

THE DEVELOPMENT OF
A
FORCED CHOICE SUPERVISORY PERFORMANCE REPORT
WITHIN A LARGE AUTOMOTIVE CORPORATION

A Dissertation

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by

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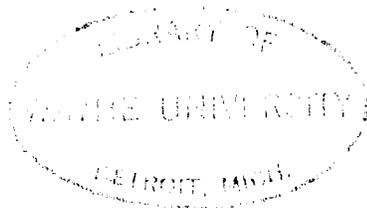
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CHAPTER I

INTRODUCTION

Statement of the Problem

The purpose of this experiment is to develop a valid and reliable forced choice rating instrument which will discriminate between successful and non-successful industrial supervisors in a specific plant within a large automotive corporation. This forced choice rating instrument will be developed partially on critical incidents of on-the-job performance as opposed to the frequently used basis of inferences and trait names.

Hypotheses upon which this study is based are: there is a difference between on-the-job performances of successful and non-successful industrial supervisors; these differences in performances are observable; the record of these observed performances can be evaluated in terms of critical requirements related to the success or failure of the industrial supervisor; a forced choice rating instrument can be developed partially on the basis of these critical incidents of behavior which discriminate between successful and non-successful supervisors; this forced choice rating instrument will aid in the elimination of personal bias from ratings; this rating instrument will cause the rater to utilize the observable performances of the ratee in the process of rating as opposed to entirely utilizing inferences that may have been drawn from the performances.

Review of Relevant Literature

The following review of relevant literature on merit rating attempts to present pertinent factors relating to the area.

Mahler states that management is aware of the need for systematic determination of the relative worth of employees to their organization, but the reason for management's discouragement with rating plans is primarily symptomatic in nature.¹ Underneath the variety of discouragement exists one uniform condition: the lack of an experimental, a developmental, a scientific approach to the entire rating problem. With few exceptions the companies reporting discouraging results have relied upon trial and error rather than on the basis of research, and upon expediency rather than sound policy determination. Mahler further exemplifies the lack of systematic scientific approach through failure to specify the explicit purpose of their rating program, the lack of realization that subjective ratings have definite limitations, and the hazy conception of the meaning of validity and reliability. Lack of follow-up to demonstrate how employee ratings have proved of value in dealing with operational problems results in losing the support and interest of management in the rating program.

Four principal factors suggested as a basis for becoming more scientific in rating employees are: understanding of rating fundamentals, a systematic procedure, trained personnel, and the support of management. The procedure may appear to be difficult, but there is no simple procedure whereby a valid and reliable rating program can be established.

¹Walter R. Mahler, "Let's Get More Scientific in Rating Employees," Personnel, XII (1947), 310-20.

Weinstock¹ concludes that merit rating cannot be imposed from above; all levels of management must participate. The object of merit rating is to obtain a somewhat objective evaluation of the employee's work performance and progress. Stress is given to the need for training in the use of merit ratings. Uhrbrock collected, edited and evaluated 724 descriptive statements for the purpose of improving rating scales.² One of his conclusions is that dependence can be placed upon scale values obtained through the cooperation of a relatively small number of judges when the Thurstone attitude scaling technique is used.³ Uhrbrock further concludes that many statements are indicative of a similar degree of success to be expected in varied occupations such as teaching and foremanship. Bittner states that merit rating items need to be selected as to observability, universality, and distinguishability.⁴ Merit rating is still in the traditional stage. . .the supervisor must train himself against generalizing on one or a few instances.⁵

The forced choice merit rating system is relatively new. During the latter part of World War II it was developed for the Armed Forces by the Personnel Research Section of the Adjutant General's Office. It

¹Irving Weinstock, "Merit Rating - A Restatement of Principles," Personnel Journal (1948), 223-26.

²Richard S. Uhrbrock, "Standardization of 724 Rating Scale Statements," Personnel Psychology, III (1948), 403-32.

³L. L. Thurstone, "Attitudes Can Be Measured," American Journal of Sociology, XXXIII (1928), 529-54.

⁴Reign H. Bittner, "Developing an Industrial Merit Rating Procedure," Personnel Psychology, I (1948), 403-32.

⁵Lilian Morrow, "A New Approach to Merit Rating," Modern Management, IX (1949), 19-22.

has shown much promise in the few practical as well as experimental situations in which it has been used.¹

Industrial Personnel Management in the future may find the forced choice technique valuable in the rating of supervisors and foremen as well as in the evaluation of rank and file workers. The forced choice rating form is the product of many months of research, and it is radically different from previous forms.² Instead of indicating how much or how little a person possesses a characteristic, the rater is required to choose from sets of four phrases, which best characterizes the person. This forces the rater to report instead of judge. Personal bias is reduced because the rater no longer has the opportunity to choose obviously good or bad traits. This method was considered to be superior to all other methods examined since it produces a distribution of ratings relatively free from the usual pile up at the top of the scale, is quickly and objectively scored, and the ratings are valid indices of real worth. Richardson reports an empirical situation to determine its effectiveness.³ One conclusion stated that the validity and reliability were quite satisfactory. The time required to complete one form was less than thirty minutes, and the scoring time was less than three minutes. The distribution of scores was relatively free from the large

¹Roger M. Bellows, Psychology of Personnel in Business and Industry (New York: Prentice Hall, Inc., 1949), p. 469.

²Donald E. Sisson, "Forced Choice - The New Army Rating," Personnel Psychology, I (1948), 365-81.

³Marion W. Richardson, "An Empirical Study of the Forced Choice Performance Report," American Psychologist, IV (1949), 278-79.

negative skew found in most merit rating studies.

Flanagan presents the statement that in the field of personnel research progress on the development of techniques for defining the job and for obtaining satisfactory criterion measures of success on the job has lagged far behind other aspects of research methodology.¹ An approach has been developed which attempts to substitute data in the form of representative samples of observed behavior for opinions. Critical incidents are collected which report observations of behavior representing either satisfactory or unsatisfactory performance of important aspects of the individual's job. While these critical incidents involve judgments they are only the usual judgments of sameness and relevance necessary to the compilation of any statistical series. Since the incidents involve only behavior and not inferences based on behavior, they tend to represent objective data rather than subjective opinions or impressions.

The Critical Incidents Technique was developed during World War II in the Air Aviation Psychology Program under the direction of John C. Flanagan. This approach resembled the usual approaches of job description and job analysis in that detailed descriptions of the job and the job requirements were made. It differs from the usual approaches in that stress was laid upon the critical job requirements in relation to the successful or non-successful participation of a significant number

¹John C. Flanagan, Current Trends in Industrial Psychology (Pittsburgh: University of Pittsburgh Press, 1949), p. 198.

of individuals on that job.

This technique first focused attention on some specific situation in which the effectiveness of an officer had been judged, and then on the specific behavior the raters had seen.

An adequate solution to the problem of job requirements must be based on observations of the behavior of the individual worker, and the effectiveness of this behavior in accomplishing the assigned task in a satisfactory manner. These observations are the primary data on which all other types of estimates, opinions, judgment or inferences must be based. A key problem in personnel psychology is to determine what an individual should and should not do to be successful in his assigned duties.

Foreman reports the use of the forced choice approach in meeting the objectives of the United Parcel Service management program.¹ Large numbers of executives participated in the in-company research on which the forced choice method is based. During the period of research much attention on the part of key people was focused on the quality of work of the management organization. So much cross-checking, committee evaluation, ranking, and reanalyzing was done that if no evaluation form had ever resulted the time and expense of the research would have been profitable to the corporation. However, a forced choice performance report was produced which was both valid and stable.

¹Charles W. L. Foreman, "Inventory, Planning, and Development of the Management Organization," Personnel, XXVII (1951), 3-12.

An attempt to use the forced choice techniques to evaluate counselors in student residence halls at the University of Illinois has been reported.¹ The method used in this study varies from the usual method in that the raters were not in a position to observe the ratees at work. The authors state that the results of the study indicate that the forced choice technique of rating is expected to be helpful in this area, and ratings were superior to two other methods.

A few of the conclusions which one may draw from the literature in the area of merit rating are: management recognizes the need for a valid and reliable plan for objectively evaluating employees; management must recognize that the purpose of the rating program must be clearly established if it is to be of maximum value; the rating procedure must be as objective as possible; it is necessary that the rating procedure be scientifically established; and the raters must be trained in the use of the rating procedure. During recent years much research has been conducted in the area of merit rating, and progress is being made toward a more scientific plan of procedure.

¹Leonard Staugas and Louis L. McQuitty, "A New Application of Forced Choice Ratings," Personnel Psychology, III (1950), 413-24.

CHAPTER II

THE PROBLEM AND THE EXPERIMENTAL POPULATION

Delimiting the Problem

The problem is to develop a forced choice performance report for industrial supervisors in a press plant within a large automotive corporation. The term "supervisor" in this report includes all persons from first line supervisors to top management, excluding the plant manager.

Plan of Procedure

The plan for this study is patterned after the plan suggested by Rundquist.¹

1. Collection of critical incidents of supervisory performance for successful and non-successful supervisors.
2. Preparation of a complete list of items of performance culled from these incidents of performance and the administration of this list to supervisors in the plant.
3. Determination of two indices for each item of performance, a preference index and a discriminative index.
4. Selection of pairs of items of performance such that they appear of equal value to the rater (preference index) but differ in their significance for success as a supervisor (discriminative index).
5. Assembling of pairs of selected items into tetrads.
6. Item selection against an external criterion and cross-validation of the selected items.

¹Staff, Personnel Research Section, "The Forced Choice Technique and Rating Scales," The American Psychologist, I (1946), 267.

In the first step, the incidents of performance obtained serve as a source of data pertinent to the situation being evaluated.

The second step is the preparation of a list of incidents of performance to be scaled. A minimum amount of editing is used in culling the items to be included in the Check List which is submitted to a group of supervisors. The instructions require each respondent to think of a supervisor whom he knows well enough to describe accurately. In the first section of the list he is instructed to indicate on a five-point scale how well each item on the list applies to the supervisor he is thinking about. The second section consists of a twenty-point rating scale on which the respondent indicates where the supervisor he is describing rates in overall competence with respect to a representative group of supervisors.

The third step involves the calculation of the preference and discriminative indices. The preference index indicates the tendency of raters to mark people high or low on the particular behavior item. In this study high values of the index indicate a tendency to mark the item as applying to a high or outstanding degree; low values indicate little or no applicability for the item. Low values of the discriminative index indicate that the item is equally applicable to successful and non-successful supervisors and, therefore, does not discriminate. High values indicate wide differences between the groups in applicability of the item and, suggests that it represents significant behavior for success or failure.¹ The discriminative index is a measure of the

¹Sisson, op. cit.

extent to which the item discriminates successful from non-successful supervisors.

The fourth step involves the pairing of items of performance. Items are paired on the basis of the same or, nearly the same, preference index but differ on the discriminative index. For one phrase the discriminative index is high, for the other, it is low. However, there are principles other than statistical to be considered in the pairing of items. The use of opposites should be avoided, repetition of items should be used sparingly, and items of an extremely unfavorable tone should be eliminated because of rater resistance to their use.

The pairs of items are grouped into tetrads. The items within the tetrads may be arranged in any order. From the tetrads a performance report is constructed and administered to a group of raters, in this case, a group of official supervisory raters. The raters indicate which of the items in each tetrad is most like the ratee, and which of the items is least like the ratee.

The final step involves item selection against a criterion obtained for a known group and cross validation of the finally selected items. Forced choice items may act differently when combined with other items than they do alone. The scoring of the forced choice performance report will be presented in a later chapter.

Experimental Population

The press plant selected for the pilot study is in its second year of operation, and approximately 50 people are employed in supervisory positions. The supervisors in the press plant have gone through a

rigorous screening process of selection including a three hour testing program, and a five day orientation program for all new supervisors sponsored by the Department of Industrial Education.

The average supervisor in this plant is approximately 39 years old, married and has two or three dependents. He has completed twelve years of formal education in addition to some specialized training in various areas. The average supervisor in this plant has been with the corporation for a period of seventeen months, as of the beginning of this study, excluding nine supervisors who have an average of fourteen years service with the corporation. The average supervisor has had thirteen months of supervisory experience with the corporation.

All men in supervisory positions, with the exception of the plant manager, attend a weekly conference meeting conducted by an educational staff member who has been trained by the corporation for this position. The educational staff member is a graduate of an approved four year college or university with additional graduate work in his area. The staff member has had teaching and administrative experience in the public schools prior to his entrance to industry.

CHAPTER III

COLLECTION AND ANALYSIS OF INITIAL DATA

Procurement of Critical Incidents of Supervisory Performance

Group interviews with all levels of supervision were used for the collection of critical incidents of on-the-job performance for successful and non-successful supervisors within the plant. The interviews were conducted during the weekly conference in an attempt to avoid interruption of the plant schedule. One conference group consisted of top management, and four groups consisted of all other levels of supervision.

The initial meetings with the supervisory conference groups, following preliminary arrangements for the study, were devoted to the collection of critical incidents of on-the-job performance for both successful and non-successful supervisors within the plant. Each supervisor in each of the five conference groups described two specific supervisors in the plant with whom he was well acquainted. Two forms with the following instructions were used for this purpose.¹

1. During the past six months have you had a supervisor demoted or transferred? Yes () No (). Check one reply. If your reply is "No", think of a supervisor whom you think should be transferred or demoted. This supervisor probably erred on numerous occasions, but what were the major things he did which caused you to reach this decision?
2. From among the supervisors you have worked closely with during the past six months think of one whom you would rank first in the group as having done the best job of supervision. Undoubtedly, the supervisor ranked first has done many fine things.

¹Appendix A, Forms for collecting critical incidents of performance for successful and non-successful supervisors.

However, list the specific things he did which make him stand out in your mind as a superior supervisor.

The forms used for collecting data were unsigned and the ratees were unidentified. The purpose was to secure observed supervisory performances from men who were in a position to supply such information. All members present contributed information.¹ However, no pressure was exerted as to the length of the descriptions; the conference groups were asked to write as much or as little as they preferred or none at all if they chose.

Editing the Items

From typed reproductions of the collected critical incidents of performances for successful and non-successful supervisors an attempt was made to select items of performance that could be observed, and that applied to supervisors in general. Even though an attempt was made to instruct the conference members to report items of performance rather than judgments based on performance, much of the data could not be classified as "incidents of performance."

In editing the items little attempt was made to rewrite statements contributed by the supervisors even though some of the items appeared to duplicate other items. The purpose, as previously stated, was to discover the difference in the performance of successful and non-successful supervisors. Had time and circumstances permitted, conference

¹Appendix B, Samples of critical incidents of supervisory performance for successful and non-successful supervisors as reported by all levels of industrial supervision within the press plant in which this study was conducted.

groups would have been asked to report the incidents upon which they had based statements of judgment such as, "He was not cooperative," or "He had a belittling attitude." Since this step was not carried out, supplementary items were secured from other sources including the Uhrbrock study.¹

¹Uhrbrock, op. cit.

CHAPTER IV

THE CHECK LIST

Construction of the Check List

Incidents of performance for successful and non-successful supervisors were collected and edited for observability and universality. A total of 320 selected items were used in the construction of a check list.¹

Administration of the Check List

At the second meetings with the supervisory conference groups the Check List was presented and each member was asked to use the Check List to describe one supervisor in the plant with whom he was well acquainted. The average time required to complete the Check List was approximately forty minutes. The rater was required to indicate to what degree each of the items on the Check List applied to the specific supervisor who was being rated. If the item described the supervisor all the time, or always, a "5" was placed in the answer space preceding the item; if the item described the supervisor nearly all the time, with few exceptions, a "4" was written in the answer space preceding the item; if the item described the supervisor about half of the time, average, a "3" was placed in the answer space if the item described the person sometimes, occasionally; and finally, if the item described the person hardly ever, not at all, a "1" was written in the answer space. In an attempt to reduce the effects of the factor of fatigue half of

¹Appendix C, Check List of 320 items.

the Check Lists were reversed in the order of page assembly with the exceptions of the first and last pages.

The second phase of the Check Lists consisted of a twenty-point scale on which the rater indicated where the supervisor he was describing rated in overall job competence with respect to a representative group of supervisors within the plant. An effort was made to avoid reference to the overall rating until the Check List had been completed. The purpose for avoidance was to prevent the raters from striving to describe the ratee in terms of the overall rating. In some instances this was not possible because the supervisors discovered the twenty-point scale and asked for information relative to its use.

Analysis of Check List Results

The Check Lists were collected and arranged in order of the rating on overall job competence, upper, middle, and lower thirds, for the purpose of item analysis.

A preference index, an indication of the tendency of raters to mark people high or low on the given behavior item, and a discriminative index, a measure of the ability of items to discriminate between successful and non-successful supervisors, were computed for each item.¹ The procedure used in this study is the same as that described

¹Appendix D, Frequency distribution of responses to items on the Check List; the discriminative and the preference indices for each item.

by Sisson¹ with a few minor variations.²

For each item, the frequencies of each alternative are summed across the three groups (upper, middle, and lower thirds). The frequencies are multiplied by the weight (one less than the number preceding the alternative in the key) and the five weighted alternative frequencies are added to yield a total sum for the item. This sum multiplied by 100 and divided by N (the total number of cases) gives the preference index.

For each of the alternatives of a given item the absolute difference between its frequencies in the upper and lower groups is computed. The discriminative index is found by adding these differences without regard to signs. At one extreme where there is no overlap in the frequency distributions the value of the discriminative index will be high, but at the other extreme when the overlap is great the discriminative index will be low.

The number of each item was plotted on a double entry table with preference indices along the ordinate and discriminative indices along the abscissa.

One hundred seventy-five items with a favorable tone ranged from 200 to 339 on the preference indices, and one hundred forty-five items

¹Sisson, op. cit.

²Appendix E, Sample form for computing the preference index and the discriminative index. (In this study the order of magnitude is reversed for the degree to which the items on the Check List apply to the ratee. High preference indices are related to items with a favorable tone, while low preference indices are related to items with an unfavorable tone.)

with an unfavorable tone ranged from zero through 192.

TABLE 1

EXAMPLE OF CALCULATION OF PREFERENCE AND DISCRIMINATIVE INDICES
FOR FORCED CHOICE ITEMS

Alternative.....	1	2	3	4	5	
Weight (W).....	0	1	2	3	4	
Frequency (f)						
Upper (U).....	0	1	1	8	3	n = 13
Middle (M).....	0	1	5	4	1	n = 11
Lower (L).....	5	0	6	0	1	n = 12
f = U + M + L.....	5	2	12	12	5	N = 36
f (w).....	0	2	24	36	20	Σ fw = 82
*U-L = d.....	5	1	5	8	2	Σ d = 21

$$\text{Preference Index: } \frac{\Sigma fw (100)}{N} = \frac{82 (100)}{36} = 228$$

$$\text{Discriminative Index: } \Sigma d = 21$$

*The absolute difference is recorded disregarding the sign.

The possible range for the discriminative indices was one through 25. Upon inspection of the double entry table it was observed that the favorable items had a higher discriminative index mean than the unfavorable items. The mean for the 320 items was 15.87. The discriminative index mean was 17.7 for favorable items and 14.34 for unfavorable items. The discriminative indices of the middle 50 per cent of the favorable items ranged from 15 through 19; the discriminative indices of the middle 50 per cent of the unfavorable items ranged from 13 through 17.

DISTRIBUTION OF DISCRIMINATIVE INDICES FOR 320 ITEMS

TABLE 2

Raw Score	F	FX
1. 111	3	3
2.		
3.		
4.		
5. 1111 11	7	35
6.		
7. 1111 111 111	13	91
8.		
9. 1111 1111 1111	14	126
10.		
11. 1111 1111 1111 1111	15	165
12.		
13. 1111 1111 1111 1111 111	38	494
14.		
15. 1111 1111 1111 1111 1111 1111	45	675
16.		
17. 1111 1111 1111 1111 1111 1111 1111 1111	79	1343
18.		
19. 1111 1111 1111 1111 1111 1111 1111 1111 1111 1	51	969
20.		
21. 1111 1111 1111 1111 1111 1111 1111 1111 1111 1111	45	945
22.		
23. 1111 1111 1111	9	207
24.		
25. 1	1	25

ΣFX = 5078

ΣF = 320

61

6583

M443d

1c

Handwritten notes at bottom left.

TABLE 3

DISCRIMINATIVE INDICES DISTRIBUTION FOR ITEMS WITH
PREFERENCE INDICES OF LESS THAN 200

X	f	fX
1. 111	3	3
2.		
3.		
4.		
5. 11111 11	7	35
6.		
7. 11111 11111 1	11	77
8.		
9. 11111 11111 11	12	108
10.		
11. 11111 11111 1	11	121
12.		
13. 11111 11111 11111 11111 11111 111	28	364
14.		
15. 11111 11111 11111 11111 11111 11111	30	450
16.		
17. 11111 11111 11111 11111 11111 11111 11111 1	36	612
18.		
19. 11111 11111 11111 11111 11	22	418
20.		
21. 11111 11111 1	11	231
22.		
23. 1111	4	92
24.		
25.		
$N = \sum f = 175$		$2511 = \sum fX$

TABLE 4

DISCRIMINATIVE INDICES DISTRIBUTION FOR ITEMS WITH
PREFERENCE INDICES OF 200 OR MORE

X	f	fX
1.		
2.		
3.		
4.		
5.		
6.		
7. 11	2	14
8.		
9. 11	2	18
10.		
11. 1111	4	44
12.		
13. 11111 11111	10	130
14.		
15. 11111 11111 11111	15	225
16.		
17. 11111 11111 11111 11111 11111 11111 11111 11111 111	43	731
18.		
19. 11111 11111 11111 11111 11111 1111	29	551
20.		
21. 11111 11111 11111 11111 11111 11111 1111	34	714
22.		
23. 11111	5	115
24.		
25. 1	1	25
$N = \sum f = 145$		$\sum fX = 2567$

CHAPTER V

THE SUPERVISORY PERFORMANCE REPORT

Construction

From the double entry table pairs of items selected for possible use in the Supervisory Performance Report had the same, or nearly the same, preference indices, but a wide variation in their discriminative indices. Two pairs, one favorable (high preference index), and one unfavorable (low preference index) were grouped to form one tetrad. Each of the pairs contained one item with a discriminative index above the middle 50 per cent of its group, and one item with a discriminative index below the middle 50 per cent of the group. Following this procedure 80 items met the requirements for selection.¹

The items were arranged in pairs on the basis of the preference index; the highest favorable pair was combined with the highest unfavorable pair, the next highest favorable pair was combined with the next highest unfavorable pair and so on until twenty tetrads were formed. Items within the tetrads were arranged in random order.²

Validation Criterion

The plan used in this study for securing an outside criterion by which to validate the forced choice Supervisory Performance Report was the ranking of all men in supervisory positions with the exceptions of

¹Appendix F, Table of Preference and Discriminative Indices for Forty Pairs of Items Selected for the Supervisory Performance Report.

²Appendix G, The Supervisory Performance Report.

the plant manager and the general superintendent. The names of the plant manager and the general superintendent were omitted through courtesy to their positions. The names of the supervisors were alphabetically arranged on a typed form and the conference groups were instructed to place a "1" in front of the name of the person that he considered the most outstanding supervisor. Next they were instructed to place a "46" in front of the name of the poorest, or weakest, supervisor (there were 46 names on the list). A "2" was placed in front of the name of the second best supervisor, and a "45" was placed in front of the name of the next poorest supervisor. This process was continued until the rater no longer felt that he was able to rank any other names on the list of supervisors.

At this point it was emphasized that possibly the poorest, or weakest supervisor in this specific plant might be better than the average supervisor in some other plant. At various times statements were made that all of the supervisors were satisfactory in this plant. The conference groups were assured at every phase of the project that the data was for research purposes only and that no record would be made of the results as pertaining to individuals. It may be mentioned that this was one of the critical stages of the plan of procedure, and much caution was necessary in the handling of these data even though there was no identification on the forms.

The sum of the rankings by the top management conference group divided by the number of rankings was calculated for each supervisor. Similar figures were secured for the other four groups of raters

combined, and for the total combined groups.¹ A distribution of rankings was made, and the rates were arranged in upper, middle, and lower thirds. For criterion purposes the names of supervisors placed in the upper, middle, and lower thirds by both the top management and the other four groups combined were selected. It is of interest to note that some supervisors placed in the upper third by one of the two groups ranked in the lower third by the other group. This phase is outside the scope of this study and no attempt is being made to investigate the problem.

Administration of the Supervisory Performance Report

The initial form of the Supervisory Performance Report was presented to the conference groups at the number four sessions. Each member of the first group, consisting of top management, rated one member within their group. Suggestions and criticisms as to clearness in meaning of the items, observability of the incidents of performance, and other comments relative to the selection of items were satisfactory. The average time used in completing the form was approximately ten minutes. At this conference meeting the official raters were asked to use the Supervisory Performance Report to rate the men for whom they were responsible relative to the current rating system. This assignment was too large to be completed during a one-hour session, and as a result the forms were left with the official raters to be completed within the

¹Appendix H, Ranking Distributions for 46 Supervisors. The order of rankings on this chart has no relationship to the alphabetically arranged list of names used in the process of ranking the supervisors.

week.

At the meetings with the remaining four supervisory conference groups the Supervisory Performance Report was presented for instructional purposes as to its use and for discussion of the selection of items. The conference members were invited to rate anyone on supervision within the plant including a self-rating, or no one at all if they chose. This rating required the signature of the rater and the name of the ratee; seventeen non-official ratings were obtained.

Scoring the Supervisory Performance Report

Each of the twenty tetrads contain two favorable items and two unfavorable items. The favorable item with a high discriminative index is allotted one point if it is most like a supervisor, and a minus one point if it is least like a supervisor. The unfavorable item with a high discriminative index is allotted a minus one if it is most like a supervisor and a plus one if it is least like a supervisor. The two items with low discriminative indices are not scored. With a scale such as this the predictive score, or the predetermined score can range from a minus forty to a plus forty.

The predictive score is based on the analysis of the replies to the items on the Check List. For an unknown criterion, however, items tend to change in their predictive values when they are combined with other items such as in the tetrad arrangement. As a means of discovering this change it is necessary to make an item analysis for the known criterion in the situation in which the forced choice Supervisory

Performance Report is being applied.¹ The final scoring key is the result of the analysis of the items relative to the three groups of supervisors: upper, middle, and lower thirds. These groupings are based on the rankings of overall supervisory competence. To be used as a criterion case it was necessary for a supervisor to be placed in the upper, middle or lower third by both the top management and the combined rankings of all other supervisors.

¹Appendix H, op. cit.

CHAPTER VI

CHECK STUDY

Selection of Experimental Group

Another plant within the corporation was selected for a check study. This plant is an old, well established organization employing approximately 2,000 supervisors. Forty-five persons above first line supervisory positions were selected from departments in which tools were used. The term "tools" in this situation refers to factory machinery and equipment as opposed to office equipment. At the first meeting with these industrial supervisors the purpose of the research project was explained. These supervisors were asked to cooperate in the revalidation of the forced choice Supervisory Performance Report¹ which was being developed in the press plant. The Check List² of 320 items was used to describe one person whom the supervisor had had the opportunity to observe during the past six months. A preference index and a discriminative index was calculated for each of the 320 items on the Check List. Because of the similarity of the results of the analysis of the items for the two industrial situations only one set of tabulations is presented.³

Administration and Analysis of Check List

The second meeting with this group of supervisors was devoted to

¹Appendix H, op. cit.

²Appendix C, op. cit.

³Appendix D, op. cit.

the administration of the Supervisory Performance Report. The following procedure was used for securing a validation criterion for the men being rated. The participating supervisors were numbered one, two, three, one, two, three and so on until the entire group had been assigned a number. The persons numbered "one" were asked to rate a supervisor whom they considered to be "above average" or one who rated in the upper third; the persons who were numbered "two" were asked to rate a supervisor whom they considered an "average" supervisor or one who rated in the middle third; the persons numbered "three" were asked to rate a supervisor whom they thought could be classified as "below average" or one that rated in the lower third. One of the undesirable characteristics of this procedure is the tendency of the rater to strive to rate the persons in terms of the overall criterion, that is, upper, middle, or lower third classification. However, under the circumstances this procedure was most practical. Because these supervisors were not participants in the research project from its inception they were not asked to identify themselves or the ratees. It was decided that if all identification was avoided better results would be obtained, and any feeling of anxiety on the part of the participants would be lessened.

Administration and Scoring of Supervisory Performance Report

The rating forms were scored first by using the predictive scoring key which was developed on the basis of indices of preference for or against an item, and discriminative indices of the items. A second

scoring key based on item analysis of the Supervisory Performance Report relative to the criterion groups was made.¹

Other studies are being made at this time within the corporation, but they will not be included in this report. One study is being conducted in the area of accounting supervision in a different plant from either of the two reported studies. Another check study is being conducted outside the corporation which includes all supervisors within that specific plant.

The reasons for not including the supplementary studies in this report is the tremendous amount of detail work which is necessary for the completion and reporting of such studies. The present study is a pilot from which other studies may evolve and enlarge.

¹Appendix I, Scores on Supervisory Performance Report.

CHAPTER VII

ANALYSIS OF SUPERVISORY PERFORMANCE REPORT SCORES

Scoring the Supervisory Performance Report

The statistical analysis of the data is a slow detailed procedure in which each item for each ratee for each of three criterion groups is tabulated.

TABLE 5

AN EXAMPLE OF THE ALTERNATIVE ANALYSIS
FOR A SPECIFIC ITEM*

Criterion Group	Most Characteristic				Least Characteristic			
	A	B	C	D	A	B	C	D
Upper.....	80	0	20	0	0	60	0	40
Middle.....	75	13	0	13	13	13	0	75
Lower.....	55	18	18	9	0	36	9	55
Total (U/M/L).....	210	31	38	22	13	109	9	170
Difference (U-L).....	25	-18	2	-9	0	24	-9	-15
**Percentage of Difference.....	12	-58	5	-42	0	25	-100	9

*In analyzing the responses to items the percentage of cases is used because the experimental population did not permit the use of the same number of cases in each criterion group. For example, in the upper group item A was most characteristic in 80 per cent of the cases.

**Percentage of difference equals number accepting alternative in upper group minus number of alternatives accepted in low group, divided by total accepting alternative.

Decisions concerning items to be scored in the final key are based upon the degree to which the items discriminate, or the degree of the difference between the frequency of the alternative response for the upper, middle, and lower groups used in the analysis.

The lower criterion group had an increase of 58 per cent over the upper criterion group in the use of item B as being most like their group. The upper group had an increase of 25 per cent over the lower group in the use of item B as being least like their group. Item A was used to describe upper group supervisors 80 per cent of the time, middle group supervisors 75 per cent of the time, and lower group supervisors 55 per cent of the time. The increase of upper group supervisors over lower group supervisors was only twelve per cent, therefore its power to discriminate is relatively weak. Item B was used to describe thirteen per cent of the middle group as least like them, and even though the increase of the lower group over the upper group was 100 per cent, rater resistance was evident because the item was used to describe only nine per cent of the total group of supervisors.

In this analysis some items discriminated when used as the most descriptive, but failed to discriminate when used as the least descriptive; the reverse of this one way discrimination also occurred in some instances. A scoring key based on this analysis produced a possible range of scores from minus 27 to plus 23 as compared to the possible range on the predictive key of minus 40 to plus 40.

Items selected for the scoring key were assigned weights as

follows: favorable items were assigned a plus one value when used as the most descriptive of the ratee, and a minus one value when used as the least descriptive; unfavorable items were assigned a minus one value when used as the most descriptive of the ratee, and a plus one value when used as the least descriptive of the ratee. Non-discriminative items were assigned a zero value when used to describe a person.

Validation

The weights of the predictors determined from the statistics of the press plant sample were tried out in another sample, the check study. The question arose here as to whether the samples were from the same universe. The press plant is relatively small, and as a working unit it differed from the plant in which the check study was conducted. However, in both situations industrial supervisors participated in the experiment. In the pilot study all levels of supervision within the plant participated while in the check study the participants ranked above first line supervisors, and all of whom supervised departments in which tools and machinery were used as opposed to office supervisors.

The forced choice type of performance report tends to increase in validity when the scoring key is developed on the basis of an analysis of the items for the situation in which it was developed. However, both the predictive key and the item analysis key was used in scoring the performance report for the check study group. A third key was developed by using items which discriminated in both the pilot study and the check study analyses. Therefore, a total of four scoring keys

were developed: first, the predictive scoring key based on the discriminative and preference indices calculated for responses to items on the Check List with unidentified criterion groups; second, the pilot study scoring key based on item analysis for identified criterion groups; third, the check study scoring key based on item analysis for three unidentified criterion groups, and; fourth, a scoring key based on items which discriminated in both the pilot study and the check study.

TABLE 6

DATA FROM PILOT STUDY SHOWING COMPOSITION OF GROUPS WHICH WERE IDENTIFIED ACCORDING TO VARIOUS CRITICAL SCORES ON SUPERVISORY PERFORMANCE REPORT FOR THREE KEYS

Scoring Key	Score Intervals	Per Cent of Total Group	Criterion Groups		
			Upper	Middle	Lower
Predictive Key	21-32	58	100	37	37
	15-20	27	0	63	17
	14-(-16)	18	0	0	46
Item Analysis Key	14-20	32	80	12	0
	7-13	34	20	37	46
	(-1)-6	21	0	50	18
	(-2)-(-15)	13	0	0	36
Combined Analyses Key	9-11	37	100	12	0
	3-8	34	0	63	45
	2-(-10)	19	0	25	55

From Table 6 it is observed that if the best upper cutting score on the predictive key is used approximately 58 per cent of the entire group is included. This identified group included all of the upper criterion group, 37 per cent of the middle criterion group, and 37 per

cent of the lower criterion group. If what appears to be the best lower cutting score is used, approximately eighteen per cent of the total group was included. The identified group included 46 per cent of the lower criterion group, and none of the upper and middle groups.

If the best upper cutting score on the item analysis key is used, approximately 32 per cent of the total group was identified. The identified group consists of 80 per cent of the upper group, twelve per cent of the middle group, and none of the lower criterion group. If the best lower cutting score is used thirteen per cent of the total group is included. The identified group consists of 36 per cent of the lower criterion group and none of the upper or middle groups.

Using the best upper cutting score for the combined analyses key 37 per cent of the entire group is included. Approximately 100 per cent of the upper group, twelve per cent of the middle group, and none of the lower criterion group were identified. If the best lower cutting score is used, nineteen per cent of the total group is included. Fifty-five per cent of the lower criterion group, 25 per cent of the middle group, and none of the upper criterion group were included.

The check study tabulations presented in Table 7 reveal similar results to the pilot study in relation to the upper and lower cutting scores for three scoring keys.

The best upper cutting score for the predictive key identified 23 per cent of the total group. Fifty-eight per cent of the upper group, and eight per cent of the middle group were identified. The best lower cutting score identified 23 per cent of the total group. Sixty-four

TABLE 7

DATA FROM CHECK STUDY SHOWING COMPOSITION OF GROUPS WHICH
WERE IDENTIFIED ACCORDING TO VARIOUS CRITICAL SCORES
ON SUPERVISORY PERFORMANCE REPORT FOR THREE KEYS

Scoring Key	Score Intervals	Per Cent of Total Group	Criterion Groups		
			Upper	Middle	Lower
Predictive Key	21-28	23	58	8	0
	15-20	32	34	52	9
	14-(-6)	22	8	32	27
	-7-(-27)	23	0	8	64
Item Analysis Key	15-24	37	100	0	9
	6-14	34	0	92	9
	-7-(-28)	29	0	8	82
Combined Analyses Key	8-12	32	91	0	0
	1-7	32	9	67	18
	0-(-5)	11	0	25	9
	(-6)-(-13)	25	0	8	73

per cent of the low group, and eight per cent of the middle criterion group were identified.

From the scoring based on item analysis the best upper cutting score identified 37 per cent of the total group which included 100 per cent of the high criterion group, and nine per cent of the lower criterion group. The best lower cutting score identified 29 per cent of the total group which included 82 per cent of the low group, and eight per cent of the middle criterion group.

If the combined analyses key is used the best upper cutting score included 32 per cent of the total group. Ninety-one per cent of the

upper criterion group, and none of the middle criterion group, or the low group were identified. If what appears to be the best lower cutting score is used 25 per cent of the total group will be identified. None of the upper criterion group will be included, but 73 per cent of the low criterion group, and eight per cent of the middle criterion group were included.

TABLE 8

DATA FROM PILOT STUDY AND CHECK STUDY COMBINED SHOWING
COMPOSITION OF GROUPS WHICH WERE IDENTIFIED ACCORDING
TO VARIOUS CRITICAL SCORES ON SUPERVISORY PERFORMANCE
REPORT FOR THE CROSS VALIDATION KEY

Score Intervals	Per Cent of Total Group	Upper	Middle	Lower
9-11	27	73	5	0
(-2)-8	50	27	85	41
(-13)-(-3)	23	0	10	59

If what appears to be the best upper cutting score is used 27 per cent of the total group will be identified. This group will include 73 per cent of the upper criterion group, five per cent of the middle criterion group, and none of the lower criterion group.

If what appears to be the best lower cutting score is used 23 per cent of the total group will be identified. Ten per cent of the middle and 59 per cent of the lower criterion groups will be included.

If an instrument is reliable, it measures something consistently, but an instrument may be internally consistent, or reliable, and not be

valid, or externally consistent unless it measures that which it is supposed to measure. For further evidence relative to the validity of the Supervisory Performance Report the following table of validity coefficients are presented.

The validity coefficients which are three times the standard error are considered significant. The highest correlation is between key two which is based on item analysis weights and rankings by top management. For this key the second highest correlation is with all levels of supervision. Key number three by rater number one has the highest correlation with top management rankings. The same key as used by rater number two did not have significant correlations. The highest correlations were secured on keys number two and number three with top management rankings when rated by immediate superiors or rater number one. Scores by the plant general superintendent or rater two on key number one have higher correlations with all three ranking criteria than scores by immediate superiors. Scores by immediate superiors on keys number two and three have higher correlations with all three ranking criteria than scores by the general superintendent on the same keys. Key number two has the highest correlation when used by immediate superiors. Scores by immediate superiors on keys number two and three have higher correlations with all three ranking criteria than scores by the general superintendent. Key number two has the highest correlation when used by immediate superiors possibly because these men are in positions to observe the performance of supervisors on the job. In this type of rating it is necessary that the

TABLE 9

VALIDITY COEFFICIENTS FOR PILOT STUDY: SPEARMAN RHO (P), ITS EQUIVALENT PEARSON (r),
AND THE STANDARD ERROR (SE) FOR SCORES ON SUPERVISORY PERFORMANCE REPORT

Scores on Three Keys by Official Raters	Rankings of Supervisors by:									
	Top Management				Supervision Below Top Management			All Levels of Supervision		
	N	P	r	SE	P	r	SE	P	r	SE
Key 1 Rater 1.....	46	.41	.426	.012	.21*	.219	.083	.30*	.313	.134
Key 1 Rater 2.....	44	.42	.438	.127	.41	.426	.126	.49	.507	.115
Key 2 Rater 1.....	46	.71	.727	.073	.38	.395	.127	.60	.618	.095
Key 2 Rater 2.....	43	.44	.461	.124	.34*	.356	.136	.54	.539	.110
Key 3 Rater 1.....	46	.57	.588	.087	.35*	.364	.130	.49	.507	.113
Key 3 Rater 2.....	42	.36	.374	.135	.35*	.364	.137	.18*	.188	.104

Key 1 is the predictive key
Key 2 is the item analysis key
Key 3 is the combined analyses key

Rater 1 is the official immediate superior
Rater 2 is the plant general superintendent

*Coefficients which are less than three times the standard error.

rater have a cross-section of what is most and least like the men being rated.

TABLE 10
TETRACHORIC CORRELATIONS (r) OF VALIDITY, AND THEIR
STANDARD ERROR (S.E.) FOR CHECK STUDY

Key	N	r	S.E.
Key 1	35	.95	.020
Key 2a	35	.95	.020
Key 3	35	.95	.020

Tetrachoric¹ correlations of validity in Table 10 were computed for the check study using the three keys: key 1, predictive key based on discriminative and preference indices, key 2a based on item analysis for the check study, and key 3 a combined key for the pilot and check studies. The criterion for the check study was unidentified and the raters were not necessarily the official raters. The true correlation coefficient for the three keys can be assumed to lie between .89 and 1.0.

Reliability

The split-half method which calls for the division of a test into two equal parts was used to obtain estimates of reliability. This

¹L. L. Thurstone, Computing Diagrams for the Tetrachoric Correlation Coefficient (Chicago: University of Chicago Bookstore, 1933).

method gives accuracy of the scores at the time the measurements are made, and from this it can be assumed that similar samples will be equally reliable under similar conditions.¹ Before applying the split-half method, it is necessary that the means of the two halves of the test are equal, and that the standard deviations are equal.² The Spearman rank-difference method was used for computing the reliability coefficient and by means of a conversion table³ the equivalent Pearson r was found.

$$\rho = 1 - \frac{6 \sum D^2}{N(N^2-1)}$$

Where D^2 = sum of the squared differences between ranks
 N = number of pairs of measurements

When five or more ranks were tied the DuBois correction formula was used to determine the rank to be assigned the ties:

$$R_c = \sqrt{M_r^2 - \frac{N^2 - 1}{12}}$$

Where R_c = corrected rank for ties
 M_r = mean of rank for ties
 N = number of ties

By means of the Spearman-Brown formula the reliability of the full length test was estimated:

¹J. P. Guilford, Fundamental Statistics in Psychology and Education (New York: McGraw Hill Book Co., 1942), p. 275.

²Palmer O. Johnson, Statistical Methods in Research (New York: Prentice Hall, Inc., 1949), p. 127.

³Guilford, op. cit., p. 229.

$$r_{11} = \frac{2r_{\frac{1}{2}\frac{1}{2}}}{(1 + r_{\frac{1}{2}\frac{1}{2}})}$$

Where r_{11} = self-correlation of a test in its full length
 $r_{\frac{1}{2}\frac{1}{2}}$ = self-correlation of one-half of the test

The standard error formula for the rho correlation is:

$$SE = \frac{1.04 (1 - P^2)}{\sqrt{N - 1}}$$

Where P = the rho correlation
 N = number of pairs of measures

Allowing a t ratio of 3.0 it can be assumed that the true correlation value lies somewhere between \pm three times the standard error [$\pm 3 (SE)$]. Also we can assume that a correlation coefficient is significant when it is at least three times as great as its standard error. A split-half correlation of reliability was calculated for the key based on item analyses for both the pilot study and for the check study.

TABLE 11
 SPLIT-HALF RELIABILITY CORRELATION COEFFICIENTS
 FOR THREE KEYS

Study	Key	P	r ₁₁	r	SE
Pilot Study:	Key 1	.594	.75	.765	.086
	Key 2	.88	.936	.945	.022
	Key 3	.87	.93	.935	.023
Check Study:	Key 1a	.87	.93	.935	.023
	Key 2a	.915	.95	.954	.017
	Key 3	.80	.89	.897	.033

From the above table the reliability coefficient with a known criterion for the full length rating form on the predictive key in the pilot study is .75 as calculated by the Spearman rank difference method, and .765 when the equivalent Pearson (r) is used. Allowing a t ratio of 3.0 the true correlation can be assumed to lie between .765 \pm 3 (.086) or between .50 and 1.00. Using the key based on item analysis the reliability correlation for the full length rating form is .936, and its r is .945. Allowing a t ratio of 3.0 we can assume that the true correlation lies between .945 \pm 3 (.022) or between .88 and 1.0.

The reliability correlation on the item analysis key for the check study with an unknown criterion is .95 for the rank order formula. The equivalent Pearson (r) is .954. Allowing a t ratio of 3.0 we can assume that the true correlation coefficient lies between .954 \pm 3 (.017) or between .90 and 1.0. On the predictive key the rank order correlation is .93 with an equivalent Pearson (r) of .935. We can assume that the true correlation when using this key lies between .935 \pm 3 (.023) or between .866 and 1.0. The combined analyses key has a rank order correlation of .80 with an equivalent Pearson (r) of .897. We can assume that the true correlation lies between .79 and .99.

TABLE 12

RANK ORDER INTERCORRELATIONS (P), THE EQUIVALENT PEARSON (r),
AND THE STANDARD ERROR (SE) FOR SIX VARIABLES

	A			B			C			D			E			F		
	P	r	SE															
1. Variable A: Ratings by immediate superiors on key ₁				.35	.36	.131 (N = 44)	.85	.86	.038 (N = 46)	.17	.18	.151 (N = 42)	.80	.81	.098 (N = 46)	.16	.17	.151 (N = 42)
2. Variable B: Ratings by general superin- tendent on key ₁	.35	.36	.131 (N = 44)				.50	.52	.111 (N = 44)	.59	.61	.098 (N = 42)	.25	.26	.142 (N = 44)	.59	.61	.098 (N = 42)
3. Variable C: Ratings by immediate superiors on key ₂	.85	.86	.038 (N = 46)	.50	.52	.111 (N = 44)				.42	.44	.125 (N = 42)	.82	.83	.046 (N = 46)	.24	.25	.146 (N = 42)
4. Variable D: Ratings by general superin- tendent on key ₂	.17	.18	.151 (N = 42)	.59	.61	.098 (N = 42)	.42	.44	.125 (N = 42)				.34	.36	.135 (N = 42)	.94	.94	.018 (N = 42)
5. Variable E: Ratings by immediate superiors on key ₃	.80	.81	.098 (N = 46)	.25	.26	.142 (N = 44)	.82	.83	.046 (N = 46)	.34	.36	.135 (N = 42)				.24	.25	.146 (N = 42)
6. Variable F: Ratings by general superin- tendent on key ₃	.16	.17	.151 (N = 42)	.59	.61	.098 (N = 42)	.24	.25	.146 (N = 42)	.94	.94	.018 (N = 42)	.24	.25	.146 (N = 42)			

CHAPTER VIII

SUMMARY AND CONCLUSIONS

Summary

The purpose of this study was to develop a forced choice type of performance report for industrial supervisors in a press plant within a large automotive corporation.

The average supervisor in the press plant was 39 years of age, married and had approximately two dependents; he had completed twelve years of formal education; he had approximately seventeen months service with the corporation, excluding nine supervisors who had an average of approximately fourteen years service with the corporation.

The press plant was selected for this experiment because of its size and its relative newness as compared with other plants within the corporation.

The plan of procedure for this experiment consisted of six major steps:

1. Collection of critical incidents of supervisory performance for successful and non-successful supervisors.
2. Preparation of a complete list of items of performance culled from the collected incidents of performance and the administration of this list to supervisors in the plant.
3. Determination of two indices for each item of performance, a preference index and a discriminative index.
4. Selection of pairs of items of performance such that they appear of equal value to the rater (preference index) but differ in their significance for success as a supervisor (discriminative index).

5. Assembling of pairs of selected items into tetrads.
6. Item selection against an external criterion and cross validation of the selected items.

Group interviews were used for the collection of critical incidents of on-the-job performances for successful and non-successful supervisors within the press plant. The interviews were conducted during the regular weekly conferences.

The first meetings with the supervisory conference groups, following preliminary arrangements for the study, were devoted to the collection of critical incidents of performance for both successful and non-successful supervisors. Each supervisor (the term "supervisor" in this study includes all men on supervisory positions from first line supervisors up to and including the plant general superintendent) in each of the five conference groups described two specific supervisors with whom he was well acquainted. Two forms with the following instructions were used for this purpose.

1. During the past six months have you had a supervisor demoted or transferred? Yes () No (). Check one reply. If your reply is "No", think of a supervisor whom you think should be transferred or demoted. This supervisor probably erred on numerous occasions, but what were the major things he did which caused you to reach this decision?
2. From among the supervisors you have worked closely with during the past six months think of the one whom you would rank first in the group as having done the best job of supervision. Undoubtedly, the supervisor ranked first has done many fine things. However, list the specific things he did which make him stand out in your mind as a superior supervisor.

The forms used for collecting data were unsigned and the rateses were unidentified. No pressure was exerted as to the length of the

descriptions; the conference groups were asked to write as much or as little as they chose.

From typed reproductions of the collected data an attempt was made to cull the items first for observability. Even though an attempt was made to secure items of performance on-the-job much of the data could not be classified as incidents of performance but were judgments based on performance. Second, the items were edited for universality. Little effort was made to change the original statements of contributing supervisors, but an attempt was made to eliminate items of a restrictive nature relative to the applicability to supervisors in general. The purpose as previously stated was to discover the differences in the performance of successful and non-successful supervisors.

From a total of 320 items a Check List was constructed. The items were arranged in random order, followed by a twenty-point ranking scale on overall supervisory competence.

At the second meetings members of the supervisory conference groups used the Check List to describe one supervisor with whom he was well acquainted within the plant. The rater was required to indicate on a five-point scale the degree to which the items on the Check List applied to the specific supervisor who was being rated. If the item described the supervisor all of the time, or always, a "5" was placed in the answer space preceding the item; if the item described the supervisor nearly all of the time, with few exceptions, a "4" was written in the answer space preceding the item; if the item described the supervisor about half of the time, average, a "3" was placed in

the answer space preceding the item; a "2" was placed in the answer space if the item described the person sometimes, occasionally; and finally, if the item described the person hardly ever, not at all, a "1" was written in the answer space. Half of the Check Lists were reversed in the order of page assembly, with the exceptions of the first and last pages, to aid in the reduction of the factor of fatigue.

The rater indicated on the twenty-point scale where the supervisor he was describing rated in overall job competence with respect to a representative group of supervisors within the plant. The average time required to complete the Check List was approximately forty minutes.

The Check Lists were collected and arranged in order of the overall criterion, and separated into upper, middle and lower thirds.

A preference index, an indication of the tendency of raters to mark people high or low on the given behavior item, and a discriminative index, a measure of the ability of items to discriminate between successful and non-successful supervisors, were computed for each item. Each item was plotted on a double entry table with preference indices along the ordinate and discriminative indices along the abscissa.

One hundred seventy-five items with a favorable tone ranged from 200 to 339 on the preference indices; one hundred forty-five items with an unfavorable tone ranged from zero through 192.

In this study the favorable items had a higher discriminative index mean than unfavorable items. The mean for the total number of items was 15.87, the mean for favorable items was 17.7, and for

unfavorable items the mean was 14.34. The discriminative indices of the middle 50 per cent of the favorable items ranged from 15 to 19 while the discriminative indices of the middle 50 per cent of the unfavorable items ranged from 13 through 17.

Pairs of items selected for the forced choice Supervisory Performance Report had the same, or nearly the same, preference indices but a wide range in discriminative indices. Each pair of favorable items (high preference indices) and each pair of unfavorable items (low preference indices) contain one item with a discriminative index above the middle 50 per cent of the group, and one item with a discriminative index below the middle 50 per cent of the group. Following this procedure 80 items met the requirements for selection.

The items were arranged in pairs on the basis of the preference index; the highest favorable pair was combined with the highest unfavorable pair, the next highest favorable pair was combined with the next highest unfavorable pair, and so on until the twenty tetrads were formed. Items within the tetrads had no logical sequence or order.

The plan used for securing an outside criterion by which to validate the forced choice Supervisory Performance Report was the ranking of all men in supervisory positions with the exception of the plant manager and the general superintendent. The names of the supervisors within the plant were arranged in alphabetical order on a typed form, and the conference groups were instructed to place a "1" in front of the name of the person that he considered the most outstanding

supervisor. Next, they were instructed to place a "46" in front of the name of the poorest, or weakest, supervisor (there were 46 names on the list). A "2" was placed in front of the name of the next best supervisor, and a "45" was placed in front of the name of the next poorest, or weakest, supervisor. This process was continued until the rater no longer felt that he was able to rank any other names on the list of supervisors. The sum of the rankings by the top management group divided by the number of rankings was calculated for each supervisor. Similar figures were secured for the other four groups of raters combined, and for the total combined groups.

A distribution of rankings was made, and the ratees were arranged in upper, middle and lower thirds. For criterion purposes the names of supervisors placed in the upper, middle, and lower thirds by both the top management and all other levels of supervision combined were selected. It is of interest to note that some supervisors placed in the upper third by one of the two groups ranked in the lower third by the other. No attempt was made to investigate this phase of the rating problem.

The initial form of the Supervisory Performance Report was presented to the conference groups at the number four sessions. The first group, consisting of top management, each rated one member within their own group for the purpose of learning how to use the rating form, and for suggestions and criticisms of the items. The average time required to complete one form was approximately ten minutes. During this conference the members were asked to rate the men for whom

they were responsible relative to the present rating system. This assignment was too extensive to be completed during a one-hour session, and as a result the forms were left with the official raters to be completed within the week.

At the remaining four supervisory conference meetings the Supervisory Performance Report was presented for instructional purposes as to its use, and for discussion of the selected items. The conference members were invited to rate anyone on supervision within the plant, including a self-rating or no one at all if they chose.

Each of the twenty tetrads in the Supervisory Performance Report contain two favorable and two unfavorable items. The favorable item with a high discriminative index is allotted one point if it is most like a supervisor, and a minus one if it is least like a supervisor. The unfavorable item with a high discriminative index is allotted a minus one point if it is most like a supervisor, and a plus one if it is least like a supervisor. The two items with low discriminative indices receive a zero score. With a scale such as this the predictive key, or the predetermined key, has a range of scores from minus forty to plus forty.

The predictive key is based on the analysis of the replies to the items on the Check List. However, items tend to change in their predictive values when they are combined with other items such as in the tetrad arrangement. As a means of discovering this change it was necessary to make an item analysis for the situation in which the forced choice Supervisory Performance Report was being applied. The

final scoring key is the result of the cross-validation of items relative to the criterion groups in both the initial study and the check study.

A check study for cross validation purposes was conducted in another plant within the corporation. The Check List of 320 items was administered to the participating groups in the same manner in which it was administered to the pilot study conferences. An analysis of the results of the responses to the items on the Check List produced similar preference and discriminative indices to the responses of the pilot study. The Supervisory Performance Report was administered to the check study groups and with an unknown criterion each supervisor completed one form. To avoid overloading either of the three criterion groups, that is upper, middle or lower thirds, the participants were numbered one, two, three, one, two, three, and so on until the entire group had been assigned a number. The number ones were asked to rate a supervisor whom they considered above average in overall supervisory competence, the number twos were asked to rate an average supervisor, and the number threes were asked to rate a poorer than average supervisor.

Item analysis for the check study was made, also the item analysis key for the pilot study was re-validated in terms of the criterion groups with the check study.

Conclusions

Because of the variations from one sample to another and because

of the limited number of cases on which this study is based it is not practical to make a definite prediction as to which of the three keys will consistently place the maximum number of upper-criterion supervisors in the group making scores above the apparently best upper-cutting score, or the maximum number of lower-criterion supervisors in the group making scores below the apparently best lower-cutting score. However, it is obvious from the tabulated data that any one of the three keys could be used to identify a considerable percentage of lower-criterion supervisors without including many of the upper-criterion supervisors, or to identify a considerable percentage of upper-criterion supervisors without including many of the lower-criterion cases.

The discrimination for upper-criterion supervisors in the pilot study is better than the discrimination for lower criterion supervisors. The supervisors in the press plant in which the pilot study was conducted were carefully screened and therefore the difference in performance between middle criterion cases and lower criterion cases is not as pronounced as in the check study.

The Supervisory Performance Report requires that the rater be in a position to make frequent observations of the ratee on the job, and much caution must be used in reporting performances as most and least descriptive.

It is recommended that training be given in the use of this type of supervisory rating, and that mechanical devices be used in facilitating scoring and further research.

Appendix A

Forms for Procurement of Critical Incidents of Performance for
Successful and Non-Successful Supervisors

Appendix B

Samples of Collected Data

STATEMENTS CONTRIBUTED BY SUPERVISORS OF CRITICAL
INCIDENTS OF SUCCESSFUL SUPERVISORY PERFORMANCE

He has the ability to organize. He is sociable to supervisors and subordinates. Helps subordinates with personal problems when asked. Believes in helping the other men in the plant in many respects.

He seems to be able to operate on his own without too much help from other sources. Has the respect of the men working under him. Is always willing to do what he can to help another man get his job done. He has a lot of job knowledge.

I like this supervisor because he has the ability to think for himself, he knows human relations. He has been very cooperative with me. He looks out for department cost, knows how to handle men.

He is very much respected by his men because they know him to be honest and fair, they also respect his ability and knowledge. He seems to consider the over-all picture and base his decisions on that. He talks with his men and seems to be able to lead them in a very good way. He has safety in mind. He gets along very well with other supervisors.

The one specific thing that comes to my mind about this man is cooperation. By that I mean when I needed some help about a new job, I would contact him and he would come over to my line and explain it to me. This made it easier for me to show the man, who was to operate said job, how it should be run and get as much production as possible.

The man in doing his job would give you a line-up on what was to be done, such as what production was going to run, and how much this would enable you to get your job done with the least trouble. This would make his duties and yours a lot less difficult.

The individual that I have in mind has done the best job of supervision because he is a man who cooperates fully with all of those in which he contacts. He is also a determined but a just man and has a very even disposition. He is a man whose production records equaled or surpassed any of the other shifts or of any individual reports and, last but not least, he gives recognition where due and considers every man as an equal.

I have one man in mind whom I would rate as a first in supervision. In his capacity he is required to do many things for many supervisors. No matter how busy he is when he is asked to do something he will listen to you and make a note of your request. If your request cannot be fulfilled immediately he will tell you when it can be done. In most cases the job is done immediately. In addition to this he is very pleasant no matter how much it inconveniences him to help someone.

The outstanding thing that comes to my mind about this supervisor is his organizing ability. During a period of excessive labor turnover and influx of new inexperienced help he made time to personally talk to and explain things to each new man. In this way he found out a little extra about each man and was able to fit him into the scheme of things and keep his department working to a high degree of efficiency.

He has a good background as a supervisor. Has experience and knowledge in methods and time-study, ability to control cost, and the past experience in development and handling men. He is better in presenting his cases to first line supervisors than to the rank and file.

He suggested many labor saving shortcuts. He constantly strives to improve housekeeping, he is always on the alert to improve quality. His attendance is very good. He get along very well with his fellow foreman. He enforces dicipline but get along well with employees. His initiative is good. He has a very good personality. He is comparatively well educated, and he is very concerned in the welfare of the corporation.

He would take time out to explain any job or operation fully and patiently without making you feel belittled or not smart. If he would make you a promise he would never forget to fulfill it no matter how big or small or how important the matter was. He would always find time to tell you how good of a job you have been doing.

This man to my mind indicated his superiority as a supervisor because the men working for him complained that he was a driver but still admitted that they respected his mechanical ability and could depend on his word. Even though some of his decisions would be against a particular man the group feeling was that he was fair and always called a spade a spade without any evasion or beating around the bush.

"John Doe" is an excellent supervisor, he knows his job thoroughly from both the theoretical and practical stand point. He gets along well with

men, whether superiors, equals, or subordinates. He is hard to muffle, never seems to rush, but gets things done. His statements can be relied upon, and if in rare cases he does not know, he says so but immediately checks up and gets the information.

Of all the years I have been with Chrysler Corporation, I have had the finest of supervisors to work for and worked with. I believe that in being fair with supervision and management they in turn have treated me fine and hope to continue so.

Tenacious. Ambitious. Minute job is done is looking for something else to do. Can see two sides to everything. Always coming up with suggestions with merit. Very careful in making decisions but not taking too long to make them, yet is willing to take chances. Has personality. Neat in appearance. Has knack of adjusting himself to other level, either up or down.

He always had time to stop and make a few comments. He understood and could at any time give the right instruction on how the job should be done. He was always on the job.

Has ability to get things done. Can designate responsibility. Has respect of his men.

He plans his daily work and has his supervisors submit daily reports and plans of theirs. He always has time for conference and special problems arising. He was cost conscience and evaluates changes on the basis

of their cost. He has an excellent memory and uses it.

Always on top of his job, good at instructing his men, has a way of getting his men to work without any trouble, excellent producer, and good housekeeper.

Is ambitious and has a high sense of loyalty both to the corporation and to those individuals he works for. Always makes an effort to do whatever jobs have been assigned to him. Can think out things and does. Manages to get along with those under his supervision but at the same time commands their respect. Has filled a void and results are apparent.

This supervisor had to start his own department, hire all new men and his personnel, and get all tools and machines in his department going as well as get production going, set up his office routine in the skilled division, and at the same time kept everybody happy.

He has the ability to listen to problems of employees and to make fair decisions. He is able to grasp new policies and contacts of the corporation and impart them to employees working under him. He is always willing to listen to suggestions from his employees.

This particular supervisor stands out in my mind because of his nonchalant mannerism. He gets along with his men because of his pleasant attitude towards his men, fairness in his dealings. In so doing he gets a lot of cooperation that is so necessary to the success of every unit. He can call on his group for an extra effort to attain a goal and depend on them to come through with flying colors.

Has developed and printed forms so that records on different types of machinery can be recorded, through this procedure definite maintenance plans can be scheduled. Has developed control testing equipment so that checking same will show the trouble with the least amount of lost time. He is continually trying to improve ways so that ideas can be grouped for the benefit of all.

I have a supervisor in mind which I think is an outstanding supervisor because he is willing to listen to anybody with an idea good or bad, and will not pass judgment until he has tried it out or weighed it very carefully. He is pleasant and tries to understand the men working for him.

The supervisor that stands out in my mind as outstanding is one who has used all the means at his command to lick certain jobs that seemed impossible to beat. One of the things done was to have hydromatic welders made to replace the hand welders that were being used. This not only saved money but did away with a lot of center pillars that were not properly made causing excess scrap.

This supervisor has kept up with all production standards, made production every day. Has seen to it that the quality of parts run are all passed by inspection. Runs his department with the least amount of men. Keeps his department clean and orderly. He is pleasant and tries to get along with every one he comes in contact with.

One man whom I have worked with recently, I believe is a superior supervisor, because he is on the job almost all of the time, and he knows the job well, he is always ready to assist other foremen in their jobs.

He is never too busy for a smile, a pleasant word, or to listen to the troubles of others. He has the good will and cooperation of all who work with or for him.

Shows no partiality or favoritism in promotions, job assignments etc. Takes an avid interest in every idea suggested by any member of working groups. Gives ideas or work suggestions an immediate fair trial and is quick to adapt them, if practical. Seems interested in safety, health, welfare, etc. of group members and makes frequent inquiries to determine same.

This man has taken a personal interest in the life of everyone of his men; one who has turned in a daily record ticket for a man for good work done; also the initiativeness of his men. He has also promoted the best of them and got in touch with the International Correspondence School, and with every one of his men so they can take a home course and learn more about his work which in turn would make his immediate supervisor's job easier for him.

Aggressive; under recent operating handicaps was able to manage his job completely and maintain schedules. Loyal; was foremost in the group in fighting for his men without ever criticizing either management or circumstances to the detriment of the company. Likeable but fair and just; his men are well trained and disciplined but think he is the best foreman in the plant. Level-headed; in recent weeks operations here have been exceedingly difficult. Has come through without any major mishap or retraction from established policy.

He knows where all parts and stock are for his department and if this stock must go to another department to be assembled he makes sure that it arrives there before stock in assembly department has been depleted. If he sees that a job must be done and has the manpower, even if it is not his job he will do it. When asked where certain stock is this foreman can tell you and will help get it to your department. This foreman treats men fairly, knows them in temperament and quality of workmanship; he completely knows his job.

Sense of fair play; in many cases where any reasonable doubt lies in his mind he gives the benefit to the worker. **Open-door Policy**; he is always willing to discuss employee problems, personal or otherwise. He is willing to accept responsibility for actions of his staff. Does not pass the buck. He is willing to take a chance on decisions he himself arrives at. He is not adverse to making his point known to higher management even though they are not in agreement with him.

This man has a way of handling men so that they like him. He has many times made production first on new jobs. He is depended on by other foremen. That is they ask his advice on things. He watches his new men and sorts them out before the probationary time is up. He adjusts his groups so there is harmony. Every man knows what his production is and what is expected of him. He works like he was working for himself, he watches for money saving ways, and moves men in a hurry in case of machine trouble. He is well liked by all. He has a way of reprimanding a man, and yet give him a pat on the back after it's over so the man holds no grudge. He just knows his job and men in general.

This man I am talking about all the men like him and they go all out to help him for he sets an example for them, always ready to help them in any way, you go to him for advice and he takes time out to help in any way he can.

Efficiently transferred men from on job to another when necessary because of machine or die failures. Always greets everyone with a warm smile. Always takes time to show men the best, easiest, and safest method of performing a given task. Has a prompt answer to any question regarding his work or will find the answer promptly.

The supervisor I would rank first in the group is one that has done a great deal to see that this plant has operated efficiently. He has seen to it that the machinery is in good running condition and repair at all times. He has done a good job in picking his men and assigning them to proper jobs, such as keeping certain machines running smoothly.

The supervisor in mind has in my estimation done a very good job in running his department and in handling men and problems that come up. He has on numerous occasions proved his ability to handle men. When they had to be discharged he did it in such a way that the men believed they had it coming and there was no fuss made. In running his department he is conscientious and really takes his work to heart even if it means staying a few hours after work to get the problem cleared up while it is still fresh.

The supervisor in mind, I have worked with for sometime and on



several occasions I have been with him when he was approached by someone wanting to work for him. He always listens to the man and leaves the feeling with him that he was interested in his welfare but never promises any thing until he has a chance to check on the ability and behavior of him. He also is very cooperative with fellow supervisors and helps them on their problems even when it means nothing to him either way. That is my idea of a good supervisor.

STATEMENTS CONTRIBUTED BY SUPERVISORS OF CRITICAL
INCIDENTS OF NON-SUCCESSFUL SUPERVISORY PERFORMANCE

He did not get along with his fellow foremen. He did not approach his employees properly. He did not keep his department orderly. He reported for work after having several drinks. He failed to assign his men immediately at the start of his shift. He bawled out employees in another department without trying to contact the supervisor of the employees involved.

This supervisor does not know how to instruct men, he gets mad at any one who does not get production. If a man does not do his work right he takes the tools out of his hand and shows him how to do the job right, he does not know anything about human relations.

He would not cooperate with the other supervisors to make both of their jobs easier. He would not listen to reason for some cooperation. He did not handle his men properly to get the right kind of work out of them. He would not take advice of any kind from anybody.

Inability to delegate authority to men under his supervision was evident through his doing work that his men should be doing. Does not seem to be able to recognize the fact that he is not the only member of the plant team, by not following established procedures.

He believed in only the one shift, he would not cooperate with the other shifts. He would not follow instructions passed on from his immediate supervisor. When trouble arose he would always go over his

immediate supervisor's head to find out instructions. Believed that without him the plant could not operate. He has no knowledge of cost, he spends too many man hours, he is not willing to accept responsibilities pertaining to housekeeping. He is not able to present his case.

The supervisor whom I will write about is higher in the plant than I. The one big fault I have found about him is this: the foreman may put a man on a job and instruct him in the easiest way to perform said job, and leave him on his own, it may be a half hour or so before the foreman goes back to this job, and gets a shock to see the job at a stand still with the machine stopped. He then reports to his supervisor that the man is gone only to find out that his superior had removed the man to another job and did not report to the foreman that he had done so.

In my opinion I do not know of any supervisor at the plant in which I work that deserves either a transfer or demotion. I do know that some have faults in the manner in which they operate. One in particular is the supervisor who constantly leaves at quitting time without first making sure that his work area is in a condition for the immediate production of the next or following shift. This same supervisor has many alibis and excuses but, of course, they do not help matters at all. These faults do not in my estimation mean a demotion or transfer is in order.

The man I have in mind is superior to most in mechanical things but in my mind is woefully weak in two major divisions of good supervision: he does not have the ability to gain the good will of his men. As an example on three different occasions I have sent men to him to work on jobs

he is supervising and they come back to me quite angry and asked what was the matter with the man. In each case I found they objected to his superior attitude and belittling manner. He becomes very friendly with two or three men and pays very little attention to the rest. This man has made deals with his men that if they would do so much work they would be finished for the night. This would lead to leaving the conveyor loaded for the next shift. He also had a habit of leaving notes of such a nature that would be nothing but a insult to the other foreman. Arriving on the job late, and not lining up his men soon enough. Not properly instructing his men on what to do.

He was very quick tempered, very determined to have his own way, unreasonable in many of his requests although at times he seemed to have a pleasing personality. He did not try to explain things to his men but seemed to prefer to write daily records on them for things he might have prevented. When a repair man called his attention to the fact that he was having his men do a job in an unsafe manner he became so angry that he took his badge off, pinned it on the repair man's shirt and told him to run the job.

The man I am referring to does not have a good approach. When he requires something from another supervisor he stops this person abruptly, and blurts out some statement that puts the other man on the defensive. In this way he does not gain anything that he was trying to accomplish, and only the disapproval of his superiors and fellow supervisors. In addition to this, when he is approached by his superior or fellow supervisor, he does not feel he has enough time to help him with his problems. This causes a bad feeling among supervisors.

Made no effort to do more than what he was told to do. When asked to do something more than he thought was necessary he always complained he did not have the men or where was he going to get the men. Did not cover his department as often as he should thereby leaving himself in a position of not knowing what was going on. Supervisor did not carry out instructions, as given by his department head, causing delay and extra work to complete job. Was unwilling to cooperate fully, if the work suggested or proposed did not meet with his approval.

Talks a far better job than he is capable of doing. Impressed with his title and prone to use it to cover his lack of ability. Has very little tact and practically no idea of how to cooperate. Has yet to learn that the men working for him is the sole reason for him being in his present position.

This man was undermining his superior by slighting remarks to his men. Would come up with ideas claiming they were his own when really they came from others. Could never see the others viewpoint. Let men tell him how to run his department, always took the easiest way out regardless of precedent he may be setting. Very high opinion of himself - that everybody else knew nothing.

This supervisor who was demoted for reasons as follows were lack of initiative, failure to follow given instructions, inability to cope with conditions arising on his particular department, and abnormal physical reactions.

We had one man that I believe found fault with almost every person he came in contact with to such an extent that his gossip caused a feeling of mistrust to everyone. This man was demoted on several occasions from desk head to clerk due to the fact that he worked for a fine supervisor, he would have been dismissed years ago.

Failed to accept responsibility. Did not adjust himself to duties required on job. Did not have a broad enough knowledge of the duties to be carried out. Could not take orders, became very nervous.

He was egotistical, wanting to show his authority. On several occasions he used his superiors name and position to inforce his statements without having first asked permission. At times he was gruff and uncivil to his associates and other department heads - failing to win their cooperation which ordinarily could have been secured. Commonly referred to as a "little Hitler" behind his back.

This supervisor was dismissed for following reasons: failure to follow most oral and written instructions; highly tempermental with tendency to become errational with employees; irregular working hours due to outside conditions; tendency to minimize other people's efforts and maximize personal efforts.

Did not cooperate with other supervisors. Did not comform to corporation procedure and policies. Did not carry out managment policies. Would argue violently when questioned about his mistakes.

"Joe Doakes" is a supervisor who is always in trouble. He over-estimates or under-estimates his material requirements. He seems to be in a fog. When he gets into trouble, he cannot work himself out of it, but seems to "let down," or throw up his hands helplessly until others, working twice as hard as they would normally be required to do, pull him out.

I have in mind a supervisor who came to us on a very good personal recommendation(his own). This particular foreman was going to systemize a job to a point where the stock would be packed in cars, and trucks at a speed that the conveyors would return to the production area empty, and stock men handling parts from the presses could hang the finished parts on the open hook instead of stacking it on the floor which would cause a second handling. After five months of boasting of his records with other corporations, favoritisms with certain employees, late and under the influence of liquor, he proved to be his worst enemy and left.

The supervisor that I think comes in this classification is the man who gripes about everything that happens, if he is told to do something he gripes, and the same applies when someone else says or does anything.

I can think of one supervisor who I believe should be transferred or demoted for several reasons. He does not cooperate too well with other foremen in trying to keep jobs running. He appears to have very little interest in the company. Also he is slow in making decisions that is, he can not seem to decide immediately what he wants to do about certain jobs or how to run them.

Educational qualities not sufficient to properly perform present work assignments. Not enough practical experience in type of work now supervising. Natural nervous temperament of individual not suited to endure rigors of job being day by day greatly aggravated. Statement three being caused partly by reasons of statements one and two.

My supervisor, if he wants to be a good one, should issue his orders through his immediate supervisors instead of going out to the men himself and having the men do things that the supervisor of his own department knows nothing of and be forced to go to his own men and find out what the big boss told him to do, disregarding what plans you had made for this particular man to do.

Fails to give detailed information and complete data on new installations, or move jobs. Makes snap decisions. Lack of follow-up on repair work between all shifts. Trial and error methods used on many occasions; insufficient personnel to take care of all necessary prints, estimates, and equipment.

This will hold true for more than one supervisor. All supervisors have a period to meet schedules. Cost of producing parts are overlooked, more men are used than is necessary and handling material is one thing that is very often overlooked.

All good supervisors have to watch production that they meet their production standards. Keep good housekeeping. Watch the quality of their work.

Lack of interest in job, would wander off for excessive lengths of time. Lack of follow-up, in need of constant instruction, not consistent in action. Would meet usual occurrences but arrive at different conclusions. Allowed too much of his personal troubles to interfere with his job. A bad time at home was always noticeable in the manner he operated in the shop. Unable to handle men, would allow things to get out of hand and then find he could not get matters satisfactorily settled.

Supervisor was fired for not being cooperative. Threatened the gate watchman, also said to his immediate supervisor if he could lay his hands on a gun he would shoot him. Also called him names. Outcome was he got fired. This type of man should not have been put on this kind of work if he was properly analyzed.

The supervisor I have in mind makes it a point to encroach upon the functions and duties of the other department heads. On an occasion where a paper transaction was concerned he questioned whether or not it was properly handled. Rather than be content with questioning the transaction he took it upon himself to make further inquiries on this matter, which concerned him in no way, in an effort to have it handled in the manner he desired. This is a continual fault of this supervisor and causes much unrest and disgust among the other members of supervision.

The supervisor in question knows his work, but has no confidence whatsoever in the ability of other men whom he must contact every day, or several times a day. Naturally the other men do not feel that they know it all but they do not think their ideas are all bad. On several

occasions he has been known to pass his judgment and have it followed, afterwards finding his judgment was not what he expected it to be, then tell the man who was in direct charge of the job that this or that should have been done.

Failed to report machine breakdowns promptly, failed to follow up repair jobs to determine when these jobs were completed, and reprimanded the wrong persons for faulty performances.

The supervisor I have in mind has no initiative, it seems that every time he has a difficult situation he cannot solve it by himself, namely the flow of parts to be transferred to other plants seem to confuse him. He cannot get the proper tools for his job without help from the other supervisors, when he does get them he loses them after the job is completed. He cannot line up his work properly, therefore, it takes twice as long to do the job. He cannot instruct his men to do a job properly.

He hasn't the ability to follow through on a job and always tries to push his duties on someone else or always passing the buck. When there are jobs to be done he always takes the easy way out and seems afraid to assume responsibility maybe because he is afraid of being censured.

This man is hated by every man that works for him. He is for himself alone. He has lied and cheated to hold his own. He just does not have the tact it takes to handle men. He is a back slapper as far as his superiors are concerned. This is how he holds his own. At one time he

was a big wheel in the union. He let that drop when he could get something better on the company's side. He would drop them as quickly if he could in any way benefit by it.

The supervisor I am talking about gives some of his men all the hard jobs and never changes off until it is brought to his attention by other men. I believe he should see these things himself.

He does not know at all times how much stock there is in his department, or how much stock the other foreman has. He does not cooperate with other foremen. He is not interested in quality, only production. Another department may use his stock but he does not have any interest in any department outside his own. He does not know his men, their names or temperament. He does not know where to place his men to get more work from them. He should spend more time in his department and other departments that use his stock.

Appendix C

Check List

SUPERVISORY CHECK LIST

Select one supervisor in this plant that you know real well, and indicate to what extent each of the following statements describes this particular supervisor. If a statement describes him all of the time, or always, place a "5" on the blank line in front of the statement; if the statement describes him practically all of the time with few exceptions place a "4" in front of the statement; if it describes him about half of the time place a "3" in front of the statement; if it describes him sometimes, only occasionally, rarely place a "2" in front of the statement; and if it describes him hardly ever or not at all place a "1" in front of the statement. Mark every statement.

- 5 - All of the time, always.
- 4 - Practically all of the time, few exceptions.
- 3 - About half of the time, typical.
- 2 - Sometimes, only occasionally, rarely.
- 1 - Hardly ever, not at all.

- ___ 1. Lost tools after job was completed.
- ___ 2. Questioned handling of paper work of other men.
- ___ 3. Failed to make follow-ups.
- ___ 4. Blamed others for failure on the job after insisting that his own ideas were to be used.
- ___ 5. Production high, quality low.
- ___ 6. He gave hard jobs to some men and never changed until it was brought to his attention.
- ___ 7. Took the easiest way out regardless of the precedent he might be setting.
- ___ 8. Lied and cheated.
- ___ 9. Failed to check on stock in his department.
- ___ 10. Could not take orders - became nervous.
- ___ 11. Brought his personal troubles to the job.
- ___ 12. Failed to properly instruct his men.
- ___ 13. Did not line up his work properly.

- ___ 14. Threatened other men.
- ___ 15. Failed to report breakdowns immediately.
- ___ 16. Did not know his men by name.
- ___ 17. Did not conform to corporation procedure and policies.
- ___ 18. Made no effort to do more work than he was told to do.
- ___ 19. Pleasant attitude toward his men.
- ___ 20. Made provisions for his men to study prepared materials related to their jobs.
- ___ 21. Checked on safety, health and general welfare of the group.
- ___ 22. When he called on his men for extra efforts they came through with flying colors.
- ___ 23. Accepted responsibility for actions of his group.
- ___ 24. He found time to tell a person that he was doing a good job.
- ___ 25. Department clean and orderly.
- ___ 26. Took time to show men the best method of performing a job.
- ___ 27. Made an effort to do whatever job that was assigned to him.
- ___ 28. Helped other supervisors even though it meant nothing to his own job.
- ___ 29. Never too busy to smile.
- ___ 30. Listened to suggestions from his employees.
- ___ 31. Made snap judgements.
- ___ 32. He bawled out employees in another department without contacting their supervisor.
- ___ 33. He made his point known to his superiors even though they were not in agreement.
- ___ 34. Answered promptly any questions concerning the job.
- ___ 35. Made production everyday.
- ___ 36. He took tools out of a man's hand and showed him how to do a job.

- ___ 37. Claimed other people's ideas for his own.
- ___ 38. Unable to decide what he wanted to do about certain jobs or how to run them.
- ___ 39. Stayed overtime in order to get important problems cleared up.
- ___ 40. Removed a man from a job without reporting it to the man's immediate supervisor.
- ___ 41. Irregular working hours.
- ___ 42. Used least amount of men to run his department.
- ___ 43. His attendance was good.
- ___ 44. He was unable to present his case.
- ___ 45. Left notes to other foremen which made them mad.
- ___ 46. He did not follow instructions passed on to him from his immediate supervisor.
- ___ 47. Complained about lack of men when asked to do additional work.
- ___ 48. He fulfilled most requests immediately or explained why it could not be fulfilled.
- ___ 49. On the job almost all of the time.
- ___ 50. Gave his men information on what was to be done.
- ___ 51. He kept up with all production standards.
- ___ 52. Repeated personal problems of the other people.
- ___ 53. Wrote daily records of his men.
- ___ 54. Bragged about his record with other companies.
- ___ 55. He observes his men and sorts them out before the probationary time is up.
- ___ 56. Came to work under the influence of liquor.
- ___ 57. Passed on to his men any new policies and contacts of the corporation.

- ___ 58. He failed to accept responsibility for good housekeeping.
- ___ 59. Took his badge off and pinned it on another person when his attention was called to lack of safety devices.
- ___ 60. He went over the head of his immediate supervisor to get instructions.
- ___ 61. Greeted everyone with a smile.
- ___ 62. His production record equaled or surpassed any of the other shifts.
- ___ 63. He enforced discipline without trouble with his men.
- ___ 64. The quality of parts run in his department are passed by inspection.
- ___ 65. Let his men tell him how to run his department.
- ___ 66. He checked up and got information when he did not know the answers.
- ___ 67. He got mad at men who did not get production.
- ___ 68. Came to work late.
- ___ 69. Took time for conferences and special problems.
- ___ 70. Arrived on the job late.
- ___ 71. He kept his department working to a high degree of efficiency.
- ___ 72. Griped about almost anything.
- ___ 73. He failed to assign his men immediately at the start of the shift.
- ___ 74. If he did not know the answer to a question he said so.
- ___ 75. Always came up with suggestions.
- ___ 76. Could delegate responsibility.
- ___ 77. Turned in a daily record ticket for a man for good work done.
- ___ 78. Used more men than necessary.

- ___ 79. Listened to anyone with an idea to present.
- ___ 80. He always had time to stop and make a few comments.
- ___ 81. Got things done.
- ___ 82. Assigned men to jobs best suited to their skills.
- ___ 83. Argued when questioned about mistakes.
- ___ 84. Always ready to help other foremen.
- ___ 85. He fulfilled any promise he made.
- ___ 86. He wasted man hours.
- ___ 87. He knows his men and his job.
- ___ 88. He was always on the job.
- ___ 89. Never too busy to listen to troubles of others.
- ___ 90. He reported for work after having had several drinks.
- ___ 91. Good at instructions.
- ___ 92. Managed his job and maintained schedule under operating handicaps.
- ___ 93. Failed to cover his department as often as necessary.
- ___ 94. He was pleasant no matter how inconvenienced he was in helping others.
- ___ 95. Helped subordinates with personal problems when asked.
- ___ 96. Kept machinery in repair at all times.
- ___ 97. Moved men in a hurry in case of machine trouble.
- ___ 98. Failed to follow most oral and written instructions.
- ___ 99. He was gruff to his associates and department head.
- ___ 100. His statements could be relied upon.
- ___ 101. Failed to line up his men immediately.
- ___ 102. Neat in appearance.
- ___ 103. He took time to explain any job or operation.

- ___104. Left at quitting time without making sure that his work area was in a condition for the production of following shift.
- ___105. Made "bargains" with men concerning production.
- ___106. Did not follow established procedures.
- ___107. Failed to instruct his men on what to do.
- ___108. Good housekeeper.
- ___109. Even though he was busy he listened to requests and made a note of them.
- ___110. His production record equaled or surpassed that of any other supervisor.
- ___111. His men go all out to help him.
- ___112. Listened to ideas suggested by his men.
- ___113. He would not accept advice from anyone.
- ___114. His stock moved to another department before the supply is depleted.
- ___115. Never seemed to rush but got things done.
- ___116. Becomes friendly with some men and pays little attention to the others.
- ___117. He took time to talk and explain things to each new man.
- ___118. Slow in making decisions.
- ___119. He did not keep his department orderly.
- ___120. "Fights" for his men without criticising management or circumstances.
- ___121. He suggested many labor saving short cuts.
- ___122. Did work that his men should be doing.
- ___123. Found information relating to the job if he did not know the information.
- ___124. Listened to problems of employees.

- ___125. Did not carry out instructions as given by his superior.
- ___126. Found fault with nearly everyone he contacted.
- ___127. Did not explain things to his men.
- ___128. He strived to improve housekeeping.
- ___129. He used his superior's name and position to enforce his statements without having first asked permission.
- ___130. He helped another man with his job when he was contacted.
- ___131. Ideas suggested get a tryout.
- ___132. Had favorites among employees.
- ___133. Pleasant with everyone he contacts.
- ___134. Transferred men to other jobs immediately when necessary because of machine or die failures.
- ___135. Discharged men in such a manner that dissention was avoided.
- ___136. Planned his daily work.
- ___137. His men know what his production is and what is expected of him.
- ___138. Developed and printed forms so that records on different types of machinery can be recorded.
- ___139. Lost his temper easily.
- ___140. He gave recognition where it was due.
- ___141. Looked out for department cost.
- ___142. Discussed employee problems, either personal or otherwise.
- ___143. Other foremen contact him for assistance.
- ___144. Failed to follow instructions.
- ___145. Withholds judgment on an idea until it has been tried out.
- ___146. Made alibis and excuses.
- ___147. He helped his men in any way he was called on.
- ___148. Did not know where to place his men to get the most work from them.

- ___149. Needed help on flow of parts to be transferred to other plants.
- ___150. Could not get tools for his job without help from other supervisors.
- ___151. Reprimanded the wrong person for faulty performances.
- ___152. Left job for long periods of time.
- ___153. Needed constant instruction.
- ___154. Took the easy way out when there were jobs to be done.
- ___155. Pushed his duties on someone else.
- ___156. Greeted people with a friendly gesture.
- ___157. Checked each step of the operation thoroughly when manufacturing troubles occurred in his department.
- ___158. Swore at employees.
- ___159. Became nervous when things went wrong.
- ___160. Smoothed things over when people get irritated.
- ___161. Orders from superiors obeyed willingly.
- ___162. Made suggestions as to change in methods to reduce cost and improve quality.
- ___163. Praised good work.
- ___164. Work out-put below normal.
- ___165. Made appropriate remarks to his men when they had misfortunes.
- ___166. Did inaccurate work.
- ___167. Quickly praised a man for a job well done.
- ___168. Assisted on other jobs when asked.
- ___169. Pleasant and cheerful.
- ___170. Tried to do the job alone.
- ___171. He said "Will you?" not "You must."
- ___172. Was absent when needed.

- ___173. Called his men by name.
- ___174. Organized plans for training workers.
- ___175. Others asked him for assistance.
- ___176. Got angry when suggestions were made.
- ___177. Refused to accept his superior's assistance.
- ___178. Unsystematic - had no plans.
- ___179. Irritated people when he directed them.
- ___180. Quality of work exceptionally high.
- ___181. Made remarks that offended others.
- ___182. Irritated people by his manner of approach.
- ___183. Accomplished little.
- ___184. His men told him of their personal difficulties.
- ___185. Kept cool when emergencies arose.
- ___186. Asked for opinions of others.
- ___187. Got all the facts before making recommendations.
- ___188. Discussed plans frequently with superiors.
- ___189. Was undisturbed if overtime was necessary.
- ___190. Blamed others for any mistakes.
- ___191. Got reports in on time.
- ___192. Criticized constructively without antagonizing.
- ___193. Accepted responsibility for his own mistakes.
- ___194. Late for work.
- ___195. Was courteous with others.
- ___196. Did a great deal of work.
- ___197. Made many mistakes.
- ___198. Wasted time joking and laughing with other supervisors.
- ___199. Kept essential records.

- ___200. Would not listen to suggestions.
- ___201. Was familiar with main trouble-spots in his department.
- ___202. People asked to be transferred from his department.
- ___203. Lost time in dealing with details of the job.
- ___204. Sent workers to factory hospital whose health might endanger others.
- ___205. Physically unable to meet demands of job.
- ___206. Met engagements promptly.
- ___207. Unimportant details took much of his time.
- ___208. Appeared friendly and relaxed with visiting superiors.
- ___209. Complained about everything.
- ___210. Encouraged and accepted suggestions from workers.
- ___211. Voluntarily kept his own department clean and orderly.
- ___212. Made decisions before getting the facts.
- ___213. Controlled his temper.
- ___214. Made decisions quickly.
- ___215. Presented worthwhile ideas.
- ___216. Talked a great deal.
- ___217. Loafed on the job.
- ___218. Failed to consider others in his plans.
- ___219. Wasted time.
- ___220. Needed help from superiors on new jobs.
- ___221. Inadequate knowledge of job.
- ___222. Clearly imparted information to others.
- ___223. Took suggestions and instructions without getting disturbed.
- ___224. Was discontented.
- ___225. Depended on other people to get his work done.

- ___226. Forgot things frequently.
- ___227. Lacked knowledge of company.
- ___228. Rush jobs made him angry.
- ___229. Remembered his men by name.
- ___230. Failed to get others to work for him.
- ___231. Got all necessary materials ready for conferences.
- ___232. Considered other person's point of view.
- ___233. Seldom planned work ahead.
- ___234. Got all the facts before making decisions.
- ___235. Watched the clock.
- ___236. Helped others with work when possible.
- ___237. Could not express himself well in speech.
- ___238. Had to be continually prodded.
- ___239. Good routine worker.
- ___240. Reprimanded his men in public.
- ___241. Employees objected to being transferred from his department.
- ___242. Delegated work to others wisely.
- ___243. Mixed records up.
- ___244. Could not work while someone watched.
- ___245. Changed situations when safety was involved.
- ___246. Made his department plans fit in with other departments.
- ___247. Lost his temper.
- ___248. Other supervisors told him of their problems.
- ___249. Failed to do necessary routine duties.
- ___250. Avoided talking with his men.
- ___251. Kept accurate records.
- ___252. Well acquainted with department routine.

- ___253. Would not rely on his own opinions.
- ___254. Listened to constructive criticism of conditions in his department.
- ___255. Would not take time out to chat with other supervisors.
- ___256. Did not plan or lay out work effectively.
- ___257. Tangled with others on his own level.
- ___258. Maintained control in obtaining production and enforcing regulations.
- ___259. Explained company policies to employees.
- ___260. Made clear-cut assignments.
- ___261. Would not listen to suggestions.
- ___262. Kept many things going at once without getting lost.
- ___263. Other departments were held up because of his unfinished work.
- ___264. Blamed others for any mistakes.
- ___265. Wasted materials.
- ___266. Admitted he was wrong when evidence was presented.
- ___267. Tried to have reasons for orders understood.
- ___268. Made excuses for his errors.
- ___269. Made promises beyond his authority.
- ___270. Kept work out-put up to schedule.
- ___271. Always asked for advice.
- ___272. Failed to follow-up reported department errors.
- ___273. Did not mingle with other supervisors.
- ___274. Repeated rumors.
- ___275. Repeatedly told tales of his personal experiences.
- ___276. Gossiped on the job.
- ___277. Made same mistakes after instructions as before.

- ___278. Let other people do the talking.
- ___279. Wasted manhours.
- ___280. Claimed credit for work done by others.
- ___281. Gave up when things got difficult.
- ___282. Got angry quickly.
- ___283. Visited with others more than the average.
- ___284. Could not express himself in writing.
- ___285. Constantly knocked company policies.
- ___286. On hand when needed.
- ___287. Failed to delegate authority with responsibility.
- ___288. Made suggestions as to change in methods to reduce cost and improve quality.
- ___289. Talked lots without listening to others.
- ___290. Left job before quitting time.
- ___291. Employees discussed their problems with him.
- ___292. Bragged about his accomplishments.
- ___293. Made useful suggestions.
- ___294. Accepted superiors' ideas for consideration.
- ___295. Slow in learning new methods.
- ___296. Argued with people.
- ___297. Left job unfinished.
- ___298. Slow in making decisions.
- ___299. Avoided arguments.
- ___300. Needed suggestions as to training methods.
- ___301. Postponed making decisions.
- ___302. People avoided him.
- ___303. Had to be told to correct obvious mistakes.

- ___304. Carried tales which caused trouble.
- ___305. Made promises beyond his authority.
- ___306. Scheduled operations in advance.
- ___307. Made no excuses when things went wrong.
- ___308. Offered suggestions for improvements.
- ___309. Bawled people out.
- ___310. Grouchy.
- ___311. Passed unpleasant jobs to others.
- ___312. Gave the appearance of being contrary.
- ___313. Played favorites.
- ___314. Got discouraged easily.
- ___315. Well informed on topics of general interest.
- ___316. Became rattled easily.
- ___317. Would not accept responsibilities.
- ___318. Frequently tried to do too much.
- ___319. Kept busy at work.
- ___320. Was too meek to speak up.

If this supervisor were compared with a group of twenty supervisors ranging from lowest to highest with respect to his total over-all job competence where would you rate him? Circle your answer.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

Appendix D

Tabulations of Check List Analysis

Frequency Distribution of Responses to Items on Check List

Item	Upper Third (13 Cases)					Middle Third (11 Cases)					Lower Third (12 Cases)					* P.I.	* D.I.
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5		
1	12	1	-	-	-	9	2	-	-	-	6	4	2	-	-	31	11
2	7	5	1	-	-	2	4	1	4	-	3	5	3	1	-	81	7
3	7	4	-	2	-	1	5	4	1	-	3	3	3	3	-	122	9
4	7	6	-	-	-	7	2	2	-	-	2	1	4	4	1	103	19
5	8	3	-	1	1	4	3	1	2	1	1	2	6	3	-	133	17
6	9	2	1	1	-	3	6	2	-	-	2	1	4	1	4	125	15
7	11	2	-	-	-	4	4	1	2	-	2	-	5	3	2	114	21
8	12	1	-	-	-	11	-	-	-	-	8	3	-	1	-	19	7
9	10	2	-	1	-	3	6	2	-	-	2	4	5	-	1	92	17
10	12	1	-	-	-	7	2	1	1	-	4	3	5	-	-	58	15
11	12	1	-	-	-	8	3	-	-	-	6	2	2	1	1	47	11
12	8	5	-	-	-	4	6	-	1	-	-	4	3	3	2	114	17
13	12	1	-	-	-	3	6	2	-	-	2	3	2	3	2	97	19
14	11	1	1	-	-	11	-	-	-	-	5	2	3	1	1	50	11
15	10	3	-	-	-	6	5	-	-	-	4	5	2	1	-	56	11
16	8	4	1	-	-	8	1	2	-	-	5	4	2	1	-	61	5
17	10	3	-	-	-	8	3	-	-	-	3	4	3	1	1	64	13
18	12	1	-	-	-	7	4	-	-	-	3	1	4	3	1	75	17
19	-	-	-	4	9	2	2	1	1	5	3	3	4	1	1	258	21
20	3	-	-	7	3	2	2	6	1	-	6	3	-	3	-	172	13
21	-	-	2	7	4	1	1	4	4	1	4	5	1	2	-	219	19
22	1	-	1	6	5	2	-	2	5	2	5	4	-	3	-	222	17
23	1	-	-	3	9	2	1	-	4	4	6	1	4	-	1	242	21
24	1	1	-	5	6	2	2	2	4	1	3	4	2	1	2	225	15
25	1	-	1	7	4	-	1	7	2	1	3	4	4	1	-	219	19
26	1	-	-	7	5	-	2	2	4	3	2	2	5	1	2	261	17
27	1	-	-	-	12	1	-	-	4	6	3	1	5	1	2	239	19
28	1	-	1	4	7	-	1	1	5	4	3	4	2	1	2	264	15
29	1	1	1	5	5	3	2	2	1	3	3	3	5	-	1	211	17

* P.I. (Preference Index)
 D.I. (Discriminative Index)

Frequency Distribution of Responses to Items on Check List

Item	Upper Third (13 Cases)					Middle Third (11 Cases)					Lower Third (12 Cases)					P.I.	D.I.
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5		
30	-	-	1	3	9	-	1	-	7	3	-	7	4	-	1	278	21
31	6	4	2	1	-	2	5	2	2	-	1	4	2	5	-	136	9
32	9	3	-	1	-	9	2	-	-	-	6	2	2	2	-	56	7
33	1	1	1	4	6	-	4	3	2	2	2	2	3	3	2	244	9
34	-	-	-	5	8	1	-	-	5	5	3	4	3	1	1	275	21
35	-	-	-	11	2	1	-	3	7	-	4	3	3	2	-	231	21
36	3	5	2	-	3	4	4	3	-	-	5	3	2	2	-	122	9
37	2	1	-	-	-	9	2	-	-	-	2	4	2	2	2	69	19
38	10	3	-	-	-	6	4	1	-	-	3	3	3	3	-	75	13
39	2	-	2	2	7	1	1	3	1	5	5	3	2	1	1	228	13
40	12	1	-	-	-	8	2	1	-	-	4	3	2	2	1	61	15
41	10	1	-	1	1	9	1	-	1	-	8	-	3	1	-	58	7
42	-	1	-	3	9	1	2	2	3	3	4	3	1	3	1	253	15
43	-	-	-	1	12	1	-	-	2	8	-	1	4	4	3	339	15
44	13	-	-	-	-	6	4	1	-	-	2	5	2	2	1	69	21
45	10	2	-	-	1	10	1	-	-	-	6	4	1	1	-	44	9
46	11	1	-	-	1	8	2	-	1	-	4	5	2	1	-	61	15
47	8	4	1	-	-	4	5	2	-	-	1	-	4	3	4	133	21
48	-	-	-	3	10	-	1	2	5	3	2	6	2	-	-	275	21
49	1	-	-	2	10	1	-	-	3	7	1	1	4	5	1	308	17
50	-	-	-	2	11	1	-	1	5	4	2	-	6	2	2	303	17
51	-	-	-	6	7	1	-	3	5	2	2	5	4	1	-	253	23
52	11	-	-	2	-	9	2	-	-	-	5	3	2	2	-	58	11
53	1	1	5	3	3	2	-	5	2	2	4	2	5	-	1	200	9
54	10	3	-	-	-	8	2	1	-	-	3	2	2	2	3	86	15
55	-	-	-	1	12	-	2	1	5	3	-	7	3	1	1	283	21
56	13	-	-	-	-	11	-	-	-	-	12	-	-	-	-	0	11
57	-	1	-	3	9	1	1	2	1	6	3	3	1	3	2	278	13
58	12	1	-	-	-	4	5	2	-	-	4	5	1	1	1	67	15
59	13	-	-	-	-	11	-	-	-	-	10	2	-	-	-	6	5
60	10	3	-	-	-	7	3	-	1	-	5	5	1	1	-	53	9
61	1	-	-	7	5	-	1	1	5	4	3	3	3	1	2	264	17

Frequency Distribution of Responses to Items on Check List

Item	Upper Third (13 Cases)					Middle Third (11 Cases)					Lower Third (12 Cases)					P.I.	D.I.
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5		
62	-	-	-	8	5	1	2	4	4	-	3	3	4	1	1	233	21
63	-	-	-	5	8	1	2	-	5	3	1	5	4	2	-	264	21
64	-	-	-	6	7	2	1	1	5	2	1	2	4	1	4	281	15
65	13	-	-	-	-	10	1	0	0	0	6	2	1	2	1	42	13
66	-	1	-	1	11	-	1	-	4	6	-	5	3	2	2	306	17
67	4	7	1	1	-	6	5	-	-	-	2	4	2	3	1	106	9
68	12	1	-	-	-	9	1	-	-	1	11	1	-	-	-	19	1
69	1	1	-	6	5	-	1	3	6	1	2	5	3	1	1	239	17
70	13	-	-	-	-	9	2	-	-	-	10	1	-	-	1	19	5
71	-	-	-	3	10	-	1	1	8	1	4	-	5	3	-	275	19
72	10	2	1	-	-	10	1	-	-	-	3	3	3	3	-	64	13
73	12	-	-	1	-	7	2	2	-	-	1	6	4	1	-	72	21
74	1	-	-	4	8	1	1	-	7	2	2	3	3	1	2	272	15
75	1	-	-	4	8	-	1	3	3	4	3	2	5	-	2	275	19
76	-	-	-	4	9	1	1	1	6	2	2	3	3	2	2	278	17
77	2	1	1	5	4	5	5	-	-	1	8	2	2	-	-	136	17
78	10	3	-	-	-	6	5	-	-	-	2	1	4	5	-	89	19
79	-	-	-	3	10	-	1	-	7	3	1	4	3	2	2	297	17
80	1	2	2	3	5	1	3	2	3	2	2	3	2	4	1	64	7
81	-	-	-	5	8	1	-	-	6	4	1	2	6	1	2	295	19
82	-	-	-	6	7	-	1	2	7	1	-	5	3	3	1	278	17
83	9	3	-	1	-	6	4	-	1	-	4	4	-	4	-	81	9
84	-	-	-	1	12	-	1	-	4	6	1	5	4	1	1	300	21
85	-	-	-	7	6	-	1	1	7	2	1	5	3	1	2	275	19
86	10	3	-	-	-	9	1	1	-	-	1	5	3	2	1	75	17
87	-	-	-	2	11	-	1	-	5	5	-	4	3	3	2	314	17
88	-	-	-	5	8	-	1	-	5	5	-	2	3	4	3	319	11
89	1	2	-	6	4	-	3	-	7	1	2	4	3	3	-	231	13
90	13	-	-	-	-	11	-	-	-	-	12	-	-	-	-	0	1
91	-	-	-	4	9	-	1	1	5	4	-	4	4	3	1	297	17
92	-	-	-	5	8	-	-	4	5	2	1	5	5	-	1	269	23

Frequency Distribution of Responses to Items on Check List

Item	Upper Third (13 Cases)					Middle Third (11 Cases)					Lower Third (12 Cases)					P.I.	D.I.
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5		
93	10	3	-	-	-	5	4	2	-	-	2	3	3	3	1	92	15
94	1	-	-	7	5	-	2	1	6	2	2	5	3	2	-	244	19
95	-	-	1	2	10	-	1	1	5	4	1	6	3	-	2	283	19
96	1	-	-	5	7	1	-	3	4	3	1	2	5	3	1	272	15
97	-	-	-	4	9	-	1	1	4	5	1	5	3	2	1	289	19
98	12	1	-	-	-	5	5	1	-	-	3	4	3	2	-	67	17
99	11	2	-	-	-	9	2	-	-	-	4	3	5	-	-	47	13
100	1	-	-	3	9	-	3	-	2	6	1	5	3	3	-	272	17
101	12	1	-	-	-	5	5	1	-	-	1	6	3	2	-	72	21
102	-	-	-	5	8	1	-	-	6	4	1	1	3	5	2	217	11
103	-	-	-	4	9	1	-	2	4	4	1	5	4	-	2	281	21
104	9	3	-	-	1	9	2	-	-	-	2	5	4	-	1	72	13
105	11	-	2	-	-	8	3	-	-	-	9	3	-	-	-	28	7
106	10	2	-	-	1	6	4	1	-	-	3	5	4	-	-	69	15
107	13	-	-	-	-	6	5	-	-	-	3	5	3	1	-	53	19
108	-	-	1	5	7	-	-	4	3	4	2	3	6	-	1	269	21
109	-	-	-	7	6	-	1	2	6	2	4	4	1	3	-	253	19
110	-	-	-	4	9	1	1	4	5	-	2	4	5	1	-	247	23
111	-	-	-	7	6	-	1	1	5	4	3	6	1	-	2	264	21
112	-	-	-	4	9	-	-	1	7	3	2	5	3	-	2	283	21
113	9	3	-	1	-	6	3	2	-	-	2	3	6	-	1	89	15
114	1	1	1	7	4	2	1	3	4	1	4	3	3	1	1	214	17
115	2	-	2	5	4	1	3	3	2	2	3	3	4	1	1	211	13
116	9	3	-	1	-	8	2	1	-	-	1	5	4	1	1	83	15
117	1	-	1	2	9	-	1	1	5	4	3	5	2	-	2	263	17
118	10	3	-	-	-	4	6	1	-	-	2	5	3	2	-	78	15
119	9	3	1	-	-	6	3	2	-	-	2	3	4	1	2	94	13
120	2	-	-	7	4	5	4	-	1	1	2	5	2	-	3	192	15
121	-	1	1	8	3	-	1	5	4	1	5	-	6	-	1	228	21
122	8	4	-	-	1	5	5	1	-	-	6	3	1	1	1	75	5

Frequency Distribution of Responses to Items on Check List

Item	Upper Third (13 Cases)					Middle Third (11 Cases)					Lower Third (12 Cases)					P.I.	D.I.
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5		
123	-	-	-	5	8	-	-	2	5	4	1	4	4	2	1	261	15
124	-	-	1	3	9	-	1	-	7	3	3	2	5	1	1	278	19
125	10	1	-	2	-	6	5	-	-	-	1	3	4	2	2	103	17
126	10	3	-	-	-	9	2	-	-	-	3	3	5	1	-	58	13
127	10	3	-	-	-	4	5	-	2	-	2	8	1	1	-	75	15
128	-	-	1	5	7	1	-	5	2	3	2	3	3	1	3	269	15
129	12	1	-	-	-	8	3	-	-	-	4	8	-	-	-	33	15
130	-	-	-	5	8	-	1	2	5	3	3	1	5	1	2	244	19
131	-	-	1	8	4	-	1	2	6	2	3	1	5	1	2	264	17
132	10	3	-	-	-	7	4	-	-	-	2	4	2	3	1	78	15
133	-	-	-	5	8	-	1	-	6	4	3	2	3	2	2	289	17
134	1	-	-	6	6	1	1	2	4	3	2	5	3	2	-	244	19
135	2	-	-	6	5	1	-	4	4	2	-	3	4	3	2	261	15
136	-	-	-	5	8	-	1	-	8	2	2	2	6	-	2	283	21
137	-	-	-	4	9	1	-	-	6	4	1	2	3	4	2	306	13
138	3	2	-	6	2	-	3	1	6	1	6	4	1	-	1	181	13
139	8	5	-	-	-	9	2	-	-	-	2	2	4	4	-	81	17
140	-	-	-	5	8	-	2	1	5	3	-	7	3	1	1	272	21
141	-	-	1	4	8	-	1	1	5	4	-	6	4	1	1	253	19
142	1	1	1	5	5	1	1	1	6	2	1	5	4	1	1	242	15
143	1	-	2	5	5	-	1	4	4	2	3	4	2	-	3	244	13
144	11	2	-	-	-	8	2	1	-	-	2	5	5	-	-	58	17
145	-	1	2	4	6	2	3	1	4	1	1	3	7	1	-	228	17
146	9	4	-	-	-	7	3	1	-	-	1	2	3	4	2	103	19
147	-	-	-	4	9	1	1	-	5	4	1	-	8	1	2	300	19
148	12	-	-	1	-	8	3	-	-	-	1	5	1	5	-	78	21
149	8	-	1	4	-	7	4	-	-	-	2	4	4	2	-	100	15
150	11	1	1	-	-	8	2	1	-	-	3	2	5	1	1	72	15
151	11	2	-	-	-	8	3	-	-	-	2	7	3	-	-	50	17
152	11	2	-	-	-	10	1	-	-	-	4	7	1	-	-	34	13
153	12	1	-	-	-	9	2	-	-	-	3	5	3	1	-	47	17

Frequency Distribution of Responses to Items on Check List

Item	Upper Third (13 Cases)					Middle Third (11 Cases)					Lower Third (12 Cases)					P.I.	D.I.
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5		
154	13	-	-	-	-	7	4	-	-	-	2	6	3	1	-	53	21
155	12	1	-	-	-	10	1	-	-	-	3	6	2	1	-	42	17
156	-	-	1	3	9	-	1	-	4	6	1	5	3	1	2	294	17
157	-	-	-	3	10	1	1	1	2	6	3	5	2	1	1	272	21
158	12	-	-	-	1	5	5	1	-	-	9	2	1	-	-	42	7
159	10	3	-	-	-	5	5	1	-	-	3	3	2	3	1	83	13
160	-	-	-	8	5	-	1	-	8	2	1	7	4	-	-	256	25
161	-	-	-	2	11	1	-	-	7	3	-	5	2	2	3	306	15
162	-	-	2	2	9	-	2	3	3	3	2	5	3	-	2	258	17
163	-	-	-	6	7	-	2	1	4	4	1	7	2	1	1	267	21
164	10	3	-	-	-	5	5	1	-	-	-	6	4	1	1	86	19
165	-	-	1	4	8	1	1	2	6	1	-	5	5	1	1	264	19
166	12	1	-	-	-	10	1	-	-	-	1	4	6	-	1	61	21
167	-	1	-	6	6	-	2	3	2	4	2	4	4	-	2	258	19
168	-	-	-	4	9	1	-	1	4	5	2	4	2	1	3	292	17
169	-	-	-	7	6	-	1	-	5	5	2	4	2	1	3	289	17
170	4	4	-	2	3	1	6	2	2	-	4	1	2	4	1	164	9
171	1	-	-	5	7	-	3	2	5	1	1	6	3	1	1	244	19
172	11	2	-	-	-	7	4	-	-	-	5	2	5	-	-	50	11
173	-	-	1	4	8	-	2	-	4	5	2	1	4	3	2	294	13
174	-	1	1	8	3	1	2	5	2	1	7	3	-	-	2	200	19
175	-	-	5	5	3	-	2	3	5	1	5	5	1	1	-	206	21
176	13	-	-	-	-	10	1	-	-	-	4	3	4	1	-	42	17
177	11	2	-	-	-	10	1	-	-	-	6	5	1	-	-	28	9
178	11	2	-	-	-	7	3	1	-	-	1	2	7	2	-	81	19
179	12	1	-	-	-	7	2	1	-	1	2	3	4	2	1	83	19
180	-	-	-	9	4	-	1	1	7	2	2	5	3	-	2	261	21
181	11	2	-	-	-	6	5	-	-	-	3	4	4	1	-	61	15
182	12	1	-	-	-	8	3	-	-	-	2	5	3	2	-	58	19
183	12	1	-	-	-	7	3	-	1	-	2	4	5	1	-	67	19
184	-	1	4	6	2	-	1	5	5	-	2	5	3	-	2	222	13

Frequency Distribution of Responses to Items on Check List

Item	Upper Third (13 Cases)					Middle Third (11 Cases)					Lower Third (12 Cases)					P.I.	D.I.
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5		
185	-	-	-	5	8	-	1	-	6	4	-	6	3	2	1	289	19
186	-	5	1	6	1	-	3	4	3	1	4	4	2	1	1	189	11
187	-	-	-	7	6	-	1	2	6	2	2	4	2	3	1	242	17
188	-	1	3	6	3	-	1	1	7	2	2	2	3	2	3	264	7
189	2	-	-	4	7	1	3	2	1	4	2	4	4	-	2	211	17
190	10	3	-	-	-	10	-	1	-	-	2	3	5	2	-	67	14
191	1	-	-	5	7	-	3	1	4	3	-	3	3	3	3	283	13
192	-	1	2	4	6	1	2	1	6	1	1	5	5	1	-	236	17
193	-	-	-	5	8	1	1	-	4	5	1	3	5	1	2	289	19
194	11	2	-	-	-	9	1	-	1	-	7	4	1	2	3	33	7
195	-	-	-	4	9	1	1	-	3	6	-	5	3	2	2	297	17
196	-	-	-	2	11	-	1	1	4	5	1	3	4	1	3	308	17
197	9	4	-	-	-	7	4	-	-	-	2	7	2	1	-	61	13
198	12	1	-	-	-	7	4	-	-	-	4	7	1	-	-	39	15
199	-	-	-	6	7	-	2	1	4	4	1	3	4	1	3	289	17
200	10	1	-	1	1	5	4	1	1	-	3	6	3	-	-	81	17
201	-	-	-	3	10	1	1	-	4	5	1	3	2	3	3	306	13
202	11	1	-	1	-	8	2	-	1	-	4	1	5	2	-	72	13
203	10	3	-	-	-	7	2	1	1	-	2	6	3	1	-	69	15
204	-	1	1	3	8	1	1	1	3	5	2	4	1	3	2	275	11
205	12	1	-	-	-	9	1	-	1	-	7	1	3	1	-	42	9
206	1	-	-	5	7	-	2	-	6	3	-	4	5	2	1	275	19
207	11	2	-	-	-	6	5	-	-	-	1	4	6	1	-	72	19
208	-	-	-	1	12	-	2	-	5	4	1	4	6	-	1	267	23
209	10	3	-	-	-	8	3	-	-	-	3	3	3	1	2	72	13
210	-	-	-	6	7	-	1	1	3	6	2	2	6	-	2	267	21
211	-	-	-	6	7	1	1	2	3	4	2	2	6	-	2	272	21
212	8	4	1	-	-	5	4	1	1	-	3	2	4	2	1	97	13
213	-	1	-	6	6	-	2	-	5	4	1	3	4	1	3	283	15
214	-	-	1	9	3	-	2	1	7	1	2	4	2	3	1	253	15
215	-	-	1	9	3	-	-	3	7	1	2	6	3	-	1	244	21

Frequency Distribution of Responses to Items on Check List

Item	Upper Third (13 Cases)					Middle Third (11 Cases)					Lower Third (12 Cases)					P.I.	D.I.
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5		
216	2	4	5	2	-	3	3	2	3	-	1	2	4	5	-	169	7
217	13	-	-	-	-	10	1	-	-	-	3	8	1	-	-	275	19
218	9	3	-	-	1	6	4	-	1	-	1	3	4	4	-	103	17
219	13	-	-	-	-	9	2	-	-	-	5	3	3	1	-	39	15
220	5	6	-	1	1	-	4	1	1	5	-	5	5	2	-	175	13
221	11	2	-	-	-	6	4	-	1	-	2	4	4	1	1	78	17
222	-	-	-	7	6	-	3	-	4	4	2	5	3	1	1	261	21
223	-	-	-	5	8	-	2	1	7	1	1	3	7	1	-	256	23
224	7	6	-	-	-	6	4	1	-	-	1	5	1	5	-	94	13
225	11	2	-	-	-	9	2	-	-	-	1	5	5	1	-	61	19
226	12	1	-	-	-	6	5	-	-	-	2	8	2	-	-	50	19
227	11	2	-	-	-	9	2	-	-	-	4	4	3	1	-	47	13
228	7	6	-	-	-	4	5	1	-	1	3	4	4	1	-	97	11
229	-	-	1	7	5	-	1	-	7	3	1	1	6	2	2	289	15
230	10	3	-	-	-	5	5	-	1	-	2	5	2	3	-	81	15
231	-	-	1	8	4	1	2	1	6	1	1	4	4	1	2	253	17
232	-	-	-	5	8	1	1	3	4	4	1	4	3	2	2	292	17
233	10	-	-	1	2	3	3	2	2	1	2	2	4	3	1	142	17
234	-	-	1	7	5	-	1	1	6	3	3	4	4	1	-	253	21
235	10	1	-	1	1	10	1	-	-	-	5	3	4	-	-	56	13
236	-	-	-	4	9	-	1	1	2	7	2	4	3	1	2	295	19
237	8	1	1	3	-	5	5	-	-	1	5	3	1	3	-	97	5
238	13	-	-	-	-	9	2	-	-	-	3	2	5	2	-	56	19
239	1	-	1	2	9	-	1	1	4	5	2	5	2	3	-	269	17
240	10	3	-	-	-	7	3	-	1	-	6	3	2	-	1	56	7
241	2	1	-	8	2	1	-	3	3	4	8	3	1	-	-	192	19
242	-	-	-	6	7	-	1	-	9	1	1	5	4	1	1	272	21
243	12	1	-	-	-	7	3	1	-	-	3	3	6	-	-	58	17
244	12	1	-	-	-	9	1	1	-	-	5	5	2	-	-	36	13
245	-	1	-	4	8	-	1	-	5	5	2	2	5	2	1	286	17
246	-	-	-	3	10	-	1	-	3	7	2	6	2	-	2	292	21

Frequency Distribution of Responses to Items on Check List

Item	Upper Third (13 Cases)					Middle Third (11 Cases)					Lower Third (12 Cases)					P.I.	D.I.
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5		
247	11	2	-	-	-	9	1	-	1	-	3	2	3	3	1	75	15
248	-	2	5	4	2	-	2	4	5	-	2	5	3	2	-	206	11
249	13	-	-	-	-	6	4	1	-	-	2	5	5	-	-	58	21
250	8	4	1	-	-	8	1	-	2	-	1	5	3	3	-	92	13
251	-	-	-	5	8	-	1	1	5	4	2	3	3	2	2	289	17
252	-	-	-	-	13	-	1	-	3	7	1	2	4	2	3	328	19
253	7	2	-	2	2	3	6	-	1	1	2	4	3	2	1	136	11
254	-	-	-	1	12	1	-	-	6	4	1	5	3	2	1	295	21
255	4	2	3	3	1	5	4	2	-	-	3	4	2	3	-	128	5
256	13	-	-	-	-	3	5	1	1	1	2	5	2	3	-	89	21
257	7	6	-	-	-	9	2	-	-	-	4	3	3	1	1	67	11
258	-	-	-	4	9	-	1	1	7	2	-	7	3	2	-	275	21
259	-	-	-	7	6	-	1	-	5	5	3	3	4	-	2	278	21
260	-	-	-	5	8	-	1	-	7	3	2	2	5	2	1	286	19
261	10	1	-	-	2	3	3	-	-	-	2	2	6	2	-	89	19
262	-	-	-	3	10	1	1	1	4	4	1	5	4	1	1	278	21
263	10	3	-	-	-	4	7	-	-	-	1	6	3	2	-	78	17
264	10	3	-	-	-	9	2	-	-	-	1	3	5	3	-	75	17
265	11	2	-	-	-	6	5	-	-	-	3	5	4	-	-	56	15
266	1	-	-	4	8	1	1	1	3	5	1	5	3	1	2	272	17
267	1	1	-	6	5	1	2	1	6	1	2	3	5	2	-	233	17
268	11	2	-	-	-	7	3	1	-	-	2	2	4	3	1	83	17
269	13	-	-	-	-	10	1	-	-	-	4	4	4	-	-	36	17
270	-	-	-	5	8	-	1	-	6	4	1	5	4	1	1	283	21
271	4	7	-	1	1	1	5	3	1	1	4	4	2	1	1	131	5
272	9	-	3	1	-	4	7	-	-	-	1	4	4	3	-	103	15
273	9	1	2	-	1	5	4	-	2	-	1	3	5	3	-	114	17
274	12	1	-	-	-	9	2	-	-	-	3	6	3	-	-	42	17
275	4	8	-	-	1	3	4	3	1	-	1	3	5	1	2	136	15
276	12	1	-	-	-	8	2	1	-	-	5	2	3	2	-	53	13
277	10	3	-	-	-	5	6	-	-	-	2	6	4	-	-	64	15

Frequency Distribution of Responses to Items on Check List

Item	Upper Third (13 Cases)					Middle Third (11 Cases)					Lower Third (12 Cases)					P.I.	D.I.
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5		
278	4	-	7	2	-	2	4	4	1	-	3	4	3	2	-	142	9
279	12	1	-	-	-	8	1	-	1	1	3	3	4	2	-	72	17
280	12	1	-	-	-	9	2	-	-	-	2	1	6	2	1	72	19
281	12	1	-	-	-	9	2	-	-	-	3	5	3	1	-	47	17
282	13	-	-	-	-	8	3	-	-	-	2	4	4	2	-	58	21
283	11	2	-	-	-	7	4	-	-	-	2	5	5	-	-	103	17
284	8	4	-	1	-	5	3	3	-	-	2	3	5	2	-	97	13
285	10	3	-	-	-	8	3	-	-	-	3	3	5	1	-	61	13
286	-	-	-	4	9	1	2	-	2	6	1	6	1	2	2	283	17
287	10	2	-	-	1	7	4	-	-	-	3	5	3	1	-	67	15
288	-	-	1	6	6	1	2	3	1	4	2	6	3	-	1	242	21
289	10	3	-	-	-	5	4	2	-	-	1	5	6	-	-	78	17
290	12	1	-	-	-	8	1	1	-	1	7	5	-	-	-	36	9
291	-	-	5	5	3	-	1	1	5	4	1	8	1	-	2	247	19
292	12	1	-	-	-	7	3	-	1	-	3	3	2	2	2	78	17
293	1	-	1	6	5	-	2	2	4	3	1	7	2	-	2	247	17
294	-	-	-	5	8	-	1	1	6	3	-	3	5	3	1	295	17
295	13	-	-	-	-	5	5	1	-	-	1	8	3	-	-	58	23
296	11	2	-	-	-	7	4	-	-	-	5	3	2	2	-	53	11
297	13	-	-	-	-	7	4	-	-	-	3	6	2	1	-	47	19
298	10	3	-	-	-	4	6	1	-	-	-	6	6	-	-	81	19
299	1	1	-	6	5	1	2	1	3	4	-	8	1	1	2	283	17
300	11	2	-	-	-	3	7	-	1	-	1	5	4	2	-	86	19
301	9	3	-	1	-	4	7	-	-	-	2	4	4	1	1	89	13
302	12	1	-	-	-	8	3	-	-	-	3	3	5	1	-	56	17
303	13	-	-	-	-	5	6	-	-	-	1	6	-	-	-	67	23
304	13	-	-	-	-	10	1	-	-	-	4	4	4	-	-	36	17
305	13	-	-	-	-	7	3	1	-	-	1	6	4	1	-	61	23
306	3	-	-	6	5	-	3	2	5	1	2	4	5	-	1	228	19
307	3	4	-	2	4	2	6	1	1	1	1	8	2	-	1	158	13
308	-	-	2	5	6	-	2	2	4	3	1	4	5	-	2	264	17

Frequency Distribution of Responses to Items on Check List

Item	Upper Third (13 Cases)					Middle Third (11 Cases)					Lower Third (12 Cases)					P.I.	D.I.
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5		
309	6	5	2	-	-	4	6	1	-	-	2	5	3	2	-	94	7
310	10	3	-	-	-	10	1	-	-	-	3	4	2	3	-	58	13
311	11	2	-	-	-	5	6	-	-	-	1	4	6	1	-	75	19
312	11	2	-	-	-	6	5	-	-	-	4	1	6	1	-	64	15
313	12	1	-	-	-	10	1	-	-	-	3	4	3	2	-	50	17
314	11	1	-	1	-	7	4	-	-	-	2	6	2	2	-	67	17
315	-	-	1	10	2	-	1	2	6	2	-	6	3	3	-	256	17
316	12	1	-	-	-	5	6	-	-	-	3	4	3	2	-	64	17
317	13	-	-	-	-	7	2	-	2	-	1	7	4	-	-	64	23
318	-	6	3	3	1	-	2	3	4	2	2	5	1	2	2	206	7
319	-	-	-	3	10	-	-	2	6	3	1	1	4	4	2	311	15
320	11	2	-	-	-	9	2	-	-	-	4	6	2	-	-	39	13

Appendix E

Work Sheet for Analysis of Check List Items

Item # 21

Sample Work Sheet for Tallying Responses to Items on Check List

Category	1	2	3	4	5	
Weight (w)	0	1	2	3	4	N = 36
Upper Third (U)			11 2	11111 11 7	1111 4	n = 13
Middle Third (M)	1 1	1 1	1111 4	1111 4	1 1	n = 11
Lower Third (L)	1111 4	11111 5	1 1	11 2		n = 12
f	5	6	7	13	5	N = 36
fw	0	6	14	39	20	$\sum fw = 79$
U-L	4	5	1	5	4	$\sum (U-L) = 19$

Preference Index = $\frac{\sum fw(100)}{N} = \frac{79(100)}{36} = 219.44 = 219$

Discriminative Index = $\sum (U-L) = 19$

Appendix F

Table of Preference and Discriminative Indices for
Forty Pairs of Items Selected for the Supervisory Performance Report

Distribution of Preference Indices and Discriminative Indices
for 40 Pairs of Items Selected for the Supervisory Performance Report

Favorable Items					Unfavorable Items				
No. of Pairs	P.I.	Diff.	D.I.	Diff.	No. of Pairs	P.I.	Diff.	D.I.	Diff.
1.	306-300	6	13-21	8	1.	136-133	3	11-21	10
2.	306-300	6	13-21	8	2.	122-114	8	9-21	12
3.	294-292	2	13-19	6	3.	106-103	3	9-19	10
4.	283-281	2	13-21	8	4.	94- 89	5	7-19	12
5.	281-283	2	15-21	6	5.	83- 89	6	13-21	8
6.	275-278	3	11-21	10	6.	81- 81	0	9-19	10
7.	272-272	0	15-21	6	7.	81- 81	0	7-19	12
8.	272-272	0	15-21	6	8.	75- 75	0	5-19	14
9.	269-269	0	15-23	8	9.	75- 78	3	13-21	8
10.	264-264	0	15-23	8	10.	72- 72	0	13-21	8
11.	264-264	0	7-21	14	11.	67- 67	0	11-23	12
12.	261-261	0	15-21	6	12.	64- 69	5	13-21	8
13.	261-261	0	15-21	6	13.	61- 64	3	13-23	10
14.	253-256	3	15-23	8	14.	61- 61	0	13-23	10
15.	253-256	3	15-25	10	15.	58- 58	0	11-23	12
16.	244-242	2	13-21	8	16.	56- 58	2	11-19	8
17.	231-233	2	13-21	8	17.	51- 58	2	7-21	14
18.	228-228	0	13-21	8	18.	47- 51	4	11-19	8
19.	211-206	5	13-21	8	19.	44- 42	2	9-17	8
20.	200-200	0	9-10	10	20.	28- 33	5	7-15	8

Note: Tetrads are formed by corresponding pairs from the two groups of items.

Appendix G

Supervisory Performance Report

Supervisory Performance Report

Name of Person
Being Rated _____

Last,

First

Middle

Plant _____

Dept. _____

Title _____

Date _____

Name of Rater _____

Last,

First

Title of Rater _____

You are asked to report the performance of this supervisor, and you are responsible for making a report that you are willing to submit as your best judgment.

In order that the person being rated may receive a fair report it is necessary that the rater be in a position to frequently observe the ratee on the job.

This report has been reviewed by: Name _____

Title _____

Date _____

DEPARTMENT OF INDUSTRIAL EDUCATION
Division of Supervisory Training
Chrysler Corporation
Detroit 31, Michigan

Directions: Read the following statements carefully. In each group you are to select the statement which you think **MOST** nearly describes the person during this rating period. Circle the letter in front of the statement in the column headed "**Most.**" Next you are to select the statement which you think is **LEAST** descriptive of the person during this rating period. Circle the letter in front of the statement in the column headed "**Least.**"

Remember that you are to **circle** one letter in the column headed "Most," and one letter in the column headed "Least" for each group of four statements. Do **not** omit "Most" and "Least" choices for any group of statements.

EXAMPLE:

- | Most | Least | |
|------------------------------------|------------------------------------|--|
| <input checked="" type="radio"/> A | <input type="radio"/> A | Kept essential records. |
| <input type="radio"/> B | <input type="radio"/> B | Made decisions before getting the facts. |
| <input type="radio"/> C | <input type="radio"/> C | Kept cool when emergencies arose. |
| <input type="radio"/> D | <input checked="" type="radio"/> D | Tried to do the job alone. |

1

- | Most | Least | |
|-------------------------|-------------------------|--|
| <input type="radio"/> A | <input type="radio"/> A | Was familiar with main trouble spots in his department. |
| <input type="radio"/> B | <input type="radio"/> B | Would not rely on his own opinions. |
| <input type="radio"/> C | <input type="radio"/> C | Always ready to help other foremen. |
| <input type="radio"/> D | <input type="radio"/> D | Complained about lack of men when asked to do additional work. |

2

- | Most | Least | |
|-------------------------|-------------------------|---|
| <input type="radio"/> A | <input type="radio"/> A | His men know what their production is and what is expected of them. |
| <input type="radio"/> B | <input type="radio"/> B | Took the easiest way out regardless of the precedent he might be setting. |
| <input type="radio"/> C | <input type="radio"/> C | He helped his men whenever he was asked. |
| <input type="radio"/> D | <input type="radio"/> D | Failed to make follow-ups. |

3

- | Most | Least | |
|-------------------------|-------------------------|--|
| <input type="radio"/> A | <input type="radio"/> A | Called his men by name. |
| <input type="radio"/> B | <input type="radio"/> B | He got mad at men who did not get production. |
| <input type="radio"/> C | <input type="radio"/> C | Made his department plans fit in with other departments. |
| <input type="radio"/> D | <input type="radio"/> D | Made alibis and excuses. |

4

- | Most | Least | |
|-------------------------|-------------------------|---|
| <input type="radio"/> A | <input type="radio"/> A | He took time to explain any job or operation. |
| <input type="radio"/> B | <input type="radio"/> B | Would not listen to suggestions. |
| <input type="radio"/> C | <input type="radio"/> C | Bawled people out. |
| <input type="radio"/> D | <input type="radio"/> D | Got reports in on time. |

5

- | Most | Least | |
|-------------------------|-------------------------|---|
| <input type="radio"/> A | <input type="radio"/> A | Controlled his temper. |
| <input type="radio"/> B | <input type="radio"/> B | Became nervous when things went wrong. |
| <input type="radio"/> C | <input type="radio"/> C | Kept work out-put up to schedule. |
| <input type="radio"/> D | <input type="radio"/> D | Did not plan or lay out work effectively. |

6

- | Most | Least | |
|-------------------------|-------------------------|---|
| <input type="radio"/> A | <input type="radio"/> A | Argued when questioned about mistakes. |
| <input type="radio"/> B | <input type="radio"/> B | Sent workers to Medical Department when their health might endanger others. |
| <input type="radio"/> C | <input type="radio"/> C | Kept many things going at once without getting lost. |
| <input type="radio"/> D | <input type="radio"/> D | Unsystematic—had no plans. |

7

- | Most | Least | |
|-------------------------|-------------------------|---|
| <input type="radio"/> A | <input type="radio"/> A | Slow in making decisions. |
| <input type="radio"/> B | <input type="radio"/> B | He gave recognition where it was due. |
| <input type="radio"/> C | <input type="radio"/> C | Questioned handling of paper work of other men. |
| <input type="radio"/> D | <input type="radio"/> D | If he didn't know the answer to a question, he said so. |

8

- | Most | Least | |
|-------------------------|-------------------------|--|
| <input type="radio"/> A | <input type="radio"/> A | Kept machinery in repair at all times. |
| <input type="radio"/> B | <input type="radio"/> B | Did work that his men should be doing. |
| <input type="radio"/> C | <input type="radio"/> C | Passed unpleasant jobs to others. |
| <input type="radio"/> D | <input type="radio"/> D | Delegated work to others wisely. |

9

- | Most | Least | |
|-------------------------|-------------------------|--|
| <input type="radio"/> A | <input type="radio"/> A | He strove to improve housekeeping. |
| <input type="radio"/> B | <input type="radio"/> B | Did not know where to place his men to get the most work from them. |
| <input type="radio"/> C | <input type="radio"/> C | Managed his job and maintained schedule under operating handicaps. |
| <input type="radio"/> D | <input type="radio"/> D | Unable to decide what he wanted to do about certain jobs or how to run them. |

10

- | Most | Least | |
|-------------------------|-------------------------|---|
| <input type="radio"/> A | <input type="radio"/> A | Helped other supervisors even though it meant nothing to his own job. |
| <input type="radio"/> B | <input type="radio"/> B | People asked to be transferred from his department. |
| <input type="radio"/> C | <input type="radio"/> C | He failed to assign his men at the start of the shift. |
| <input type="radio"/> D | <input type="radio"/> D | Appeared friendly and relaxed with visiting supervisors. |

11

- | Most | Least | |
|------|-------|--|
| A | A | He enforced discipline without trouble with his men. |
| B | B | Tangled with others on his own level. |
| C | C | Had to be told to correct obvious mistakes. |
| D | D | Discussed plans frequently with superiors. |

12

- | Most | Least | |
|------|-------|--|
| A | A | He was unable to present his case. |
| B | B | Griped about almost everything. |
| C | C | Quality of work exceptionally high. |
| D | D | Found information relating to the job if he didn't know the information. |

13

- | Most | Least | |
|------|-------|--|
| A | A | Clearly imparted information to others. |
| B | B | Would not accept responsibility. |
| C | C | Made many mistakes. |
| D | D | Discharged men in such a manner that dissension was avoided. |

14

- | Most | Least | |
|------|-------|--|
| A | A | Made decisions quickly. |
| B | B | Made promises beyond his authority. |
| C | C | Took suggestions and instructions without getting disturbed. |
| D | D | Constantly knocked company policies. |

15

- | Most | Least | |
|------|-------|--|
| A | A | Repeated personal problems of other people. |
| B | B | Slow in learning new methods. |
| C | C | Smoothed things over when people were irritated. |
| D | D | Used least number of men to run his department. |

16

- | Most | Least | |
|------|-------|---|
| A | A | Willing to admit mistakes. |
| B | B | Accepted responsibility for actions of his group. |
| C | C | Failed to report breakdowns immediately. |
| D | D | Irritated people by his manner of approach. |

17

- | Most | Least | |
|------|-------|--|
| A | A | Reprimanded his men in public. |
| B | B | His production record equaled or surpassed similar groups on other shifts. |
| C | C | Never too busy to listen to the troubles of others. |
| D | D | Got angry quickly. |

18

- | Most | Least | |
|------|-------|--|
| A | A | Stayed overtime in order to get important jobs cleared up. |
| B | B | He suggested many labor saving short-cuts. |
| C | C | Brought his personal troubles to the job. |
| D | D | Forgot things frequently. |

19

- | Most | Least | |
|------|-------|--|
| A | A | Repeated rumors. |
| B | B | Left notes to other foremen which made them mad. |
| C | C | Others asked for his assistance. |
| D | D | Never seemed to rush, but got things done. |

20

- | Most | Least | |
|------|-------|---|
| A | A | Organized plans for training workers. |
| B | B | He used his superior's name and position to enforce his statements without having first asked permission. |
| C | C | Made "bargains" with men concerning production. |
| D | D | Wrote daily records on his men. |

If there are other performances that you wish to report, state them below.

As compared with other supervisors responsible to you, indicate where this person ranks on over-all supervisory competence:

- () Above average (upper third)
 () Average (middle third)
 () Below average (lower third)

Appendix H

Tabulation of Supervisory Rankings

RANK ORDER DISTRIBUTION OF 46 SUPERVISORS
ON OVER-ALL JOB COMPETENCE

Case Number	1	2	3
1	1	1	1
2	5	3	2
3	2	6	3.5
4	6	12	6.5
5	8	11	6.5
6	12	14	9.5
7	16	10	11
8	7	2	3.5
9	14	4	5
10	4	15	8
11	27	29	28.5
12	20	23	22.5
13	25	24	26
14	23	18	19
15	30	17	24
16	17.5	27	25
17	21	19	17
18	28	20	20.5
19	46	46	46
20	44	44	45
21	43	35.5	40.5
22	40	34	39
23	39	37	40.5
24	38	38	42.5
25	35.5	42	42.5
26	35.5	31	34
27	32	33	35
28	33	32	33
29	34	45	44
30	45	22	30
31	37	29	32
32	22	5	12
33	26	43	38
34	3	30	16
35	9	35.5	27
36	11	16	9.5
37	17.5	13	13
38	19	7	14
39	29	9	22.5
40	15	39	31
41	10	21	15
42	13	26	18
43	41	25	28.5
44	42	8	20.5
45	31	40	37
46	24	41	36

Rankings by:

1. Top management
2. Supervisors below top management
3. All levels of supervision

Appendix I

Scores on Supervisory Performance Report

SCORES ON SUPERVISORY PERFORMANCE REPORT FOR PILOT STUDY

Case Number	K ₁ R ₁	K ₁ R ₂	K ₂ R ₁	K ₂ R ₂	K ₃ R ₁	K ₃ R ₂
1	24	21	16	12	10	8
2	25	23	13	12	9	10
3	25	26	16	19	11	13
4	21	23	16	14	10	11
5	22	26	20	12	11	9
6	23	21	16	13	10	11
7	28	--	14	--	10	--
8	23	22	17	13	9	11
9	21	19	13	13	10	11
10	24	23	14	11	9	8
11	32	21	16	15	11	10
12	20	-2	6	8	4	7
13	21	24	7	10	5	8
14	-2	--	0	--	0	--
15	22	19	6	18	6	11
16	20	24	11	16	7	10
17	-4	-6	-1	-6	-2	-1
18	20	22	10	13	7	10
19	-16	-16	-10	-10	-5	-5
20	27	19	13	7	5	6
21	23	-1	-1	0	6	-1
22	-21	11	-10	4	-5	3
23	22	20	5	13	8	10
24	-5	-8	-15	-2	-6	1
25	17	18	9	10	2	7
26	20	25	12	13	7	8
27	6	22	-3	14	-3	9
28	30	-7	11	0	7	0
29	12	-8	13	4	2	1
30	-5	11	-7	4	-2	3
31	19	21	4	13	3	12
32	22	21	10	8	7	9
33	27	20	16	12	12	9
34	24	18	12	16	9	12
35	23	18	15	10	10	6
36	25	25	13	11	8	9
37	21	29	10	14	7	10
38	18	20	8	12	4	11
39	20	--	12	--	10	--
40	23	24	10	10	6	8
41	19	20	14	13	7	10
42	27	21	16	4	11	3
43	22	22	6	10	4	6
44	21	22	6	10	6	6
45	-2	6	-4	8	0	5
46	23	6	12	-3	6	-3

R₁ (Rater one: Immediate superiors)
R₂ (Rater two: General Superintendent)
K₁ (Key one: Predictive key based on Check List responses)
K₂ (Key two: Item analysis of Supervisory Performance Report)
K₃ (Key three: Combined analyses at check study and pilot study)

SCORES ON SUPERVISORY PERFORMANCE REPORT FOR CHECK STUDY

Case Number	Key 1	Key 2a	Key 3
1	24	23	10
2	21	24	10
3	26	21	9
4	20	20	10
5	24	23	10
6	19	17	8
7	28	24	10
8	16	15	7
9	16	16	8
10	7	18	8
11	26	22	9
12	25	24	11
13	7	5	-1
14	-6	-2	-1
15	-6	-3	-5
16	10	13	6
17	17	12	6
18	17	14	5
19	-17	-11	-9
20	17	5	2
21	20	14	4
22	17	14	7
23	21	11	4
24	20	14	7
25	4	-7	-3
26	20	16	6
27	9	-1	2
28	-15	-18	7
29	-21	-26	-9
30	-7	-10	-6
31	-9	-15	-7
32	-21	-20	-9
33	-4	-11	-6
34	-19	-21	-12
35	-27	-24	-12

Key 1: Predictive key based on Check List responses
 Key 2a: Item analysis of Supervisory Performance Report
 Key 3: Combined analyses of check study and pilot study

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The author received an A.B. degree from Morehead State Teachers' College (Kentucky) in 1938, and later attended Graduate School at the University of Kentucky. She was granted a Master's degree in Education at Wayne University in January, 1948.

Prior to coming to Detroit, the author was a high school mathematics instructor and home room counselor in the tri-state region. In Detroit she became affiliated with the Department of Industrial Education, Division of Selection and Guidance, Chrysler Corporation. In 1949 she left the Chrysler Corporation to accept a position as Dean of Women at a Midwestern church college where she was also social chairman of the campus, and instructor in American history, and freshman orientation.

Through her training and experience the author became interested in the problem of supervisory ratings, and upon her return to Detroit she conducted the research project for the Industrial Education Department, Division of Supervisory Training, Chrysler Corporation, which was the basis for this dissertation.