute two different populations, the nature of which is not fully understood, all divisions low on the demandingness of the time schedule (non-production divisions) were omitted from the remaining analyses.
3. While proficiency ratings were an approach to an evaluation of foreman leadership behavior from a managerial viewpoint, the measures of group behavior were a similar approach from a worker's standpoint. An attempt was made to purify the criteria through identifying related variables and partialling out their effects. As with the ratings, several interesting relationships were noted.

Accident rate did not correlate significantly with either leadership dimension; while absenteeism correlated significantly with both initiation of structure (.27) and consideration (-.49). Thus the higher the consideration behavior and/or the lower the amount of structuring behavior on the part of the foreman, the lower the absenteeism rate for his work group.

The last of the criteria considered were grievances and turnover. Each of these criteria underwent the same type of investigation as absenteeism and accident rate in order to identify and eliminate any contaminating factors. The resulting relationships were significant in one case -- a positive relationship (.45) between initiation of structure and grievance rates.

A tentative analysis investigating the same four criteria mentioned above was done with the non-production groups. Since the number was small, no attempt was made to investigate and partial out contaminating factors, if
present. The results of the analysis were somewhat different from those of the production group. In the production groups, absenteeism and grievance rates showed the only significant relationships, while in the non-production groups turnover and accidents showed the only significant relationships with the leadership dimensions. The latter correlated -.42 with consideration and the former correlated .51 with structure. Both correlations are significant beyond the 5 per cent level of confidence. This may be interpreted as further evidence of differences between these two groups.

An hypothesis was advanced concerning the disagreement in the pattern of relationships; namely that the demandingness of the work schedule was such as to introduce an additional variable which in turn affected the variance in the criteria which was correlating with the leadership dimensions.

4. The results of the local training study are largely negative. When the differences between groups are analyzed by conventional techniques, a few of the critical ratios approach the 5 per cent level of confidence. When the same differences are analyzed by the statistical regression method all differences disappear and none of the critical ratios exceed 1.21.

When changes within the same group are noted there is
a significant decrease in the amount of structuring which the foremen in the control group show toward their work groups. This is opposed to a non-significant drop in the experimental group. The resulting conclusion might then be that the training served to keep the amount of structuring from decreasing in the experimental group.

5. Analysis of behavior of foremen who lost nominations from their work groups as against those who did not lose nominations suggests that the foremen who did not lose nominations differed in that they:

a. stand behind their workers when they are in trouble.

b. take an active leadership role by instituting their own ideas and encouraging both quality and quantity of production, yet retain flexibility in their dealing with their work group, in that they explain the reasons behind actions and accept and institute ideas presented by members of the work group.

6. A final chapter presenting an over view of the implications of the study was presented. It was an attempt at analyzing the results in terms of the practical implications not overtly expressed in the data.

It pointed out the position of the foreman as that of an individual torn between two poles—management and the workers, each of which demanded something different in
terms of leadership behavior. It also pointed out the inconsistency of management's standpoint in emphasizing a type of leadership which is in turn related to high absentee and grievance rates, neither of which is considered desirable from a supervisory standpoint.

The results reported by Fleishman (decreased consideration and increased structuring of newly trained supervisors) were discussed in relation to the degree to which the foremen identified either with their work group or with management, the logic being that the foreman's behavior would conform to the standards of that group with which he most completely identified himself. Thus, since the work groups wanted considerate behavior those foremen would be more considerate if they more completely identified themselves with their work group rather than with management. Similarly, since management valued (outwardly) structuring behavior, those foremen would show greater structuring who identified, to a greater extent, with management than those who identified more with the workers.

The lack of significant changes in the Wittenberg section was in turn related to the conditions in the training situation which were not conducive to a shift in identification toward management at the expense of work groups.

A partial answer to the resolution of the dual standards was offered in the concept of training the foremen to
"structure considerately." It was suggested that such training might focus upon the general area of leadership as evidenced in standards, methods, and procedures of work duties.

A slightly different type of analysis was concerned with the effects of training as evidenced in pre and post correlation of scores among those who had training in the intervening period and those who had no training in the same period. Thus, while the effects of training are largely negative, its effects are apparent in the trend for those foremen who have attended school to show a smaller correlation with their previous score than those who had not attended. Thus, there appear to be changes, but they are not consistent among foremen since the correlation is reduced.

Implications for Further Research

The possible areas of research are many. This study raises questions which are in line with the area of this investigation and in other less related areas as well. The following suggest a few of the possible areas in which additional research might be done.

One of the more related areas would be research into the nature and characteristics of training programs in relation to changes in foreman behavior. Such an investigation would encompass not only the material and method of
presentation, but also the social, personal, and physical factors of both the training situation and the plant. Greater understanding is needed of the dynamics of a training program before maximum effectiveness can be obtained.

There is some evidence for assuming that worker reaction to leadership behavior might be a function of the type of work he does. Thus, we noted somewhat different results for production and non-production groups. The differences and similarities between these groups should be related to the different patterns of correlations obtained. Any information leading to a greater understanding of these two groups would be useful in many instances.

A great deal of research needs to be done on the applicability of different criteria in industry. Thus, there appear to be some criteria which are adequate in one division and not in another due to different situational factors. In a similar manner more precise knowledge is required concerning the connection between the "accepted" criteria such as absenteeism, accident rates, etc., and "contaminating" factors.

Certainly additional work is needed to establish relationships in such areas as common ground between worker and management values. Such research would be of great value in that it would make the foreman's position more
tenable and reduce friction between management and the workers, since the position of the intermediary between these groups would be defined in terms more acceptable to both. The results of such research might well point out the benefits to be derived from extensive training of the upper levels of management as well as increased efforts at educating the workers to the needs and demands of both groups.

The number of possible studies is lengthy. It is hoped that the above listing will give some idea of the areas in which research is needed. Above all, however, this writer would like to re-emphasize the importance of establishing the generality of the findings reported in this study. Indeed, some evidence was presented to the effect that workers on different jobs might react differently to leadership behavior. This study should be repeated in other dissimilar plants. Until this is done the results should be interpreted as being specific to the plant in question.
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APPENDIX I

QUESTIONNAIRES ADMINISTERED
IN MEASURING LEADERSHIP BEHAVIOR,
ATTITUDES, AND EXPECTATIONS
FOREMAN'S LEADERSHIP OPINION QUESTIONNAIRE

Developed by

The Ohio State Leadership Studies

Personnel Research Board

The Ohio State University
DIRECTIONS:

Please record your answer to each of the items on the answer sheet which is furnished you for that purpose. Make no marks on the question booklet itself. Please be sure that you are using the special I.B.M. pencil provided for use with the answer sheet.

In considering each item, go through the following steps:

1. READ each item carefully

2. THINK about how frequently you should, as a foreman, do the things described by the item -- with your particular work group in the plant. We do not necessarily want you to think about what you actually find yourself doing, but more what you consider the most desirable thing to do.

3. READ the five answers provided after the item and decide which one of the five most nearly expresses the frequency with which you as a foreman should do what the item describes.

4. NOTE which of the numbers 1, 2, 3, 4, or 5, goes with the answer you have selected.

5. FIND the number on the separate answer sheet which matches the number of the item you are answering.

6. YOU will find five pairs of dotted lines after each of the numbers on the answer sheet. Each pair of dotted lines is headed by one of the small figures, 1, 2, 3, 4, or 5. Blacken the space between the pair of dotted lines which is headed by the same number as the answer you have selected. When blackening the space between the pair of lines, fill in all the space with a heavy black line from the special I.B.M. pencil. If you should make an error in marking in your answer, you may erase the mark you made and then mark in another answer.

7. AFTER you have completed one item, go on to the next one in order. You may have as long as you need to finish. Be sure the number on the answer sheet corresponds with the number of the item you are answering in this booklet.

Please, remember -- there are no right or wrong answers to these questions. We all know that what one foreman thinks about how to lead his group of men may be very different from what another foreman might think with a different group of men. So just indicate in your answers what you sincerely think to be the best way to act with your particular work group, if you could lead them the way you want to.

Also, remember that no one at Harvester will see these answers. They will be taken to Ohio State University for statistical analysis.
1. PUT THE SECTION'S WELFARE ABOVE THE WELFARE OF ANY MEMBER IN IT.
   1. always  2. often  3. occasionally  4. seldom  5. never

2. GIVE IN TO OTHERS IN DISCUSSIONS WITH YOUR WORK GROUP.
   1. often  2. fairly  3. occasionally  4. once in a while  5. seldom

3. ENCOURAGE OVERTIME WORK.
   1. a great deal  2. fairly much  3. to some degree  4. once in a while  5. seldom

4. TRY OUT YOUR OWN NEW IDEAS IN THE WORK GROUP.
   1. often  2. fairly  3. occasionally  4. once in a while  5. seldom

5. BACK UP WHAT PEOPLE UNDER YOU DO.
   1. always  2. often  3. occasionally  4. seldom  5. never

6. CRITICIZE POOR WORK.
   1. always  2. often  3. occasionally  4. seldom  5. never

7. ASK FOR MORE THAN MEMBERS OF THE WORK GROUP CAN GET DONE.
   1. often  2. fairly  3. occasionally  4. once in a while  5. seldom

8. REFUSE TO COMPROMISE A POINT.
   1. always  2. often  3. occasionally  4. seldom  5. never

9. INSIST THAT PEOPLE UNDER YOU FOLLOW TO THE LETTER THOSE STANDARD ROUTINES HANDED DOWN TO YOU.
   1. always  2. often  3. occasionally  4. seldom  5. never

10. HELP PEOPLE IN THE WORK GROUP WITH THEIR PERSONAL PROBLEMS.
    1. often  2. fairly  3. occasionally  4. once in a while  5. seldom

11. BE SLOW TO ACCEPT NEW IDEAS.
    1. always  2. often  3. occasionally  4. seldom  5. never

12. GET THE APPROVAL OF THE WORK GROUP ON IMPORTANT MATTERS BEFORE GOING AHEAD.
    1. always  2. often  3. occasionally  4. seldom  5. never

13. RESIST CHANGES IN WAYS OF DOING THINGS.
    1. a great deal  2. fairly much  3. to some degree  4. comparatively little  5. not at all

14. ASSIGN PEOPLE IN THE WORK GROUP TO PARTICULAR TASKS.
    1. always  2. often  3. occasionally  4. seldom  5. never

15. SPEAK IN A MANNER NOT TO BE QUESTIONED.
    1. always  2. often  3. occasionally  4. seldom  5. never
16. STRESS BEING AHEAD OF COMPETING WORK GROUPS.
   1. a great 2. fairly 3. to some 4. comparatively 5. not
dead much degree little at all

17. CRITICIZE A SPECIFIC ACT RATHER THAN A PARTICULAR MEMBER OF
THE WORK GROUP.
   1. always 2. often 3. occasionally 4. seldom 5. never

18. LET OTHERS DO THEIR WORK THE WAY THEY THINK BEST.
   1. always 2. often 3. occasionally 4. seldom 5. never

19. DO PERSONAL FAVORS FOR PEOPLE IN THE WORK GROUP.
   1. often 2. fairly 3. occasionally 4. once in 5. very
   often a while seldom

20. EMPHASIZE MEETING OF DEADLINES;
   1. a great 2. fairly 3. to some 4. comparatively 5. not
dead much degree little at all

21. INSIST THAT YOU BE INFORMED ON DECISIONS MADE BY PEOPLE IN THE
WORK GROUP UNDER YOU.
   1. always 2. often 3. occasionally 4. seldom 5. never

22. OFFER NEW APPROACHES TO PROBLEMS.
   1. often 2. fairly 3. occasionally 4. once in 5. very
   often a while seldom

23. TREAT ALL PEOPLE IN THE WORK GROUP AS YOUR EQUALS.
   1. always 2. often 3. occasionally 4. seldom 5. never

24. BE WILLING TO MAKE CHANGES.
   1. always 2. often 3. occasionally 4. seldom 5. never

25. TALK ABOUT HOW MUCH SHOULD BE DONE.
   1. a great 2. fairly 3. to some 4. comparatively 5. not
dead much degree little at all

26. WAIT FOR PEOPLE IN THE WORK GROUP TO PUSH NEW IDEAS.
   1. always 2. often 3. occasionally 4. seldom 5. never

27. RULE WITH AN IRON HAND.
   1. always 2. often 3. occasionally 4. seldom 5. never

28. REJECT SUGGESTIONS FOR CHANGES.
   1. always 2. often 3. occasionally 4. seldom 5. never

29. CHANGE THE DUTIES OF PEOPLE IN THE WORK GROUP WITHOUT FIRST
    TALKING IT OVER WITH THEM.
   1. often 2. fairly 3. occasionally 4. once in 5. very
   often a while seldom

30. DECIDE IN DETAIL WHAT SHALL BE DONE AND HOW IT SHALL BE DONE
    BY THE WORK GROUP.
   1. always 2. often 3. occasionally 4. seldom 5. never
31. SEE TO IT THAT PEOPLE IN THE WORK GROUP ARE WORKING UP TO THEIR LIMITS.
   1. always 2. often 3. occasionally 4. seldom 5. never

32. STAND UP FOR THOSE IN THE WORK GROUP UNDER YOU, EVEN THOUGH IT MAKES YOU UNPOPULAR WITH OTHERS.
   1. always 2. often 3. occasionally 4. seldom 5. never

33. PUT SUGGESTIONS MADE BY PEOPLE IN THE WORK GROUP INTO OPERATION.
   1. always 2. often 3. occasionally 4. seldom 5. never

34. REFUSE TO EXPLAIN YOUR ACTIONS.
   1. often 2. fairly often 3. occasionally 4. once in 5. very a while seldom

35. ASK FOR SACRIFICES FROM THE MEN UNDER YOU FOR THE GOOD OF YOUR ENTIRE WORK GROUP.
   1. often 2. fairly often 3. occasionally 4. once in 5. very often a while seldom

36. ACT WITHOUT CONSULTING THE WORK GROUP.
   1. often 2. fairly often 3. occasionally 4. once in 5. very often a while seldom

37. "NEEDLE" PEOPLE IN THE WORK GROUP FOR GREATER EFFORT.
   1. a great 2. fairly 3. to some 4. comparatively 5. not at all deal much degree little

38. INSIST THAT EVERYTHING BE DONE YOUR WAY.
   1. always 2. often 3. occasionally 4. seldom 5. never

39. ENCOURAGE SLOW-WORKING PEOPLE IN THE WORK GROUP TO WORK HARDER.
   1. often 2. fairly often 3. occasionally 4. once in 5. very often a while seldom

40. MEET WITH THE WORK GROUP AT CERTAIN REGULARLY SCHEDULED TIMES.
   1. always 2. often 3. occasionally 4. seldom 5. never
SUPERVISORY BEHAVIOR DESCRIPTION

Developed by
The Ohio State Leadership Studies
Personnel Research Board
The Ohio State University
You have observed your own boss in the plant and probably you now pretty well how he operates. In this questionnaire, you are implied to describe some of the things your boss does in the industrial situation.

Please record your answers to each of the items on the answer sheet which is furnished you for that purpose. Make no marks on the questionnaire booklet itself. Please be sure you are using the special I.B.M. pencil provided for use with the answer sheet.

In considering each item go through the following steps:

1. READ each item carefully.

2. THINK about how frequently your own boss does the things described by the item.

3. READ the five answers provided after the item and decide which one of the five most nearly expresses the frequency with which your own boss does what that item describes.

4. NOTE which of the numbers 1, 2, 3, 4, or 5 goes with the answer you have selected.

5. FIND the number, on the separate answer sheet, which matches the number of the item you are answering.

6. YOU will find five pairs of dotted lines after each of the numbers on the answer sheet. Each pair of dotted lines is headed by one of the small numbers 1, 2, 3, 4, or 5. Blacken the space between the pair of dotted lines which is headed by the same number as the answer you have selected. When blackening the space between the pair of lines, fill in all the space with a heavy black line from the special I.B.M. pencil. If you should make an error in marking your answer, you may erase the mark you made and then mark in another answer.

7. TRY your best to answer all the items. In rare cases, where you feel an item does not apply or you feel that you do not have enough information to make a description of your own boss's behavior, leave that item blank.

8. AFTER you have finished one item go on to the next one in order. You may have as long as you need to complete your description of your boss. Be sure the number on the answer sheet corresponds with the number of the item you are answering in the booklet.

Ease remember -- there are no right or wrong answers to these questions. The items simply describe the behavior of the man over you in the organization; they do not judge whether his behavior is desirable or undesirable. Everyone's boss is different and every situation varies so we expect differences in what different supervisors do.

So, remember that no one at Harvester will see your answers. They will be taken to Ohio State University for statistical analysis.
1. HE IS EASY TO UNDERSTAND.
   1. always  2. often  3. occasionally  4. seldom  5. never

2. HE ENCOURAGES OVERTIME WORK.
   1. a great deal  2. fairly  3. to some degree  4. comparatively little  5. not at all

3. HE TRIES OUT HIS NEW IDEAS.
   1. often  2. fairly  3. occasionally  4. once in a while  5. very seldom

4. HE BACKS UP HIS FOREMEN IN THEIR ACTIONS.
   1. always  2. often  3. occasionally  4. seldom  5. never

5. HE CRITICIZES POOR WORK.
   1. always  2. often  3. occasionally  4. seldom  5. never

6. HE DEMANDS MORE THAN WE CAN DO.
   1. often  2. fairly  3. occasionally  4. once in a while  5. very seldom

7. HE REFUSES TO GIVE IN WHEN PEOPLE DISAGREE WITH HIM.
   1. always  2. often  3. occasionally  4. seldom  5. never

8. HE EXPRESSIONS APPRECIATION WHEN ONE OF US DOES A GOOD JOB.
   1. always  2. often  3. occasionally  4. seldom  5. never

9. HE INSISTS THAT HIS FOREMEN FOLLOW STANDARD WAYS OF DOING THINGS IN EVERY DETAIL.
   1. always  2. often  3. occasionally  4. seldom  5. never

10. HE HELPS HIS FOREMEN WITH THEIR PERSONAL PROBLEMS.
    1. often  2. fairly  3. occasionally  4. once in a while  5. very seldom

11. HE IS SLOW TO ACCEPT NEW IDEAS.
    1. always  2. often  3. occasionally  4. seldom  5. never

12. HE IS FRIENDLY AND CAN BE EASILY APPROACHED.
    1. always  2. often  3. occasionally  4. seldom  5. never

13. HE GETS THE APPROVAL OF HIS FOREMEN ON IMPORTANT MATTERS BEFORE GOING AHEAD.
    1. always  2. often  3. occasionally  4. seldom  5. never

14. HE RESISTS CHANGES IN WAYS OF DOING THINGS.
    1. a great deal  2. fairly  3. to some degree  4. comparatively little

15. HE ASSIGNs PEOPLE UNDER HIM TO PARTICULAR TASKS.
    1. always  2. often  3. occasionally  4. seldom  5. never
16. HE STRESSES BEING AHEAD OF COMPETING WORK GROUPS.
   1. a great 2. fairly 3. to some 4. comparatively 5. not at all deal much degree little

17. HE CRITICIZES A SPECIFIC ACT RATHER THAN A PARTICULAR INDIVIDUAL.
   1. always 2. often 3. occasionally 4. seldom 5. never

18. HE LETS OTHERS DO THEIR WORK THE WAY THEY THINK BEST.
   1. always 2. often 3. occasionally 4. seldom 5. never

19. HE DOES PERSONAL FAVORS FOR THE FOREMEN UNDER HIM.
   1. often 2. fairly 3. occasionally 4. once in 5. very often a while seldom

20. HE EMPHASIZES MEETING OF DEADLINES.
   1. a great 2. fairly 3. to some 4. comparatively 5. not at all deal much degree little

21. HE SEES THAT A FOREMAN IS REWARDED FOR A JOB WELL DONE.
   1. always 2. often 3. occasionally 4. seldom 5. never

22. HE TREATS PEOPLE UNDER HIM WITHOUT CONSIDERING THEIR FEELINGS.
   1. always 2. often 3. occasionally 4. once in 5. very a while seldom

23. HE INSISTS THAT HE BE INFORMED ON DECISIONS MADE BY FOREMEN UNDER HIM.
   1. always 2. often 3. occasionally 4. seldom 5. never

24. HE OFFERS NEW APPROACHES TO PROBLEMS.
   1. often 2. fairly 3. occasionally 4. once in 5. very often a while seldom

25. HE TREATS ALL HIS FOREMEN AS HIS EQUAL.
   1. always 2. often 3. occasionally 4. seldom 5. never

26. HE IS WILLING TO MAKE CHANGES.
   1. always 2. often 3. occasionally 4. seldom 5. never

27. HE ASKS FOREMEN WHO HAVE SLOW GROUPS TO GET MORE OUT OF THEIR GROUPS.
   1. often 2. fairly 3. occasionally 4. once in 5. very often a while seldom

28. HE CRITICIZES HIS FOREMEN IN FRONT OF OTHERS.
   1. often 2. fairly 3. occasionally 4. once in 5. very often a while seldom

29. HE STRESSES THE IMPORTANCE OF HIGH MORALE AMONG THOSE UNDER HIM.
   1. a great 2. fairly 3. to some 4. comparatively 5. not at all deal much degree little
30. **HE TALKS ABOUT HOW MUCH SHOULD BE DONE.**
   1. a great 2. fairly 3. to some 4. comparatively 5. not at deal  
   much degree little all

31. **HE "RIDES" THE FOREMAN WHO MAKES A MISTAKE.**
   1. often 2. fairly 3. occasionally 4. once in 5. very often

32. **HE WAITS FOR HIS FOREMEN TO PUSH NEW IDEAS BEFORE HE DOES.**
   1. always 2. often 3. occasionally 4. seldom 5. never

33. **HE RULES WITH AN IRON HAND.**
   1. always 2. often 3. occasionally 4. seldom 5. never

34. **HE TRIES TO KEEP THE FOREMEN UNDER HIM IN GOOD STANDING WITH THOSE IN HIGHER AUTHORITY.**
   1. always 2. often 3. occasionally 4. seldom 5. never

35. **HE REJECTS SUGGESTIONS FOR CHANGES.**
   1. always 2. often 3. occasionally 4. seldom 5. never

36. **HE CHANGES THE DUTIES OF PEOPLE UNDER HIM WITHOUT FIRST TALKING IT OVER WITH THEM.**
   1. often 2. fairly often 3. occasionally 4. once in 5. very often a while seldom

37. **HE DECIDES IN DETAIL WHAT SHALL BE DONE AND HOW IT SHALL BE DONE.**
   1. always 2. often 3. occasionally 4. seldom 5. never

38. **HE SEES TO IT THAT PEOPLE UNDER HIM ARE WORKING UP TO THEIR LIMITS.**
   1. always 2. often 3. occasionally 4. seldom 5. never

39. **HE STANDS UP FOR HIS FOREMEN EVEN THOUGH IT MAKES HIM UNPOPULAR.**
   1. always 2. often 3. occasionally 4. seldom 5. never

40. **HE MAKES THOSE UNDER HIM FEEL AT EASE WHEN TALKING WITH HIM.**
   1. always 2. often 3. occasionally 4. seldom 5. never

41. **HE PUTS SUGGESTIONS THAT ARE MADE BY FOREMEN UNDER HIM INTO OPERATION.**
   1. always 2. often 3. occasionally 4. seldom 5. never

42. **HE REFUSES TO EXPLAIN HIS ACTIONS.**
   1. often 2. fairly 3. occasionally 4. once in 5. very often a while seldom

43. **HE EMPHASIZES THE QUANTITY OF WORK.**
   1. a great 2. fairly 3. to some 4. comparatively 5. not at deal  
   much degree little all

44. **HE ASKS FOR SACRIFICES FROM HIS FOREMEN FOR THE GOOD OF THE ENTIRE DEPARTMENT.**
   1. often 2. fairly 3. occasionally 4. once in 5. very often a while seldom
45. HE ACTS WITHOUT CONSULTING HIS FOREMEN FIRST.
1. often  2. fairly  3. occasionally  4. once in a while  5. very often

46. HE "NEEDLES" FOREMEN UNDER HIM FOR GREATER EFFORT.
1. a great deal  2. fairly much  3. to some degree  4. comparatively little  5. not at all

47. HE INSISTS THAT EVERYTHING BE DONE HIS WAY.
1. always  2. often  3. occasionally  4. seldom  5. never

48. HE ENCOURAGES SLOW-WORKING FOREMEN TO GREATER EFFORT.
1. often  2. fairly  3. occasionally  4. once in a while  5. very seldom
"WHAT DOES YOUR BOSS EXPECT OF YOU"

Developed by

The Ohio State Leadership Studies
Personnel Research Board
The Ohio State University
DIRECTIONS:

You have observed your own boss in the plant and probably you know pretty well what he expects of you. The questionnaire you are to answer is very much like the one you answered before. However, this time we would like you to answer the questions as you feel your boss would answer them. In other words, from what you know about your boss, mark what you think his choice would be for each item.

In considering each item, go through the following steps:

1. READ each item carefully.

2. THINK about how frequently your boss thinks that what is described by that item should be done. How do you think your boss would answer it?

3. READ the five answers provided after the item and decide which one of the five most nearly expresses how you think your boss would answer it.

4. NOTE which of the numbers 1, 2, 3, 4, or 5, goes with the answer you have selected.

5. FIND the number, on the separate answer sheet, which matches the number of the item you are answering.

6. YOU WILL FIND five pairs of dotted lines after each of the numbers on the answer sheet. Each pair of dotted lines is headed by one of the small numbers 1, 2, 3, 4, or 5. Blacken the space between the pair of dotted lines which is headed by the same number as the answer you have selected. When blackening the space between the lines, fill in all the space with a heavy black line from the special I.B.W. pencil. If you should make an error in marking your answer, you may erase the mark you made and then mark in another answer.

7. AFTER you have finished one item, go on to the next one in order. You may have as long as you need. Be sure the number on the answer sheet corresponds with the number of the item you are answering in the booklet.

Please remember - you are filling this out as you think the man over you in the organization wants you to act. We want what you think his attitudes on these questions are, and not your own this time.

As we said before - there are no right and wrong answers to these questions. Everyone's boss is different and may expect different things from their foremen. Also remember that no one at Harvester will see your answers. They will be taken to Ohio State University for statistical analysis.
1. PUT THE SECTION'S WELFARE ABOVE THE WELFARE OF ANY MEMBER IN IT.
   1. always  2. often  3. occasionally  4. seldom  5. never

2. GIVE IN TO OTHERS IN DISCUSSIONS WITH YOUR WORK GROUP.
   1. often  2. fairly  3. occasionally  4. once in a while 5. seldom

3. ENCOURAGE OVERTIME WORK.
   1. a great deal  2. fairly much  3. to some degree  4. once in a while 5. seldom

4. TRY OUT YOUR OWN NEW IDEAS IN THE WORK GROUP.
   1. often  2. fairly  3. occasionally  4. once in a while 5. seldom

5. BACK UP WHAT PEOPLE UNDER YOU DO.
   1. always  2. often  3. occasionally  4. seldom  5. never

6. CRITICIZE POOR WORK.
   1. always  2. often  3. occasionally  4. seldom  5. never

7. ASK FOR MORE THAN MEMBERS OF THE WORK GROUP CAN GET DONE.
   1. often  2. fairly  3. occasionally  4. once in a while 5. seldom

8. REFUSE TO COMPROMISE A POINT.
   1. always  2. often  3. occasionally  4. seldom  5. never

9. INSIST THAT PEOPLE UNDER YOU FOLLOW TO THE LETTER THOSE STANDARD RUTINES HANDED DOWN TO YOU.
   1. always  2. often  3. occasionally  4. seldom  5. never

10. HELP PEOPLE IN THE WORK GROUP WITH THEIR PERSONAL PROBLEMS.
    1. often  2. fairly  3. occasionally  4. once in a while 5. seldom

11. BE SLOW TO ACCEPT NEW IDEAS.
    1. always  2. often  3. occasionally  4. seldom  5. never

12. GET THE APPROVAL OF THE WORK GROUP ON IMPORTANT MATTERS BEFORE GOING AHEAD.
    1. always  2. often  3. occasionally  4. seldom  5. never

13. RESIST CHANGES IN WAYS OF DOING THINGS.
    1. a great deal  2. fairly much  3. to some degree  4. comparatively little  5. not at all

14. ASSIGN PEOPLE IN THE WORK GROUP TO PARTICULAR TASKS.
    1. always  2. often  3. occasionally  4. seldom  5. never

15. SPEAK IN A MANNER NOT TO BE QUESTIONED.
    1. always  2. often  3. occasionally  4. seldom  5. never
16. STRESS BEING AHEAD OF COMPETING WORK GROUPS.
   1. a great deal  2. fairly  3. to some degree  4. comparatively little  5. not at all

17. CRITICIZE A SPECIFIC ACT RATHER THAN A PARTICULAR MEMBER OF THE WORK GROUP.
   1. always  2. often  3. occasionally  4. seldom  5. never

18. LET OTHERS DO THEIR WORK THE WAY THEY THINK BEST.
   1. always  2. often  3. occasionally  4. seldom  5. never

19. DO PERSONAL FAVORS FOR PEOPLE IN THE WORK GROUP.
   1. often  2. fairly  3. occasionally  4. once in a while  5. very seldom

20. EMPHASIZE MEETING OF DEADLINES.
   1. a great deal  2. fairly  3. to some degree  4. comparatively little  5. not at all

21. INSIST THAT YOU BE INFORMED ON DECISIONS MADE BY PEOPLE IN THE WORK GROUP UNDER YOU.
   1. always  2. often  3. occasionally  4. seldom  5. never

22. OFFER NEW APPROACHES TO PROBLEMS.
   1. often  2. fairly  3. occasionally  4. once in a while  5. very seldom

23. TREAT ALL PEOPLE IN THE WORK GROUP AS YOUR EQUALS.
   1. always  2. often  3. occasionally  4. seldom  5. never

24. BE WILLING TO MAKE CHANGES.
   1. always  2. often  3. occasionally  4. seldom  5. never

25. TALK ABOUT HOW MUCH SHOULD BE DONE.
   1. a great deal  2. fairly  3. to some degree  4. comparatively little  5. not at all

26. WAIT FOR PEOPLE IN THE WORK GROUP TO PUSH NEW IDEAS.
   1. always  2. often  3. occasionally  4. seldom  5. never

27. RULE WITH AN IRON HAND.
   1. always  2. often  3. occasionally  4. seldom  5. never

28. REJECT SUGGESTIONS FOR CHANGES.
   1. always  2. often  3. occasionally  4. seldom  5. never

29. CHANGE THE DUTIES OF PEOPLE IN THE WORK GROUP WITHOUT FIRST TALKING IT OVER WITH THEM.
   1. often  2. fairly  3. occasionally  4. once in a while  5. very seldom

30. DECIDE IN DETAIL WHAT SHALL BE DONE AND HOW IT SHALL BE DONE BY THE WORK GROUP.
   1. always  2. often  3. occasionally  4. seldom  5. never
31. See to it that people in the work group are working up to their limits.
   1. always  2. often  3. occasionally  4. seldom  5. never

32. Stand up for those in the work group under you, even though it makes you unpopular with others.
   1. always  2. often  3. occasionally  4. seldom  5. never

33. Put suggestions made by people in the work group into operation.
   1. always  2. often  3. occasionally  4. seldom  5. never

34. Refuse to explain your actions.
   1. often  2. fairly often  3. occasionally  4. once in a while  5. seldom

35. Ask for sacrifices from the men under you for the good of your entire work group.
   1. often  2. fairly  3. occasionally  4. once in a while  5. seldom

36. Act without consulting the work group.
   1. often  2. fairly  3. occasionally  4. once in a while  5. seldom

37. "Needle" people in the work group for greater effort.
   1. a great deal  2. fairly  3. to some degree  4. comparatively little  5. not at all

38. Insist that everything be done your way.
   1. always  2. often  3. occasionally  4. seldom  5. never

39. Encourage slow-working people in the work group to work harder.
   1. often  2. fairly  3. occasionally  4. once in a while  5. seldom

40. Meet with the work group at certain regularly scheduled times.
   1. always  2. often  3. occasionally  4. seldom  5. never
FOREMAN BEHAVIOR DESCRIPTION

Developed by
The Ohio State Leadership Studies
Personnel Research Board
The Ohio State University
You have observed your own foreman in the plant and probably you know pretty well how he operates. In this questionnaire, you are simply to describe some of the things your own foreman does with your work group.

Please record your answers to each of the items on the answer sheet which is furnished you for that purpose. Make no marks on the questionnaire booklet itself. Please be sure you are using the special I.B.M. pencil provided for use with the answer sheet.

In considering each item go through the following steps:

1. READ each item carefully.

2. THINK about how frequently your own foreman actually does the things described by the item.

3. READ the five answers provided after the item and decide which one of the five most nearly tells how often your own foreman does what that item says.

4. NOTE which of the numbers 1, 2, 3, 4, or 5, goes with the answer you have selected.

5. FIND the number, on the separate answer sheet, which matches the number of the item you are answering.

6. YOU will find five pairs of dotted lines after each of the numbers on the answer sheet. Each pair of dotted lines is headed by one of the small numbers 1, 2, 3, 4, or 5. Blacken the space between the pair of dotted lines which is headed by the same number as the answer you have selected. When blackening the space between the pair of lines, fill in all the space with a heavy black line from the special I.B.M. pencil. If you want to change your answer, erase the mark you made and then mark in another answer.

7. AFTER you have finished one item go on to the next one in order. You may have as long as you need to complete your description of your foreman. Be sure the number on the answer sheet corresponds with the number of the item you are answering in the booklet.

Please remember - there are no right or wrong answers to these questions. The items simply describe the behavior of the foreman over you in the organization; they do not judge whether his behavior is desirable or undesirable. Everyone's foreman is different and so is every work group so we expect differences in what different foremen do.

Also, remember that no one at Harvester will see your answers. They will be taken to Ohio State University for statistical analysis.
1. **HE IS EASY TO UNDERSTAND.**
   1. always  2. often  3. occasionally  4. seldom  5. never

2. **HE ENCOURAGES OVERTIME WORK.**
   1. a great deal  2. fairly much  3. to some degree  4. comparatively little  5. not at all

3. **HE TRIES OUT HIS NEW IDEAS.**
   1. often  2. fairly often  3. occasionally  4. once in a while  5. very seldom

4. **HE BACKS UP WHAT PEOPLE IN HIS WORK GROUP DO.**
   1. always  2. often  3. occasionally  4. seldom  5. never

5. **HE CRITICIZES POOR WORK.**
   1. always  2. often  3. occasionally  4. seldom  5. never

6. **HE DEMANDS MORE THAN WE CAN DO.**
   1. often  2. fairly often  3. occasionally  4. once in a while  5. very seldom

7. **HE REFUSES TO GIVE IN WHEN PEOPLE IN THE WORK GROUP DISAGREE WITH HIM.**
   1. always  2. often  3. occasionally  4. seldom  5. never

8. **HE EXPRESSES APPRECIATION WHEN ONE OF US DOES A GOOD JOB.**
   1. always  2. often  3. occasionally  4. seldom  5. never

9. **HE INSISTS THAT PEOPLE UNDER HIM FOLLOW STANDARD WAYS OF DOING THINGS IN EVERY DETAIL.**
   1. always  2. often  3. occasionally  4. seldom  5. never

10. **HE HELPS PEOPLE IN THE WORK GROUP WITH THEIR PERSONAL PROBLEMS.**
    1. often  2. fairly often  3. occasionally  4. once in a while  5. very seldom

11. **HE IS SLOW TO ACCEPT NEW IDEAS.**
    1. always  2. often  3. occasionally  4. seldom  5. never

12. **HE IS FRIENDLY AND CAN BE EASILY APPROACHED.**
    1. always  2. often  3. occasionally  4. seldom  5. never

13. **HE GETS THE APPROVAL OF THE WORK GROUP ON IMPORTANT MATTERS BEFORE GOING AHEAD.**
    1. always  2. often  3. occasionally  4. seldom  5. never

14. **HE RESISTS CHANGES IN WAYS OF DOING THINGS.**
    1. a great deal  2. fairly much  3. to some degree  4. comparatively little  5. not at all

15. **HE ASSIGN PEOPLE UNDER HIM TO PARTICULAR TASKS.**
    1. always  2. often  3. occasionally  4. seldom  5. never
16. HE STRESSES BEING AHEAD OF COMPETING WORK GROUPS.
   1. a great  2. fairly  3. to some  4. comparatively  5. not at
      deal much degree little all

17. HE CRITICIZES A SPECIFIC ACT RATHER THAN A PARTICULAR INDIVIDUAL.
   1. always  2. often  3. occasionally  4. seldom  5. never

18. HE LETS OTHERS DO THEIR WORK THE WAY THEY THINK BEST.
   1. always  2. often  3. occasionally  4. seldom  5. never

19. HE DOES PERSONAL FAVORS FOR THE MEN UNDER HIM.
   1. often  2. fairly  3. occasionally  4. once in  5. very
      often a while seldom

20. HE EMPHASIZES MEETING OF DEADLINES.
   1. a great  2. fairly  3. to some  4. comparatively  5. not at
      deal much degree little all

21. HE SEES THAT A WORKER IS Rewarded FOR A JOB WELL DONE.
   1. always  2. often  3. occasionally  4. seldom  5. never

22. HE TREATS PEOPLE UNDER HIM WITHOUT CONSIDERING THEIR FEELINGS.
   1. always  2. often  3. occasionally  4. once in  5. very
      a while seldom

23. HE INSISTS THAT HE BE INFORMED ON DECISIONS MADE BY THE PEOPLE UNDER HIM.
   1. always  2. often  3. occasionally  4. seldom  5. never

24. HE OFFERS NEW APPROACHES TO PROBLEMS.
   1. often  2. fairly  3. occasionally  4. once in  5. very
      often a while seldom

25. HE TREATS ALL WORKERS UNDER HIM AS HIS EQUALS.
   1. always  2. often  3. occasionally  4. seldom  5. never

26. HE IS WILLING TO MAKE CHANGES.
   1. always  2. often  3. occasionally  4. seldom  5. never

27. HE ASKS SLOWER PEOPLE TO GET MORE DONE.
   1. often  2. fairly  3. occasionally  4. once in  5. very
      often a while seldom

28. HE CRITICIZES PEOPLE UNDER HIM IN FRONT OF OTHERS.
   1. often  2. fairly  3. occasionally  4. once in  5. very
      often a while seldom

29. HE STRESSES THE IMPORTANCE OF HIGH MORALE AMONG THOSE UNDER HIM.
   1. a great  2. fairly  3. to some  4. comparatively  5. not at
      deal much degree little all
30. HE TALKS ABOUT HOW MUCH SHOULD BE DONE.
   1. a great  2. fairly  3. to some  4. comparatively  5. not at
deal much degree little all

31. HE "RIDES" THE PERSON WHO MAKES A MISTAKE.
   1. often  2. fairly  3. occasionally  4. once in  5. very
   often a while seldom

32. HE WAITS FOR PEOPLE UNDER HIM TO PUSH NEW IDEAS BEFORE HE DOES.
   1. always  2. often  3. occasionally  4. seldom  5. never

33. HE RULES WITH AN IRON HAND.
   1. always  2. often  3. occasionally  4. seldom  5. never

34. HE TRIES TO KEEP THE MEN UNDER HIM IN GOOD STANDING WITH THOSE IN
   HIGHER AUTHORITY.
   1. always  2. often  3. occasionally  4. seldom  5. never

35. HE REJECTS SUGGESTIONS FOR CHANGES.
   1. always  2. often  3. occasionally  4. seldom  5. never

36. HE CHANGES THE DUTIES OF PEOPLE UNDER HIM WITHOUT FIRST TALKING IT OVER
   WITH THEM.
   1. often  2. fairly often  3. occasionally  4. once in  5. very
   a while seldom

37. HE DECIDES IN DETAIL WHAT SHALL BE DONE AND HOW IT SHALL BE DONE.
   1. always  2. often  3. occasionally  4. seldom  5. never

38. HE SEEKS TO IT THAT PEOPLE UNDER HIM ARE WORKING UP TO THEIR LIMITS.
   1. always  2. often  3. occasionally  4. seldom  5. never

39. HE STANDS UP FOR PEOPLE UNDER HIM EVEN THOUGH IT MAKES HIM UNPOPULAR.
   1. always  2. often  3. occasionally  4. seldom  5. never

40. HE MAKES THOSE UNDER HIM FEEL AT EASE WHEN TALKING WITH HIM.
   1. always  2. often  3. occasionally  4. seldom  5. never

41. HE PUTS SUGGESTIONS THAT ARE MADE BY THE MEN UNDER HIM INTO OPERATION.
   1. always  2. often  3. occasionally  4. seldom  5. never

42. HE REFUSES TO EXPLAIN HIS ACTIONS.
   1. often  2. fairly  3. occasionally  4. once in  5. very
   often a while seldom

43. HE EMPHASIZES THE QUANTITY OF WORK.
   1. a great  2. fairly  3. to some  4. comparatively  5. not at
deal much degree little all

44. HE ASKS FOR SACRIFICES FROM HIS MEN FOR THE GOOD OF THE ENTIRE
   DEPARTMENT.
   1. often  2. fairly  3. occasionally  4. once in  5. very
   often a while seldom
45. HE ACTS WITHOUT CONSULTING THE MEN UNDER HIM FIRST.
   1. often  2. fairly  3. occasionally  4. once in a while
   often
   5. very seldom

46. HE "NEEDLES" PEOPLE UNDER HIM FOR GREATER EFFORT.
   1. a great  2. fairly  3. to some degree
   deal  much
   4. comparatively little
   5. not at all

47. HE INSISTS THAT EVERYTHING BE DONE HIS WAY.
   1. always  2. often  3. occasionally
   4. seldom  5. never

48. HE ENCOURAGES SLOW-WORKING PEOPLE TO GREATER EFFORT.
   1. often  2. fairly  3. occasionally
   4. once in a while
   often
   5. very seldom
"HOW YOU EXPECT AN IDEAL FOREMAN TO ACT"

Developed by
The Ohio State Leadership Studies
Personnel Research Board
The Ohio State University
DIRECTIONS:

From your day to day contacts with different foremen, you know pretty well how you would like your foreman to act. The questionnaire you are to answer is very much like the one you answered before. However, this time we would like you to answer the questions as you feel your foreman ought to answer them. In other words, this time mark what you think an ideal foreman should do with your work group.

In considering each item go through the following steps:

1. READ each item carefully.

2. THINK about how often you think a foreman should do what that item says. How do you expect an ideal foreman to act with your work group?

3. READ the five answers provided after the item and decide which one of the five most nearly feels how often you want your foreman to do what that item says.

4. NOTE which of the numbers 1, 2, 3, 4, or 5, goes with the answer you have selected.

5. FIND the number, on the separate answer sheet, which matches the number of the item you are answering.

6. YOU WILL FIND five pairs of dotted lines after each of the numbers on the answer sheet. Each pair of dotted lines is headed by one of the small numbers 1, 2, 3, 4, or 5. Blacken the space between the pair of dotted lines which is headed by the same number as the answer you have selected. When blackening the space between the lines, fill in all the space with a heavy black line from the special I.B.M. pencil. If you want to change your answer, erase the mark you made and then mark in another answer.

7. AFTER you have finished one item, go on to the next one in order. You may have as long as you need. Be sure the number on the answer sheet corresponds with the number of the item you are answering in the booklet.

Please remember - you are filling this out as you think the foreman over you in the plant should act toward his workers. How do you think an ideal foreman should act with the work group you are in?

As we said before - there are no right and wrong answers to these questions. Everyone has different ideas on how their foreman should act. Also, remember that no one at Harvester will see your answers. They will be taken to Ohio State University for statistical analysis.
1. PUT THE SECTION’S WELFARE ABOVE THE WELFARE OF ANY MEMBER IN IT.
   1. always  2. often  3. occasionally  4. seldom  5. never

2. GIVE IN TO OTHERS IN DISCUSSIONS WITH HIS WORK GROUP.
   1. often  2. fairly  3. occasionally  4. once in  5. very
      often  a while  seldom

3. ENCOURAGE OVERTIME WORK.
   1. a great  2. fairly  3. to some  4. once in  5. very
      deal  much  degree  a while  seldom

4. TRY OUT HIS OWN NEW IDEAS IN THE WORK GROUP.
   1. often  2. fairly  3. occasionally  4. once in  5. very
      often  a while  seldom

5. BACK UP WHAT PEOPLE UNDER HIM DO.
   1. always  2. often  3. occasionally  4. seldom  5. never

6. CRITICIZE POOR WORK.
   1. always  2. often  3. occasionally  4. seldom  5. never

7. ASK FOR MORE THAN MEMBERS OF THE WORK GROUP CAN GET DONE.
   1. often  2. fairly  3. occasionally  4. once in  5. very
      often  a while  seldom

8. REFUSE TO COMPROMISE A POINT.
   1. always  2. often  3. occasionally  4. seldom  5. never

9. INSIST THAT PEOPLE UNDER HIM FOLLOW TO THE LETTER THOSE STANDARD ROUTINES HANDED DOWN TO HIM.
   1. always  2. often  3. occasionally  4. seldom  5. never

10. HELP PEOPLE IN THE WORK GROUP WITH THEIR PERSONAL PROBLEMS.
    1. often  2. fairly  3. occasionally  4. once in  5. very
        often  a while  seldom

11. BE SLOW TO ACCEPT NEW IDEAS.
    1. always  2. often  3. occasionally  4. seldom  5. never

12. GET THE APPROVAL OF THE WORK GROUP ON IMPORTANT MATTERS BEFORE GOING AHEAD.
    1. always  2. often  3. occasionally  4. seldom  5. never

13. RESIST CHANGES IN WAYS OF DOING THINGS.
    1. a great  2. fairly  3. to some  4. comparatively  5. not at
day  much  degree  little  all

14. ASSIGN PEOPLE IN THE WORK GROUP TO PARTICULAR TASKS.
    1. always  2. often  3. occasionally  4. seldom  5. never

15. SPEAK IN A MANNER NOT TO BE QUESTIONED.
    1. always  2. often  3. occasionally  4. seldom  5. never
16. STRESS BEING AHEAD OF COMPETING WORK GROUPS.
   1. a great 2. fairly 3. to some 4. comparatively 5. not at
deal much degree little all

17. CRITICIZE A SPECIFIC ACT RATHER THAN A PARTICULAR MEMBER OF THE
    WORK GROUP.
   1. always 2. often 3. occasionally 4. seldom 5. never

18. LET OTHERS DO THEIR WORK THE WAY THEY THINK BEST.
   1. always 2. often 3. occasionally 4. seldom 5. never

19. DO PERSONAL FAVORS FOR PEOPLE IN THE WORK GROUP.
   1. often 2. fairly 3. occasionally 4. once in 5. very
   often a while seldom

20. EMPHASIZE MEETING OF DEADLINES.
   1. a great 2. fairly 3. to some 4. comparatively 5. not at
   deal much degree little all

21. INSIST THAT HE BE INFORMED ON DECISIONS MADE BY PEOPLE IN THE WORK
    GROUP UNDER HIM.
   1. always 2. often 3. occasionally 4. seldom 5. never

22. OFFER NEW APPROACHES TO PROBLEMS.
   1. often 2. fairly 3. occasionally 4. once in 5. very
   often a while seldom

23. TREAT ALL PEOPLE IN THE WORK GROUP AS HIS EQUALS.
   1. always 2. often 3. occasionally 4. seldom 5. never

24. BE WILLING TO MAKE CHANGES.
   1. always 2. often 3. occasionally 4. seldom 5. never

25. TALK ABOUT HOW MUCH SHOULD BE DONE.
   1. a great 2. fairly 3. to some 4. comparatively 5. not at
   deal much degree little all

26. WAIT FOR PEOPLE IN THE WORK GROUP TO PUSH NEW IDEAS.
   1. always 2. often 3. occasionally 4. seldom 5. never

27. RULE WITH AN IRON HAND.
   1. always 2. often 3. occasionally 4. seldom 5. never

28. REJECT SUGGESTIONS FOR CHANGES.
   1. always 2. often 3. occasionally 4. seldom 5. never

29. CHANGE THE DUTIES OF PEOPLE IN THE WORK GROUP WITHOUT FIRST TALKING
    IT OVER WITH THEM.
   1. often 2. fairly 3. occasionally 4. once in 5. very
   often a while seldom
30. DECIDE IN DETAIL WHAT SHALL BE DONE AND HOW IT SHALL BE DONE BY THE WORK GROUP.
   1. always 2. often 3. occasionally 4. seldom 5. never

31. SEE TO IT THAT PEOPLE IN THE WORK GROUP ARE WORKING UP TO THEIR LIMITS.
   1. always 2. often 3. occasionally 4. seldom 5. never

32. STAND UP FOR THOSE IN THE WORK GROUP UNDER HIM, EVEN THOUGH IT MAKES HIM UNPOPULAR WITH OTHERS.
   1. always 2. often 3. occasionally 4. seldom 5. never

33. PUT SUGGESTIONS MADE BY PEOPLE IN THE WORK GROUP INTO OPERATION.
   1. always 2. often 3. occasionally 4. seldom 5. never

34. REFUSE TO EXPLAIN HIS ACTIONS.
   1. often 2. fairly 3. occasionally 4. once in a while 5. very seldom

35. ASK FOR SACRIFICES FROM THE MEN UNDER HIM FOR THE GOOD OF HIS ENTIRE WORK GROUP.
   1. often 2. fairly 3. occasionally 4. once in a while 5. very seldom

36. ACT WITHOUT CONSULTING THE WORK GROUP.
   1. often 2. fairly 3. occasionally 4. once in a while 5. very seldom

37. "NEEDLE" PEOPLE IN THE WORK GROUP FOR GREATER EFFORT.
   1. a great 2. fairly 3. to some degree 4. comparatively 5. not at all

38. INSIST THAT EVERYTHING BE DONE HIS WAY.
   1. always 2. often 3. occasionally 4. seldom 5. never

39. ENCOURAGE SLOW-WORKING PEOPLE IN THE WORK GROUP TO WORK HARDER.
   1. often 2. fairly 3. occasionally 4. once in a while 5. very seldom

40. MEET WITH THE WORK GROUP AT CERTAIN REGULARLY SCHEDULED TIMES.
   1. always 2. often 3. occasionally 4. seldom 5. never
"WHAT YOU EXPECT OF YOUR FOREMEN"

Developed by
The Ohio State Leadership Studies
Personnel Research Board
The Ohio State University
DIRECTIONS:

In your day to day contacts with your foreman, you know pretty well what you expect of him. The questionnaire you are to answer is very much like the one you answered before. However, this time we would like you to answer the questions as you feel your foremen ought to answer them. In other words, this time mark what you think your foremen should do with their work groups.

In considering each item go through the following steps:

1. READ each item carefully.

2. THINK about how frequently your foremen should do what is described by that item. How do you expect your foremen to act.

3. READ the five answers provided after the item and decide which one of the five most nearly expresses how you think your foremen should answer it.

4. NOTE which of the numbers 1, 2, 3, 4, or 5, goes with the answer you have selected.

5. FIND the number, on the separate answer sheet, which matches the number of the item you are answering.

6. YOU WILL FIND five pairs of dotted lines after each of the numbers on the answer sheet. Each pair of dotted lines is headed by one of the small numbers 1, 2, 3, 4, or 5. Blacken the space between the pair of dotted lines which is headed by the same number as the answer you have selected. When blackening the space between the lines, fill in all the space with a heavy black line from the special I.B.M. pencil. If you should make an error in marking your answer, you may erase the mark you made and then mark in another answer.

7. AFTER you have finished one item, go on to the next one in order. You may have as long as you need. Be sure the number on the answer sheet corresponds with the number of the item you are answering in the booklet.

Please remember - you are filling this out as you think the foremen under you in the organization should fill it out. We want what you think his attitudes on these questions should be, and not your own this time.

As we said before - there are no right and wrong answers to these questions. Everyone has different ideas on how their men should act. Also, remember that no one at Harvester will see your answers. They will be taken to Ohio State University for statistical analysis.
1. PUT THE SECTION'S WELFARE ABOVE THE WELFARE OF ANY MEMBER IN IT.
   1. always  2. often  3. occasionally  4. seldom  5. never
2. GIVE IN TO OTHERS IN DISCUSSIONS WITH YOUR WORK GROUP.
   1. often  2. fairly  3. occasionally  4. once in a while  5. seldom
3. ENCOURAGE OVERTIME WORK.
   1. a great deal  2. fairly much  3. to some degree  4. once in a while  5. seldom
4. TRY OUT YOUR OWN NEW IDEAS IN THE WORK GROUP.
   1. often  2. fairly  3. occasionally  4. once in a while  5. seldom
5. BACK UP WHAT PEOPLE UNDER YOU DO.
   1. always  2. often  3. occasionally  4. seldom  5. never
6. CRITICIZE POOR WORK.
   1. always  2. often  3. occasionally  4. seldom  5. never
7. ASK FOR MORE THAN MEMBERS OF THE WORK GROUP CAN GET DONE.
   1. often  2. fairly  3. occasionally  4. once in a while  5. seldom
8. REFUSE TO COMPROMISE A POINT.
   1. always  2. often  3. occasionally  4. seldom  5. never
9. INSIST THAT PEOPLE UNDER YOU FOLLOW TO THE LETTER THOSE STANDARD ROUTINES HANDED DOWN TO YOU.
   1. always  2. often  3. occasionally  4. seldom  5. never
10. HELP PEOPLE IN THE WORK GROUP WITH THEIR PERSONAL PROBLEMS.
    1. often  2. fairly  3. occasionally  4. once in a while  5. seldom
11. BE SLOW TO ACCEPT NEW IDEAS.
    1. always  2. often  3. occasionally  4. seldom  5. never
12. GET THE APPROVAL OF THE WORK GROUP ON IMPORTANT MATTERS BEFORE GOING AHEAD.
    1. always  2. often  3. occasionally  4. seldom  5. never
13. RESIST CHANGES IN WAYS OF DOING THINGS.
    1. a great deal  2. fairly much  3. to some degree  4. comparatively little  5. not at all
14. ASSIGN PEOPLE IN THE WORK GROUP TO PARTICULAR TASKS.
    1. always  2. often  3. occasionally  4. seldom  5. never
15. SPEAK IN A MANNER NOT TO BE QUESTIONED.
    1. always  2. often  3. occasionally  4. seldom  5. never
16. STRESS BEING AHEAD OF COMPETING WORK GROUPS.
   1. a great deal
   2. fairly much
   3. to some degree
   4. comparatively little
   5. not at all

17. CRITICIZE A SPECIFIC ACT RATHER THAN A PARTICULAR MEMBER OF THE WORK GROUP.
   1. always
   2. often
   3. occasionally
   4. seldom
   5. never

18. LET OTHERS DO THEIR WORK THE WAY THEY THINK BEST.
   1. always
   2. often
   3. occasionally
   4. seldom
   5. never

19. DO PERSONAL FAVORS FOR PEOPLE IN THE WORK GROUP.
   1. often
   2. fairly
   3. occasionally
   4. once in a while
   5. very seldom

20. EMPHASIZE MEETING OF DEADLINES.
   1. a great deal
   2. fairly much
   3. to some degree
   4. comparatively little
   5. not at all

21. INSIST THAT YOU BE INFORMED ON DECISIONS MADE BY PEOPLE IN THE WORK GROUP UNDER YOU.
   1. always
   2. often
   3. occasionally
   4. seldom
   5. never

22. OFFER NEW APPROACHES TO PROBLEMS.
   1. often
   2. fairly
   3. occasionally
   4. once in a while
   5. very seldom

23. TREAT ALL PEOPLE IN THE WORK GROUP AS YOUR EQUALS.
   1. always
   2. often
   3. occasionally
   4. seldom
   5. never

24. BE WILLING TO MAKE CHANGES.
   1. always
   2. often
   3. occasionally
   4. seldom
   5. never

25. TALK ABOUT HOW MUCH SHOULD BE DONE.
   1. a great deal
   2. fairly much
   3. to some degree
   4. comparatively little
   5. not at all

26. WAIT FOR PEOPLE IN THE WORK GROUP TO PUSH NEW IDEAS.
   1. always
   2. often
   3. occasionally
   4. seldom
   5. never

27. RULE WITH AN IRON HAND.
   1. always
   2. often
   3. occasionally
   4. seldom
   5. never

28. REJECT SUGGESTIONS FOR CHANGES.
   1. always
   2. often
   3. occasionally
   4. seldom
   5. never

29. CHANGE THE DUTIES OF PEOPLE IN THE WORK GROUP WITHOUT FIRST TALKING IT OVER WITH THEM.
   1. often
   2. fairly
   3. occasionally
   4. once in a while
   5. very seldom

30. DECIDE IN DETAIL WHAT SHALL BE DONE AND HOW IT SHALL BE DONE BY THE WORK GROUP.
   1. always
   2. often
   3. occasionally
   4. seldom
   5. never
31. SEE TO IT THAT PEOPLE IN THE WORK GROUP ARE WORKING UP TO THEIR LIMITS.
   1. always 2. often 3. occasionally 4. seldom 5. never

32. STAND UP FOR THOSE IN THE WORK GROUP UNDER YOU, EVEN THOUGH IT MAKES YOU UNPOPULAR WITH OTHERS.
   1. always 2. often 3. occasionally 4. seldom 5. never

33. PUT SUGGESTIONS MADE BY PEOPLE IN THE WORK GROUP INTO OPERATION.
   1. always 2. often 3. occasionally 4. seldom 5. never

34. REFUSE TO EXPLAIN YOUR ACTIONS.
   1. often 2. fairly often 3. occasionally 4. once in a while 5. very seldom

35. ASK FOR SACRIFICES FROM THE MEN UNDER YOU FOR THE GOOD OF YOUR ENTIRE WORK GROUP.
   1. often 2. fairly often 3. occasionally 4. once in a while 5. very seldom

36. ACT WITHOUT CONSULTING THE WORK GROUP.
   1. often 2. fairly often 3. occasionally 4. once in a while 5. very seldom

37. "NEEDLE" PEOPLE IN THE WORK GROUP FOR GREATER EFFORT.
   1. a great deal 2. fairly much 3. to some degree 4. comparatively little 5. not at all

38. INSIST THAT EVERYTHING BE DONE YOUR WAY.
   1. always 2. often 3. occasionally 4. seldom 5. never

39. ENCOURAGE SLOW-WORKING PEOPLE IN THE WORK GROUP TO WORK HARDER.
   1. often 2. fairly often 3. occasionally 4. once in a while 5. seldom

40. MEET WITH THE WORK GROUP AT CERTAIN REGULARLY SCHEDULED TIMES.
   1. always 2. often 3. occasionally 4. seldom 5. never
LEADERSHIP OPINION QUESTIONNAIRE

Developed by
The Ohio State Leadership Studies
Personnel Research Board
The Ohio State University
DIRECTIONS:

Please record your answer to each of the items on the answer sheet which is furnished you for that purpose. Make no marks on the question booklet itself. Please be sure that you are using the special I. B. M. pencil provided for use with the answer sheet.

In considering each item, go through the following steps:

1. READ each item carefully

2. THINK about how frequently you should, as a supervisor, do the things described by the item -- with your particular group of foremen in the plant. We do not necessarily want you to think about what you actually find yourself doing, but more what you consider the most desirable thing to do.

3. READ the five answers provided after the item and decide which one of the five most nearly expresses the frequency with which you as a supervisor should do what the item describes.

4. NOTE which of the numbers 1, 2, 3, 4, or 5, goes with the answer you have selected.

5. FIND the number on the separate answer sheet which matches the number of the item you are answering.

6. YOU will find five pairs of dotted lines after each of the numbers on the answer sheet. Each pair of dotted lines is headed by one of the small figures, 1, 2, 3, 4, or 5. Blacken the space between the pair of dotted lines which is headed by the same number as the answer you have selected. When blackening the space between the pair of lines, fill in all the space with a heavy black line from the special I.B.M. pencil. If you should make an error in marking in your answer, you may erase the mark you made and then mark in another answer.

7. AFTER you have completed one item, go on to the next one in order. You may have as long as you need to finish. Be sure the number on the answer sheet corresponds with the number of the item you are answering in this booklet.

Please, remember -- there are no right or wrong answers to these questions. We all know that what one supervisor thinks about how to lead his men may be very different from what another supervisor might think with a different group of men. So just indicate in your answers what you sincerely think to be the best way to act with your particular group of foremen in your own department.

Also, remember that no one at Harvester will see these answers. They will be taken to Ohio State University for statistical analysis,
1. PUT THE DEPARTMENT'S WELFARE ABOVE THE WELFARE OF ANY FOREMAN IN IT.
   1. always 2. often 3. occasionally 4. seldom 5. never

2. GIVE IN TO OTHERS IN DISCUSSIONS WITH YOUR FOREMEN.
   1. often 2. fairly 3. occasionally 4. once in a while

3. ENCOURAGE OVERTIME WORK.
   1. a great deal 2. fairly much 3. to some degree 4. once in a while

4. TRY OUT YOUR OWN NEW IDEAS IN THE DEPARTMENT.
   1. often 2. fairly 3. occasionally 4. once in a while

5. BACK UP WHAT FOREMEN UNDER YOU DO.
   1. always 2. often 3. occasionally 4. seldom 5. never

6. CRITICIZE POOR WORK.
   1. always 2. often 3. occasionally 4. seldom 5. never

7. ASK FOR MORE THAN THE FOREMEN CAN GET DONE.
   1. often 2. fairly 3. occasionally 4. once in a while

8. RESIST TO COMPROMISE A POINT.
   1. always 2. often 3. occasionally 4. seldom 5. never

9. INSIST THAT FOREMEN UNDER YOU FOLLOW TO THE LETTER, THOSE STANDARD ROUTINES HANDED DOWN TO YOU.
   1. always 2. often 3. occasionally 4. seldom 5. never

10. HELP FOREMEN UNDER YOU WITH THEIR PERSONAL PROBLEMS.
    1. often 2. fairly 3. occasionally 4. once in a while

11. BE SLOW TO ACCEPT NEW IDEAS.
    1. always 2. often 3. occasionally 4. seldom 5. never

12. GET THE APPROVAL OF THE FOREMEN ON IMPORTANT MATTERS BEFORE GOING AHEAD.
    1. always 2. often 3. occasionally 4. seldom 5. never

13. RESIST CHANGES IN WAYS OF DOING THINGS.
    1. a great deal 2. fairly much 3. to some degree 4. comparatively little

14. ASSIGN FOREMEN UNDER YOU TO PARTICULAR TASKS.
    1. always 2. often 3. occasionally 4. seldom 5. never

15. SPEAK IN A MANNER NOT TO BE QUESTIONED.
    1. always 2. often 3. occasionally 4. seldom 5. never
16. STRESS BEING AHEAD OF OTHER DEPARTMENTS.
   1. a great 2. fairly 3. to some 4. comparatively 5. not at
dead      much      degree    little   all
   deal       much      degree    little   all

17. CRITICIZE A SPECIFIC ACT RATHER THAN A PARTICULAR MEMBER OF YOUR
   DEPARTMENT.
   1. always 2. often 3. occasionally 4. seldom 5. never

18. LET THE FOREMEN DO THEIR WORK THE WAY THEY THINK BEST.
   1. always 2. often 3. occasionally 4. seldom 5. never

19. DO PERSONAL FAVORS FOR THE FOREMEN UNDER YOU.
   1. often 2. fairly 3. occasionally 4. once in 5. very
   often     a while    seldom

20. EMPHASIZE MEETING OF DEADLINES.
   1. a great 2. fairly 3. to some 4. comparatively 5. not at
   deal       much      degree    little   all

21. INSIST THAT YOU BE INFORMED ON DECISIONS MADE BY THE FOREMEN UNDER
   YOU.
   1. always 2. often 3. occasionally 4. seldom 5. never

22. OFFER NEW APPROACHES TO PROBLEMS.
   1. often 2. fairly 3. occasionally 4. once in 5. very
   often     a while    seldom

23. TREAT ALL FOREMEN IN THE DEPARTMENT AS YOUR EQUALS.
   1. always 2. often 3. occasionally 4. seldom 5. never

24. BE WILLING TO MAKE CHANGES.
   1. always 2. often 3. occasionally 4. seldom 5. never

25. TALK ABOUT HOW MUCH SHOULD BE DONE.
   1. a great 2. fairly 3. to some 4. comparatively 5. not at
   deal       much      degree    little   all

26. WAIT FOR THE FOREMEN IN THE DEPARTMENT TO PUSH NEW IDEAS.
   1. always 2. often 3. occasionally 4. seldom 5. never

27. RULE WITH AN IRON HAND.
   1. always 2. often 3. occasionally 4. seldom 5. never

28. REJECT SUGGESTIONS FOR CHANGES.
   1. always 2. often 3. occasionally 4. seldom 5. never

29. CHANGE THE DUTIES OF FOREMEN IN THE DEPARTMENT WITHOUT FIRST TALKING
   IT OVER WITH HIM.
   1. often 2. fairly 3. occasionally 4. once in 5. very
   often     a while    seldom

30. DECIDE IN DETAIL WHAT SHALL BE DONE AND HOW IT SHALL BE DONE BY
   THE FOREMEN UNDER YOU.
   1. always 2. often 3. occasionally 4. seldom 5. never
31. **SEE TO IT THAT THE FOREMEN UNDER YOU ARE WORKING UP TO CAPACITY.**
   1. always 2. often 3. occasionally 4. seldom 5. never

32. **STAND UP FOR FOREMEN UNDER YOU, EVEN THOUGH IT MAKES YOU UNPOPULAR WITH OTHERS.**
   1. always 2. often 3. occasionally 4. seldom 5. never

33. **PUT SUGGESTIONS MADE BY FOREMEN IN THE DEPARTMENT INTO OPERATION.**
   1. always 2. often 3. occasionally 4. seldom 5. never

34. **REFUSE TO EXPLAIN YOUR ACTIONS.**
   1. often 2. fairly 3. occasionally 4. once in a while 5. very seldom

35. **ASK FOR SACRIFICES FROM THE FOREMEN UNDER YOU FOR THE GOOD OF YOUR ENTIRE DEPARTMENT.**
   1. often 2. fairly 3. occasionally 4. once in a while 5. very seldom

36. **ACT WITHOUT CONSULTING THE FOREMEN.**
   1. often 2. fairly 3. occasionally 4. once in a while 5. very seldom

37. **"NEEDLE" FOREMEN UNDER YOU FOR GREATER EFFORT.**
   1. a great deal 2. fairly 3. to some degree 4. comparatively 5. not at all

38. **INSIST THAT EVERYTHING BE DONE YOUR WAY.**
   1. always 2. often 3. occasionally 4. seldom 5. never

39. **ENCourage SLOW-WORKING FOREMEN IN YOUR DEPARTMENT TO WORK HARDER.**
   1. often 2. fairly 3. occasionally 4. once in a while 5. very seldom

40. **MEET WITH THE FOREMEN IN YOUR DEPARTMENT AT CERTAIN REGULARLY SCHEDULED TIMES.**
   1. always 2. often 3. occasionally 4. seldom 5. never
APPENDIX II

FORM USED IN SCALING

THE QUESTIONS ON THE

FOREMAN BEHAVIOR DESCRIPTION

QUESTIONNAIRE
NOTE: Consider only the way each foreman treats his work group.

Of the foremen I know, I would like best to work for this one:

I would like to work for this foreman better than most. Some are ahead of him though.

This man is halfway between the best and the worst. He is average.

Would not like to work for this foreman as well as most. He is not the worst though.

Of all the foremen I know, I would least like to work for this foreman.
FOREMAN BEHAVIOR DESCRIPTION

Developed by
The Ohio State Leadership Studies
Personnel Research Board
The Ohio State University
Directions

In this questionnaire we are going to ask you to pick a foreman whom you have worked under at some time or other. A foreman whom you know well enough to be able to:

1. describe the way he treats his men
2. rate him on how well you would like to work for him in comparison with the other foremen you know or have heard about.

Go through the following steps in selecting a foreman to describe and in rating him on how well you would like to work for him:

1. Select a foreman you have worked under at some time or other. Remember, it need not be your present foreman.
2. Compare him with the other foreman you know or have heard of on how well you would like to work for him.

Important: In making this comparison, think only of the way each of the foremen treats his men. For the time being, forget anything else that might affect your decision of how much you might like to work for any one foreman.

a. Take the scale that was given you and DECIDE ROUGHLY where he would stand in the group of foremen you are thinking of by looking at the phrases on the left hand side of the paper.

b. Then use the numbers on the right hand side of the scale to DECIDE EXACTLY where he would stand in the group.

3. WRITE this number in the circle at the top of this page. Do not write your name or the foreman's name. Just write the number.

Remember, this is a comparison of the foreman you are describing with the group of foremen whom you know of or have heard about. You may feel they are all stinkers or all wonderful fellows to work for. The question is, however, how much of a stinker or how much of a wonderful fellow is he in comparison to the others.
When you have done this, you are ready to begin answering the questions that start on the next page. In considering each question, go through the following steps:

1. **READ** each item carefully

2. **THINK** about how frequently the foreman you are describing actually does the things described by the item

3. **READ** the five answers provided after the item and decide which one of the five most nearly tells how often the foreman you are describing does what the item says.

4. **PUT A CIRCLE** around that answer which you feel most nearly tells how often the foreman you are describing does what the item says.

Please remember there are no right or wrong answers to these questions. The items simply describe the behavior of the foreman. They do not judge whether the behavior is good or bad. Every foreman is different and so is every work group, so we expect differences in what different foremen do.

Also remember that **no one** at Harvester will see your answers. They will be taken to Ohio State University for statistical analysis.
1. HE IS EASY TO UNDERSTAND.
   1. always  2. often  3. occasionally  4. seldom  5. never

2. HE ENCOURAGES OVERTIME WORK.
   1. a great  2. fairly  3. to some  4. comparatively  5. not at
dead  much  degree  little  all

3. HE TRIES OUT HIS NEW IDEAS.
   1. often  2. fairly  3. occasionally  4. once in  5. very
   often  a while  seldom

4. HE BACKS UP WHAT PEOPLE IN HIS WORK GROUP DO.
   1. always  2. often  3. occasionally  4. seldom  5. never

5. HE CRITICIZES POOR WORK.
   1. always  2. often  3. occasionally  4. seldom  5. never

6. HE DEMANDS MORE THAN WE CAN DO.
   1. often  2. fairly  3. occasionally  4. once in  5. very
   often  a while  seldom

7. HE REFUSES TO GIVE IN WHEN PEOPLE IN THE WORK GROUP DISAGREE WITH HIM.
   1. always  2. often  3. occasionally  4. seldom  5. never

8. HE EXPRESSES APPRECIATION WHEN ONE OF US DOES A GOOD JOB.
   1. always  2. often  3. occasionally  4. seldom  5. never

9. HE INSISTS THAT PEOPLE UNDER HIM FOLLOW STANDARD WAYS OF DOING THINGS
   IN EVERY DETAIL.
   1. always  2. often  3. occasionally  4. seldom  5. never

10. HE HELPS PEOPLE IN THE WORK GROUP WITH THEIR PERSONAL PROBLEMS.
    1. often  2. fairly  3. occasionally  4. once in  5. very
    often  a while  seldom

11. HE IS SLOW TO ACCEPT NEW IDEAS.
    1. always  2. often  3. occasionally  4. seldom  5. never

12. HE IS FRIENDLY AND CAN BE EASILY APPROACHED.
    1. always  2. often  3. occasionally  4. seldom  5. never

13. HE GETS THE APPROVAL OF THE WORK GROUP ON IMPORTANT MATTERS BEFORE
    GOING AHEAD.
    1. always  2. often  3. occasionally  4. seldom  5. never

14. HE RESISTS CHANGES IN WAYS OF DOING THINGS.
    1. a great  2. fairly much  3. to some  4. comparatively  5. not at
deal  degree  little  all

15. HE ASSIGNS PEOPLE UNDER HIM TO PARTICULAR TASKS.
    1. always  2. often  3. occasionally  4. seldom  5. never
<table>
<thead>
<tr>
<th></th>
<th>HE STRESSES BEING AHEAD OF COMPETING WORK GROUPS.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1. a great 2. fairly 3. to some 4. comparatively 5. not at</td>
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<td></td>
<td>deal    much    degree    little    all</td>
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<tr>
<th></th>
<th>HE LETS OTHERS DO THEIR WORK THE WAY THEY THINK BEST.</th>
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<tbody>
<tr>
<td></td>
<td>1. always 2. often 3. occasionally 4. seldom 5. never</td>
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<thead>
<tr>
<th></th>
<th>HE DOES PERSONAL FAVORS FOR THE MEN UNDER HIM.</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>1. often 2. fairly 3. occasionally 4. once in 5. very</td>
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<tr>
<td></td>
<td>often</td>
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<tr>
<th></th>
<th>HE EMPHASIZES MEETING OF DEADLINES.</th>
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<tbody>
<tr>
<td></td>
<td>1. a great 2. fairly 3. to some 4. comparatively 5. not at</td>
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<tr>
<td></td>
<td>deal    much    degree    little    all</td>
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<th></th>
<th>HE SEES THAT A WORKER IS REWARDED FOR A JOB WELL DONE.</th>
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<tbody>
<tr>
<td></td>
<td>1. always 2. often 3. occasionally 4. seldom 5. never</td>
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<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td></td>
<td>1. always 2. often 3. occasionally 4. once in 5. very</td>
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<th>HE INSISTS THAT HE BE INFORMED ON DECISIONS MADE BY THE PEOPLE UNDER HIM.</th>
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<tbody>
<tr>
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<td>1. always 2. often 3. occasionally 4. seldom 5. never</td>
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<th>HE OFFERS NEW APPROACHES TO PROBLEMS.</th>
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<td></td>
<td>often</td>
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<thead>
<tr>
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<td>1. always 2. often 3. occasionally 4. seldom 5. never</td>
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<thead>
<tr>
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<th>HE IS WILLING TO MAKE CHANGES.</th>
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<tbody>
<tr>
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<td>1. always 2. often 3. occasionally 4. seldom 5. never</td>
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<thead>
<tr>
<th></th>
<th>HE ASKS SLOWER PEOPLE TO GET MORE DONE.</th>
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<tbody>
<tr>
<td></td>
<td>1. often 2. fairly 3. occasionally 4. once in 5. very</td>
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<td></td>
<td>often</td>
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<table>
<thead>
<tr>
<th></th>
<th>HE CRITICIZES PEOPLE UNDER HIM IN FRONT OF OTHERS.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1. often 2. fairly 3. occasionally 4. once in 5. very</td>
</tr>
<tr>
<td></td>
<td>often</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>HE STRESSES THE IMPORTANCE OF HIGH MORALE AMONG THOSE UNDER HIM.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1. a great 2. fairly 3. to some 4. comparatively 5. not at</td>
</tr>
<tr>
<td></td>
<td>deal    much    degree    little    all</td>
</tr>
</tbody>
</table>
30. HE TALKS ABOUT HOW MUCH SHOULD BE DONE.
   1. a great  2. fairly  3. to some  4. comparatively  5. not at
   deal       much     degree    little     all

31. HE "RIDES" THE PERSON WHO MAKES A MISTAKE.
   1. often  2. fairly  3. occasionally  4. once in  5. very
   often     a while  seldom

32. HE WAITS FOR PEOPLE UNDER HIM TO PUSH NEW IDEAS BEFORE HE DOES.
   1. always  2. often  3. occasionally  4. seldom  5. never

33. HE RULES WITH AN IRON HAND.
   1. always  2. often  3. occasionally  4. seldom  5. never

34. HE TRIES TO KEEP THE MEN UNDER HIM IN GOOD STANDING WITH THOSE IN
    HIGHER AUTHORITY.
   1. always  2. often  3. occasionally  4. seldom  5. never

35. HE REJECTS SUGGESTIONS FOR CHANGES.
   1. always  2. often  3. occasionally  4. seldom  5. never

36. HE CHANGES THE DUTIES OF PEOPLE UNDER HIM WITHOUT FIRST TALKING IT OVER
    WITH THEM.
   1. often  2. fairly often  3. occasionally  4. once in  5. very
   a while   seldom

37. HE DECIDES IN DETAIL WHAT SHALL BE DONE AND HOW IT SHALL BE DONE.
   1. always  2. often  3. occasionally  4. seldom  5. never

38. HE SEES TO IT THAT PEOPLE UNDER HIM ARE WORKING UP TO THEIR LIMITS.
   1. always  2. often  3. occasionally  4. seldom  5. never

39. HE STANDS UP FOR PEOPLE UNDER HIM EVEN THOUGH IT MAKES HIM UNPOPULAR.
   1. always  2. often  3. occasionally  4. seldom  5. never

40. HE MAKES THOSE UNDER HIM FEEL AT EASE WHEN TALKING WITH HIM.
   1. always  2. often  3. occasionally  4. seldom  5. never

41. HE PUTS SUGGESTIONS THAT ARE MADE BY THE MEN UNDER HIM INTO OPERATION.
   1. always  2. often  3. occasionally  4. seldom  5. never

42. HE REFUSES TO EXPLAIN HIS ACTIONS.
   1. often  2. fairly  3. occasionally  4. once in  5. very
   often     a while   seldom

43. HE EMPHASIZES THE QUANTITY OF WORK.
   1. a great  2. fairly  3. to some  4. comparatively  5. not at
   deal       much     degree    little     all

44. HE ASKS FOR SACRIFICES FROM HIS MEN FOR THE GOOD OF THE ENTIRE
    DEPARTMENT
   1. often  2. fairly  3. occasionally  4. once in  5. very
   often     a while   seldom
45. HE ACTS WITHOUT CONSULTING THE MEN UNDER HIM FIRST.
   1. often  2. fairly  3. occasionally  4. once in a while  5. very seldom

46. HE "NEEDLES" PEOPLE UNDER HIM FOR GREATER EFFORT.
   1. a great deal  2. fairly much  3. to some degree  4. comparatively little  5. not at all

47. HE INSISTS THAT EVERYTHING BE DONE HIS WAY.
   1. always  2. often  3. occasionally  4. seldom  5. never

48. HE ENCOURAGES SLOW-WORKING PEOPLE TO GREATER EFFORT.
   1. often  2. fairly  3. occasionally  4. once in a while  5. very seldom
FOREMEN BEHAVIOR IMPORTANCE

Developed by
The Ohio State Leadership Studies
Personnel Research Board
The Ohio State University
In your first questionnaire, you were asked to estimate how much you would like to work for a group of foremen. You were not asked why you put some foremen high and other foremen low. In this form, we would like to find out how much importance you would give to different kinds of actions in helping you to make up your mind. You know what is important to you as a worker. You know how any foreman acts before you like or dislike to work for him.

Go through each of the items in the questionnaire. Answer each item in its turn. If you think you might like to work for a foreman who acted that way, put a check in the box labeled with an "L" (like). If you think you might dislike working under a foreman who acted that way, put a check in the box labeled with a "D" (dislike). Before going to the next item, draw a line through the scale at that point which best shows how much importance you would put on that kind of action.

Think of each item separately. Do not let your answer to one question affect your answer to another question.

Examples:

1. TALKS IN A LOUD TONE OF VOICE

<table>
<thead>
<tr>
<th></th>
<th>L</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>small below avg average above avg great</td>
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</tr>
<tr>
<td>importance importance importance importance</td>
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2. ALWAYS YELLS AT HIS MEN

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<th>L</th>
<th>D</th>
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<tbody>
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<td>importance importance importance importance</td>
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3. NEVER CRITICIZES HIS MEN

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Just to make sure you have the idea, do the next one yourself.

**EASY TO GET ALONG WITH**

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<td>portance</td>
<td>portance</td>
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<tr>
<td>below average importance</td>
<td>average importance</td>
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</tbody>
</table>

Remember, there are no right or wrong answers. It is just the way you feel. It is expected that not all people will agree on the items.

Do each item separately. Do not proceed to the next item until you have finished the one you are working on.

No one at Harvester will see your answers. They will be taken to Ohio State University.
1. **EASY TO UNDERSTAND**

   |   |   |
   | L | D |
   | small | below avg | average | above avg | great |
   | impor- | tance | impor- | tance | impor- | tance |

2. **ENCOURAGES OVERTIME WORK**

   |   |   |
   | L | D |
   | small | below avg | average | above avg | great |
   | impor- | tance | impor- | tance | impor- | tance |

3. **TRIES OUT HIS NEW IDEAS**

   |   |   |
   | L | D |
   | small | below avg | average | above avg | great |
   | impor- | tance | impor- | tance | impor- | tance |

4. **BACKS UP WHAT PEOPLE IN HIS WORK GROUP DO**

   |   |   |
   | L | D |
   | small | below avg | average | above avg | great |
   | impor- | tance | impor- | tance | impor- | tance |

5. **CRITICIZES POOR WORK**

   |   |   |
   | L | D |
   | small | below avg | average | above avg | great |
   | impor- | tance | impor- | tance | impor- | tance |

6. **DEMANDS MORE THAN WE CAN DO**

   |   |   |
   | L | D |
   | small | below avg | average | above avg | great |
   | impor- | tance | impor- | tance | impor- | tance |

7. **REFUSES TO GIVE IN WHEN PEOPLE IN THE WORK GROUP DISAGREE WITH**

   |   |   |
   | L | D |
   | small | below avg | average | above avg | great |
   | impor- | tance | impor- | tance | impor- | tance |

8. **EXPRESSES APPRECIATION WHEN ONE OF US DOES A GOOD JOB**

   |   |   |
   | L | D |
   | small | below avg | average | above avg | great |
   | impor- | tance | impor- | tance | impor- | tance |
9. **INSISTS THAT PEOPLE UNDER HIM FOLLOW STANDARD WAYS OF DOING THINGS IN EVERY DETAIL**

<table>
<thead>
<tr>
<th>Importance</th>
<th>Below Average</th>
<th>Average</th>
<th>Above Average</th>
<th>Great</th>
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10. **HELPS PEOPLE IN THE WORK GROUP WITH THEIR PERSONAL PROBLEMS**

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<th>Importance</th>
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<th>Average</th>
<th>Above Average</th>
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11. **SLOW TO ACCEPT NEW IDEAS**

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<th>Above Average</th>
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12. **FRIENDLY AND CAN BE EASILY APPROACHED**

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<tr>
<th>Importance</th>
<th>Below Average</th>
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<th>Above Average</th>
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13. **GETS THE APPROVAL OF THE WORK GROUP ON IMPORTANT MATTERS BEFORE GOING AHEAD**

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<tr>
<th>Importance</th>
<th>Below Average</th>
<th>Average</th>
<th>Above Average</th>
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14. **RESISTS CHANGES IN WAYS OF DOING THINGS**

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<th>Importance</th>
<th>Below Average</th>
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<th>Above Average</th>
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15. **ASSIGNS PEOPLE UNDER HIM TO PARTICULAR TASKS**

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16. **STRESSES BEING AHEAD OF COMPETING WORK GROUPS**

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<tr>
<th>Importance</th>
<th>Below Average</th>
<th>Average</th>
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</table>
24. Omissions may be found in the record of previous decisions made by the person under discussion.

23. INSISTS THAT ALL BE INFORMED ON DECISIONS MADE BY THE PERSON UNDER DISCUSSION.

22. THINKS PEOPLE UNDER HIM WITHOUT CONSULTING THEIR FEELINGS.

21. SAYS THAT A JOURNEY IS NEEDED FOR A JOB WELL DONE.

20. EMPHASIZES SPENDING OR DECISIONS.

19. DOES PERSONAL PREFERENCES FOR THE MREN UNDARK HIM.

18. LETS OTHERS DO WHAT WORK THEY THINK BEST.

17. CRITICIZES A SPECIFIC ACT WITHOUT THINKING A PARTICULAR INDIVIDUAL.  

-32-
25. TREATS ALL WORKERS UNDER HIM AS HIS EQUALS

26. WILLING TO MAKE CHANGES

27. ASKS SLOWER PEOPLE TO GET MORE DONE

28. CRITICIZES PEOPLE UNDER HIM IN FRONT OF OTHERS

29. STRESSES THE IMPORTANCE OF HIGH MORALE AMONG THOSE UNDER HIM

30. TALKS ABOUT HOW MUCH SHOULD BE DONE

31. "RIDES" THE PERSON WHO MAKES A MISTAKE

32. WAITS FOR PEOPLE UNDER HIM TO PUSH NEW IDEAS BEFORE HE DOES
33. **RULES WITH AN IRON HAND**

<table>
<thead>
<tr>
<th>Importance</th>
<th>Small</th>
<th>Below Average</th>
<th>Average</th>
<th>Above Average</th>
<th>Great</th>
</tr>
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34. **TRIES TO HELP THE MEN UNDER HIM IN GOOD STANDING WITH THOSE IN HIGHER AUTHORITY**

<table>
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<tr>
<th>Importance</th>
<th>Small</th>
<th>Below Average</th>
<th>Average</th>
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35. **REJECTS SUGGESTIONS FOR CHANGES**

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<tr>
<th>Importance</th>
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<th>Average</th>
<th>Above Average</th>
<th>Great</th>
</tr>
</thead>
</table>

36. **CHANGES THE DUTIES OF PEOPLE UNDER HIM WITHOUT FIRST TALKING IT OVER WITH THEM**

<table>
<thead>
<tr>
<th>Importance</th>
<th>Small</th>
<th>Below Average</th>
<th>Average</th>
<th>Above Average</th>
<th>Great</th>
</tr>
</thead>
</table>

37. **DECIDES IN DETAIL WHAT SHALL BE DONE AND HOW IT SHALL BE DONE**

<table>
<thead>
<tr>
<th>Importance</th>
<th>Small</th>
<th>Below Average</th>
<th>Average</th>
<th>Above Average</th>
<th>Great</th>
</tr>
</thead>
</table>

38. **SEES TO IT THAT PEOPLE UNDER HIM ARE WORKING UP TO THEIR LIMITS**

<table>
<thead>
<tr>
<th>Importance</th>
<th>Small</th>
<th>Below Average</th>
<th>Average</th>
<th>Above Average</th>
<th>Great</th>
</tr>
</thead>
</table>

39. **STANDS UP FOR PEOPLE UNDER HIM EVEN THOUGH IT MAKES HIM UNPOPULAR**

<table>
<thead>
<tr>
<th>Importance</th>
<th>Small</th>
<th>Below Average</th>
<th>Average</th>
<th>Above Average</th>
<th>Great</th>
</tr>
</thead>
</table>

40. **MAKES THOSE UNDER HIM FEEL AT EASE WHEN TALKING WITH HIM**

<table>
<thead>
<tr>
<th>Importance</th>
<th>Small</th>
<th>Below Average</th>
<th>Average</th>
<th>Above Average</th>
<th>Great</th>
</tr>
</thead>
</table>
41. PUTS SUGGESTIONS THAT ARE MADE BY THE MEN UNDER HIM INTO OPERATION

| 241 |

<table>
<thead>
<tr>
<th>small</th>
<th>below average</th>
<th>average</th>
<th>above average</th>
<th>great</th>
</tr>
</thead>
</table>
| impor-| erage im-     | impor-  | erage im-     | impor-
| tance | tance         | tance   | tance         | tance |

42. REFUSES TO EXPLAIN HIS ACTIONS

| 241 |

<table>
<thead>
<tr>
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<th>average</th>
<th>above average</th>
<th>great</th>
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</thead>
</table>
| impor-| erage im-     | impor-  | erage im-     | impor-
| tance | tance         | tance   | tance         | tance |

43. EMphasizes The Quantitative Of Work

| 241 |

<table>
<thead>
<tr>
<th>small</th>
<th>below average</th>
<th>average</th>
<th>above average</th>
<th>great</th>
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</thead>
</table>
| impor-| erage im-     | impor-  | erage im-     | impor-
| tance | tance         | tance   | tance         | tance |

44. ASKS FOR SACRIFICES FROM HIS MEN FOR THE GOOD OF THE ENTIRE DEPARTMENT

| 241 |

<table>
<thead>
<tr>
<th>small</th>
<th>below average</th>
<th>average</th>
<th>above average</th>
<th>great</th>
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</thead>
</table>
| impor-| erage im-     | impor-  | erage im-     | impor-
| tance | tance         | tance   | tance         | tance |

45. ACTS WITHOUT CONSULTING THE MEN UNDER HIM FIRST

| 241 |

<table>
<thead>
<tr>
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<th>below average</th>
<th>average</th>
<th>above average</th>
<th>great</th>
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</thead>
</table>
| impor-| erage im-     | impor-  | erage im-     | impor-
| tance | tance         | tance   | tance         | tance |

46. "NEEDLES" PEOPLE UNDER HIM FOR GREATER EFFORT

| 241 |

<table>
<thead>
<tr>
<th>small</th>
<th>below average</th>
<th>average</th>
<th>above average</th>
<th>great</th>
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</thead>
</table>
| impor-| erage im-     | impor-  | erage im-     | impor-
| tance | tance         | tance   | tance         | tance |

47. INSISTS THAT EVERYTHING BE DONE HIS WAY

| 241 |

<table>
<thead>
<tr>
<th>small</th>
<th>below average</th>
<th>average</th>
<th>above average</th>
<th>great</th>
</tr>
</thead>
</table>
| impor-| erage im-     | impor-  | erage im-     | impor-
| tance | tance         | tance   | tance         | tance |

48. ENCOURAGES SLOW-WORKING PEOPLE TO GREATER EFFORT

| 241 |

<table>
<thead>
<tr>
<th>small</th>
<th>below average</th>
<th>average</th>
<th>above average</th>
<th>great</th>
</tr>
</thead>
</table>
| impor-| erage im-     | impor-  | erage im-     | impor-
| tance | tance         | tance   | tance         | tance |
APPENDIX III

DISTRIBUTION OF GROUP BEHAVIOR CRITERIA
SCORES AND CONSIDERATION AND STRUCTURE SCORES
DISTRIBUTION OF CONSIDERATION AND INITIATION OF STRUCTURE SCORES (N=58)

Consideration Scores

Figure 5

Initiation of Structure Scores

Figure 6
DISTRIBUTION OF GRIEVANCE AND TURNOVER RATES (N=58)

Grievance Rates

Figure 7

Turnover Rates

Figure 8
DISTRIBUTION OF ABSENTEEISM AND ACCIDENT RATES
( N 58)
DISTRIBUTION OF ATTITUDE SCORES TOWARD WORKING FOR A FOREMAN (N=58)

Semi-internal Criterion Method

Choice Method of Scaling

Figure 11

Figure 12
I, Edwin Francis Harris, was born in Detroit, Michigan, January 24, 1925. I received my secondary school education in the public school system of Detroit. I obtained my Bachelor of Arts degree in 1949 from Wayne University in the above mentioned city. The following year, 1950, I received a Master's degree in psychology at the same university. During this latter period, I held the role of a graduate assistant instructor. In October, 1950, I enrolled at Ohio State University where I majored in industrial psychology and completed training for the degree -- Doctor of Philosophy in December, 1952. During this time I held the position of research assistant from October, 1950, through December, 1951, at which time I was appointed International Harvester Research Fellow.