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### A SURVEY OF CURRENT TECHNIQUES FOR SELECTING FIRST-LINE SUPERVISORS IN INDUSTRY

by

Linford A. Sutherland

A Thesis Presented to the Graduate Faculty
of Western Michigan University in
Partial Fulfillment of the Requirements for
the Degree of Master of Business Administration

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#### Introduction

The purpose of this investigation is to show to what extent the selection of supervisors is still based on subjective opinion, and to what extent objective devices have been developed and have gained acceptance.

The collection of relevant data for this survey involves a search of the published literature in the field. In this work the terms first-line supervisor, foreman, and supervisor will be used interchangeably.

The writer's interest in the area of supervisory selection was aroused after reading several articles on the problem of selecting factory supervisors of the highest caliber as industry now realizes that the supervisory group, more than any other single group in industry, controls the key to greater productivity.

This survey will be limited to manufacturing industries in the United States.

lEditors, "What's Ahead for Supervisors in 1961?" Supervision, XXII (January 1961), 3.

#### CHAPTER I

#### THE FUNCTIONS OF THE SUPERVISOR IN INDUSTRY

Changes in the Supervisor's Job

In order to fully understand the current functions of the supervisor in American industry, it would be well to take a look into what their functions were in the past. Langleland tells us that forty years ago it would have seemed rather absurd for anyone to ask if supervisors were really part of management. The supervisor of those days knew, without a shadow of a doubt, the group to which he owed allegiance. During that time, the plant manager, or the owner, was an unchallenged king of the industrial enterprise which he directed, and the foremen under him were "feudal lords" who ruled over their own areas with almost unlimited authority. When he needed men, the foreman went to the gate of the plant and hired those of his own choice. He fired those that displeased him and, within a general framework, he determined the pay for the individuals working for him, and he often varied it widely from man to man performing the same work. The amount of work, and the way in which it was to be performed were almost exclusively within his own province.

Such unlimited, autocratic power led to widespread abuses, and these abuses caused the workers to protest. Out of this fer-

langleland, Earl E., "Clarifying the Status of the Supervisor." Building up the Supervisor's Job. American Management Association, Manufacturing Series Number 213, 1953. P. 4.

ment came a long series of acts of legislation favorable to labor. The most important of which was the Wagner Act of 1935. The growth of the labor unions during this time caused the foremen to lose much of their power. This resulted in a reduced status for foremen in the factory scene, because many of their decisions were successfully challenged by the workers who were backed by their unions.

It is obvious that this jolt would place the foremen in an uncomfortable position, and in order to redeem their lost authority and status they, too, resorted to unionization. The Foremen's Association of Americal which began in August, 1941, grew to a point where it has been a decisive influence in several labor disputes. Jucius further states that this union is strictly a supervisors' union intended to advance the interest of the supervisors against management as its sole task and not as a minor by-product. For a while, the legal status of the Foremen's Association of America was in doubt, but the Labor Management Relations Act of 1947 excluded supervisors from the group of employees for purposes of collective bargaining. As a result, the growth and significance of the supervisors' union have been hampered. Commenting on this issue, Jucius thinks it is a sad experience for business that one segment of management should feel the need to organize so that it can bargain

Jucius, Michael J., Personnel Management, Fourth Edition. Homewood: Richard D. Irwin, Inc., 1959. P. 474.

collectively with another segment of management.

The following statement by Smith shows that he agrees with Jucius regarding the nature of the Foremen's Association of America:

"We have seen from the documents that the Foremen's Association of America is avowedly antimanagerial. Its constitution makes provisions for strikes against management and this provision has been exercised on more than one occasion."

In view of these attacks upon it, management could not remain inactive or indifferent, so, instead of fighting back, management became very vigorous to incorporate foremen into the management team once more. According to Smith, 2 this reaction on the part of management is a direct result of the supervisors' attempt to unionize.

It is interesting to note, however, that in spite of managements' prompt action to bring back the foremen into their former management status, yet management is having a very difficult time in doing so. In Langleland's opinion the cause of this difficulty lies with the foremen themselves, because the door to the ranks of management is open to them, but because they do not want to assume responsibilities, they will not enter.

<sup>1</sup>Smith, Charles Copeland, The Foreman's Place in Management. New York: Harper and Brothers, Publishers, 1946. P. 63.

<sup>&</sup>lt;sup>2</sup>loc. cit., P. 49.

<sup>&</sup>lt;sup>3</sup>Langleland, op. cit., P. 5.

Tiffin has also described the role which the supervisors played during the 1920's, and in this he agrees with Langleland. But in his opinion, the difficulty which management is having in bringing back the supervisors into the management team is based on the fact that by the 1940s, the job content of supervisors has changed from what it was during the 1920s, and as a result, supervisors cannot function effectively as members of management.

In the writer's opinion, Tiffin has presented a more logical view and this will be further investigated. The explanation given above brings home the major problem with which this Chapter is concerned; namely, what are the current status and functions of the supervisor in American industry in view of these changes?

## Reasons for the Change

The relationship which now exists between the supervisor and higher levels of management seems to be of great concern to both the supervisor and management. In the opinion of Drucker the supervisor is not "management to the worker" as the situation should be, because the engineering of the job, and the organization of people for work; the presence or lack of proper motivation; the employees economic relations to the enterprise;

Tiffin, Joseph, Industrial Psychology, Second Edition. New York: Prentice-Hall, Inc., 1947. Pp. 275-77.

<sup>&</sup>lt;sup>2</sup>Drucker, Peter F., The Practice of Management. New York: Harper and Brothers, Publishers, 1954. Pp. 319-28.

the spirit, principles and practices of an organization, are not determined by the supervisor or even greatly influenced by him.

He thinks that the supervisor's job has not been designed, or even thought through, because in American business, it is a "hodgepodge", the end product of decades of inconsistency. He cites the International Business Machine Company as an example to show what he thinks the supervisor's job should be.

At this company the supervisor's job, in Drucker's opinion, is a genuine management job where the supervisor carries out a large measure of responsibilities. He has control over the activities needed to discharge his responsibilities with adequate personnel to handle them.

Drucker also states that at the International Business
Machine Company, the trend toward narrowing the supervisor's
authority is reversed, because there the supervisor hires, recommends, discharges, trains, promotes and schedules, a situation
which does not exist in many companies. There also, the supervisory unit is at least twice as large as in other companies.

(This broadening of the supervisor's responsibilities, he thinks,
gives the supervisor the status he needs to represent the workers
to management.)

Here, Drucker is suggesting that in order to make the supervisor's job a management job, the supervisor should now function as he did in the 1920's as discussed above. He evidently did not consider that the forces which caused the changes may still be present in the society and hence may render unworkable any attempts to revive the old custom. The writer agrees that the supervisor's job of today needs to be qualified and well understood for purposes of industrial progress, but until the forces which are responsible for the changes in the supervisor's job are isolated and adequately dealt with, the "hodgepodge" will continue.

In order to study the supervisor in a particular work situation, Walker and others conducted a study of two automobile assembly plants. The study was based on interviewing all the production foremen in the plant and also on personal observation. Their findings showed that the amount of production on an assembly line is predetermined by the speed of the line, and by the carefully engineered plans of management. The foreman does not control the speed of the line, except in an emergency when he stops the line completely. He does not determine the number of units that are to be produced in a given period of time, and schedules are predetermined by technically trained experts.

The researchers contrasted the operations in these two plants with less highly mechanized operations in other plants where the foreman is often directly responsible for initiating the process, moving materials, scheduling, setting up jobs, and

Walker, Charles R., Guest, Robert H., and Turner, Arthur N., The Foreman on the Assembly Line. Cambridge: Harvard University Press, 1956. Pp. 5-11.

performing many other duties which in a mass-production plant are carried out by technical experts. The researchers made a significant observation to the effect that since the foreman has no control over the speed of the conveyor, his direct responsibility for production is to see that the line is adequately manned, and in performing this duty his major problem is that of absenteeism. Experienced foremen successfully counteracted absenteeism by developing a team relationship among their men. 1

These findings are quite revealing as they show that the impact of mass-production has drastically modified the work of the foreman to the point where his greatest activity appears to be in the area of handling men.

In this same area, Turner<sup>2</sup> also thinks that the impact of mass-production has created a technological environment which fails to provide necessary satisfaction and meaning in work.

This works against the company's own objectives because mass-production workers dislike their work and feel suspicious and hostile towards management. In his opinion, the major areas of worker dissatisfaction are: repetitiveness and impersonality. This, he thinks, can be successfully counteracted by the foreman with the help of management. He suggested several management policies which would improve human relations at the foreman-worker level and to help counteract the negative human and social

loc. cit., Pp. 62-63.

<sup>&</sup>lt;sup>2</sup>Turner, Arthur N., "Management and the Assembly Line." Harvard Business Review, XXXIII (September-October 1955), 40-48.

effects on workers and foremen of mass-production technology.

In another article, Turner stresses the point that the foreman is the "key to worker morale" in a mass-production factory situation.

From these opinions, it appears that greater stress is being placed on the supervisor of today to perform successfully in the area of human relations rather than in other duties which have been removed from his area of responsibility. On this same point Tiffin<sup>2</sup> has this to say:

"In the past, management has too often selected the supervisor from the working group primarily because the man chosen was a good worker or a high producer. We now know that ability to produce well on that job is no guarantee whatever of ability to supervise other men on the job. The supervisor chosen because of his production record is as likely as not to be a failure in handling men; and we might add that he will almost certainly fail unless he is given specific training in how to handle men. Industry today recognizes this situation and is not only considering many factors besides production ability in promoting a man to a supervisory position, but also is training supervisors in the solution of problems unique to the supervisory job."

This statement by Tiffin, although made in 1947, further substantiates the trend toward placing the emphasis on the ability of supervisors to handle men, rather than on other activities of production as was done in the past.

Turner, Arthur N., "Foreman: Key to Worker Morale," Harvard Business Review, XXXII (January-February 1954), 76-86.

<sup>&</sup>lt;sup>2</sup>Tiffin, op. cit., p. 474.

A later comment by Roethlisberger<sup>1</sup> indicates that in the 1940s, heavy stress has been placed on the need for a better understanding of human relations on the part of supervisors, or others whose role it was to supervise men and women at work. He observed that as a result of this, training programs designed to teach supervisors how to deal with people at work have become increasingly popular.

The popularity of these training programs in human relations for foremen should not be astonishing because the foremen have come to find themselves in a situation where demands were made on them which they were not trained to meet. Hence, any attempt to help prepare them for effective performance in their new role would be welcomed by them. This unpreparedness on the part of supervisors to perform effectively in a new environment created by the impact of labor unions and mass-production, has presented one of the thorniest problems in the area of industrial management. It remains yet to be answered just how the supervisor should be fitted into today's industrial situation.

## Where Does the Supervisor Stand?

In order to determine what the functions of the supervisor are, it would be necessary, first of all, to determine whether he is classified as a member of management, or as a member of the worker group, or both. On this question Mann and

Roethlisberger, F. J., "Training Supervisors in Human Relations." Harvard Business Review, XXIX (September 1951), 47-57.

Dent have this to say:

"Supervisors are important people. That they play a significant role in industrial organization is clear enough; management has long recognized the fact. Just what this role consists of - what these supervisors must do, how they fit into the organization, and what should be expected of them - is, however, not so clear."

However, these authors<sup>2</sup> also advance the idea that membership in two overlapping organizational families is inherent in the design of all companies. The first line supervisor, in particular, must be an accepted member of his own management group and an accepted member of the work group he supervises, if the total organization is to function effectively. Here, the idea of a dual role is supported, and the supervisor, naturally, is required to integrate the goals of individual subordinates and the objectives of the organization. This could be quite easily done if both management and the workers have a community of interest, but if this is not the case, then the supervisor's role would be exceedingly difficult.

On this question, Smith has voiced his opinion in the following statement:

"I have a strong and fervent belief that supervision is an integral part of management and that the vagaries of the recent kaleidoscopic supervision-management picture have been directly

Mann, F. C. and Dent, J. K., "The Supervisor: Member of Two Organizational Families." Harvard Business Review, XXXII (November-December 1954), 103.

<sup>&</sup>lt;sup>2</sup>loc. cit., p. 112.

<sup>&</sup>lt;sup>3</sup>Smith, op. cit., p. 76.

due to the sleepiness of much of executive management when confronted with what seems to be a bewildering problem."

Roethlisberger deplores the dual role of the foreman and blames this situation on management indirectly and directly on the workings of social forces.

Wray<sup>2</sup> calls the foremen "marginal men of industry" because in his view they do not share in the decision-making process which is the core of managerial functions. He thinks that they are merely transmitters of decisions which have been made by their superiors. These conflicting opinions concerning the role of the foreman are enough to indicate that his functions cannot be clearly defined because his position in industry is still undecided. However, the evidence seems to indicate that the trend is towards placing great emphasis on human relations as the area in which supervisors are expected to perform a greater part of their functions.<sup>3</sup>

In the opinion of the writer, the foreman will always be required to perform a dual role in representing management to the workers as well as to represent the workers to management.

Roethlisberger, F. J., "The Foreman: Master and Victim of Double Talk." Harvard Business Review, XXIII (Spring 1945), 283-98.

<sup>&</sup>lt;sup>2</sup>Wray, Donald E., "Marginal Men of Industry: The Foremen." American Journal of Sociology, LIV (January 1949), 298-301

<sup>&</sup>lt;sup>3</sup>The writer considers it more appropriate, for this work, to show the general area of the foreman's current functions, rather than to tabulate his every day activities.

To do this effectively, the foreman must in all respects share in the functions of management. He must also be an expert in applying the principles of human relations so that he can arouse and direct the loyalty of the workers toward the objectives of management. Therefore, in order for the foreman to fit into the new industrial scene which has been created by the impact of mass-production and the labor unions, he must be well trained in the techniques of management and, in short, he must be of high caliber. Industry is trying hard to find such men, and their techniques and success will be discussed in later chapters.

#### Summary

Over the years from the 1920s to the 1940s, the job content of the supervisor has changed as a result of the impact of labor unions and mass-production.

In general, employees are no longer promoted on the basis of their production record but rather for their ability to deal with people. Most supervisors were not prepared for these changes, and as a result they lost the management status they once held. This has caused the foremen to become bewildered, as the question of whether they belong to the management team, or to the worker group, or to both is still to be answered.

However, in spite of the uncertainty of the foreman's place in industry, there is a trend toward having him highly trained in the area of human relations so that he can harmonize the aspirations of the workers with the objectives of management.

#### CHAPTER 2

#### OBJECTIVES OF SUPERVISORY SELECTION

The objectives of supervisory selection are achieved when the supervisor, who has been chosen for a specific job, performs satisfactorily in the opinion of both top management and the group being supervised. Industry's attempts to realize this ideal has brought to view the problem of choosing the right man for the job. This problem shall be the concern of this chapter.

Yoder<sup>2</sup> states that the approach to this problem in the modern selective program is twofold. First of all, every available means should be used to identify individuals whose abilities interests, and other personal characteristics are requisite to superior performance as supervisors. Secondly, the requirements of the job should be objectively defined. Until these personal qualifications meet the requirements disclosed by job specifications, poor selection is inevitable. He also emphasized that job requirements at the supervisory level are by no means uniform in all industries and firms, because they may even vary from department to department within each firm.

This view of the variation of supervisory jobs, with the consequent variation in terms of the personal characteristics

<sup>1</sup>Smith, Robert E., "Foreman Selection Through Merit Rating." Personnel, XX (March 1944), 270-77.

Yoder, Dale, Personnel Management and Industrial Relations, Fourth Edition. Englewood Cliffs, N. J.: Prentice-Hall, Inc., 1956. P. 324.

required for success, is supported by Mandell, and also by

The matching of personal characteristics with varying job requirements naturally presents a problem. The difficulty is not so much with defining the job requirements because this may be done satisfactorily by the process of job evaluation. But the measurement of human characteristics is the core of the problem. In this respect Yoder<sup>3</sup> has this to say:

"Human qualities are, however, difficult to describe, to classify, and to identify, and this elementary fact makes the selective process a complicated one. Individuals are known to exhibit a wide range and a varying degree of mental and physical abilities. The combinations of these characteristics with cultural qualities, acquired in the social experience of the individual, are infinite in number and variety, so that the appraisal of human beings is a most difficult undertaking."

Sartain4 also realizes this difficulty, and in his opinion

Nandell, Milton M., "Research Findings in the Pield of Supervisory and Executive Selection." Personnel, XXVII (November 1950), 216.

<sup>&</sup>lt;sup>2</sup>Bertotti, Joseph M., "Picking Your New Supervisors." Factory Management and Maintenance, CXV (December 1947), 102.

Yoder, Dale, Personnel Hanagement and Industrial Relations, Third Edition. New York: Prentice-Hall Inc., 1948. P. 184.

Sertain, A. Q., "Relation between Scores on Certain Standard Tests and Supervisory Success in an Aircraft Factory." Journal of Applied Psychology, XXX (August 1946), 328.

the question of how to select supervisory personnel is one of the most important questions which a business concern faces. He further states that since success as a worker is no guarantee of success in supervision, it is natural that psychological tests should be considered as possible instruments for selection of suitable persons for supervisory responsibilities.

Evidently Sartain is here referring to the use of psychological tests in the measurement of human qualities. The writer is of the opinion that human qualities may not be adequately nor systematically measured by subjective opinion. Therefore it is necessary to devise other means to measure the required human qualities. This view of the writer coincides with that of Yoder who states that it cannot be denied that subjective judgments have formed the most important basis for supervisory selection in the past when the common practice was to identify desirable applicants by personal observation. He thinks that up-to-date selection procedure, although very complicated, shows the impossibility of determining which applicants are potentially the most desirable by casual observation.

The writer agrees with Hasley<sup>2</sup> whose view supports the idea that there is usually a suitable job for almost every person - one in which he can be successful and happy, and that the goal

<sup>1</sup> Yoder, op. cit., (Third Edition) p. 183.

<sup>&</sup>lt;sup>2</sup>Hasley, George D., <u>Selecting and Inducting Employees</u>. New York: Harper and Brothers, 1951. P. 2.

of intelligent employee selection methods is to help each person find that job. Although Hasley was commenting on the general question of employee selection, yet his view is quite applicable to the specific question of supervisory selection.

The extent to which psychological tests are being used in supervisory selection, and the extent to which they have gained acceptance as objective devices will be discussed in chapter three where such a discussion would be more appropriate.

Apart from the major objective of supervisory selection discussed above, Yoder seems to be convinced that a selection procedure should also seek to avoid such weaknesses that have long featured in selection in many organizations. Some notable types of these weaknesses are personal bias and prejudice, favoritism, unreasonable preferences for one group or another, such as a religious denomination or a fraternal group, and, equally important, a general disregard for evidences of promise on the part of applicants that are not readily observable from an application blank or a personal interview.

The extent to which these objectives have been realized by the use of current techniques in the selection of supervisors will also be shown in chapter three.

Yoder, op. cit., (Third Edition), Pp. 183-4.

#### Summary

The major objective of supervisory selection is to choose, for each job, the person who is best suited for that job, and who will perform satisfactorily in the opinion of both top management and the group being supervised. In order to realize this ideal, objective devices must be developed to measure human qualities and job requirements so that the person with the required qualities may be placed in the job for which he is best suited.

Because supervisory jobs vary in their contents, and also because human qualities are difficult to measure, psychological tests have been suggested as possible instruments for selecting the right supervisor for a specific job. The extent to which these tests have been used and the success associated with their use will be discussed in chapter three.

Other objectives of supervisory selection seek to avoid such weaknesses as personal bias, prejudice and other subjective shortcomings.

#### CHAPTER 3

#### LISTING AND EVALUATION OF EXISTING SELECTION METHODS

The complexity of the supervisor's job and its qualitative importance have led to the use of several methods of evaluation to help insure that the objectives of selection are realized. To facilitate presentation here, the writer has arbitrarily classified the various selection methods into the three general groups of appraisals, written tests, and other methods.

#### Appraisals

Included in this section are all such selection practices that are primarily based on personal observation and judgment.

Among them are the ratings of supervisory candidates and oral interviews.

The methods of appraisal had wide popularity in the past, but today a number of trends are evident in the use of appraisals that represent significant advances over selection methods that were common ten years ago. 1

This trend evidently is the result of industry's attempts to substitute objective for subjective methods in the selection process. The following statement by Wadsworth, Jr., 2 helps to

Mandell, Milton M., "Supervisory Selection Programs: A Study of Current Trends." Personnel, XXXII (September 1955), 113.

Wadsworth, Jr., Guy, W., "Hidden Abilities of Clinical Workers." Office Management Series, No. 88, New York: American Management Association, 1939. P. 8.

explain the reason for this situation by pointing out a weakness of the appraisal method:

"Generally speaking, low-grade supervisors tend to attract and to favor low-grade men. Their most favorable reports may be expected to concern subordinates much like themselves, who offer little potential rivalry. A keenly intelligent applicant placed under such a supervisor is often quickly classified as a 'smart aleck'."

A further weakness has been disclosed by Springer<sup>1</sup> who conducted a study of the ratings made on 100 men who were candidates for supervisory jobs in fourteen different departments of North American Aviation, Inc. The ratings were made as a regular phase of the company's supervisory selection program in which each candidate was evaluated on the basis of his work experience, scores on mental ability, education, and job knowledge tests, in addition to the ratings.

The ratings were made by two supervisors, representing two levels of supervision over the candidate, and by three co-workers who worked closely with the candidates but who were not eligible for the job. The results showed a low positive degree of relationship between the ratings given by supervisory personnel and co-workers.

This study shows that rating, as a form of the appraisal method, may not be consistent; and because of this the best results

<sup>&</sup>lt;sup>1</sup>Springer, Doris, "Ratings of Candidates for Promotion by Co-workers and Supervisors." The Journal of Applied Psychology, XXXVII (October 1953), 347-51.

of selection may not be realized. Mandell<sup>1</sup> thinks that so far appraisals have not proved of much use in identifying potential managers because there are no uniform standards of job performance or evaluation. In another article Mandell<sup>2</sup> commented on the problems which are involved in rating supervisory performance, and in his opinion several raters are needed to rate each person in order to get reliable results.

Although Dooher and Marting<sup>3</sup> state that the oral interview is probably the most widely used selection device in the world, yet they were quick to say that it is not reliable because the value of the interview in supervisory selection depends on the proper selection and training of the interviewers. However, under ideal conditions the interview can provide important information about candidates.

There seems to be a concensus of opinion that because of the inherent weaknesses of the appraisal methods based on the lack of objectivity, this method will continue to give way as more objective methods for supervisory selection are developed. The writer thinks that in spite of the odds which are against

Mandell, Milton M., "Appraisals: A Valid Management Selection Tool?" Personnel, XXXV (November-December 1958), 63-66.

<sup>&</sup>lt;sup>2</sup>Mandell, Milton M., "Supervisory Characteristics and Ratings: A Summary of Recent Research," Personnel, XXXII (March 1956), 440.

Dooher, Joseph M. and Marting, Elizabeth, Selection of Management Personnel Vol. 1, New York: American Management Association, Inc., 1957. P. 99.

the appraisal methods they will still be used, even to a limited extent, in most selection programs.

#### Written Tests

The search for objective methods of supervisory selection has led many employers to the psychologists. As a result, psychological testing is a growing business today as the following evidence will show.

The purpose of testing, according to Stockford, 1 is to determine what skills, traits, and capacities an employee or potential employee may possess and the degree to which these are present. The tests should be adapted to the specific jobs and working conditions within the company, and should measure the traits in the individual which are required for successful performance of any given job or set of jobs.

Since the purpose of testing is the ideal which management is seeking, it is natural that psychological testing would be popular. The fact of the popularity of testing is supported by Whyte<sup>2</sup> in the following statement:

"Two years ago only about a third of U. S. corporations used personality testing; since then the proportion has been climbing - of the sixty-three corporations checked by Fortune 60 per cent are using

<sup>1</sup>Stockford, Lee, "Selection of Supervisory Personnel," Personnel, XXIV (November 1947), 186.

Whyte, Jr., William H., "The Fallacies of Personality Testing," Fortune, L (September 1954), 117.

personality tests, and these include such bellweather firms as Sears, General Electric, and Westinghouse. While there are still some executives vigorously opposed to personality testing, all the signs point to a further increase."

While many are sold on the use of testing, thus supporting its popularity, some sober views are also being expressed. The following comment by Bradshaw supports the writer's cautious attitude towards psychological testing:

"The possibilities of unleashing human energies by proper selection, or by helping them to "select" themselves, are enormous. For that reason alone psychological testing must receive careful scrutiny. The controller who waves aside psychological testing as being 'too theoretical' - some of it is - and who condemns its practitioners as pseudoscientists - some of them are - is not making use of the selection tools available to him. On the other hand, as in all developing sciences the chances of misuse of psychological testing devices are great. As much harm can be done by leaping before looking as can be done by not looking at all."

It should be mentioned at this point that tests of themselves are useless as a measuring device. Mandell<sup>2</sup> states that basic to the success of any study of the value of tests is the preparation of a valid criterion. This problem is especially complex in evaluating administrative and supervisory positions. He also suggests that in devising tests for one organization, an attempt at agreement within the organization should be made as

Bradshaw, T. F., Developing Men for Controllership. (Graduate School of Business Admini tration), Cambridge: Harvard University, 1950. P. 42.

<sup>&</sup>lt;sup>2</sup>Mandell, Milton, "Testing for Administrative and Supervisory Positions." Educational and Psychological Measurement, V (1945), 227-8.

to the standards to be used in rating, because different standards in use by another organization will invalidate the results obtained in the first instance.

This brings into the picture the question of the validity and reliability of tests. Validity refers to the degree that a given test measures that which it is intended to measure, and the degree to which a given test does this consistently is referred to as its reliability. The writer agrees with Mandell on the importance of a valid criterion against which the validity of any test should be determined. However, as will be shown in chapter four, the criterion against which most tests are checked is based on the ratings of management officials above the supervisory level. Since such a criterion is basically subjective, it should not be expected that tests can be used on a purely objective basis.

While the use of psychological tests are strongly supported by Sartain, <sup>2</sup> and also by Mandell <sup>3</sup> who thinks that testing places

Jucius, Michael J., Personnel Management, Fourth Edition. Homewood, Illinois: Richard D. Irwin, Inc., 1959. Pp. 238-41.

<sup>&</sup>lt;sup>2</sup>Sartain, A. Q., "Relation between Scores on Certain Standard Tests and Supervisory Success in an Aircraft Factory."

Journal of Applied Psychology, XXX (August 1946), 328.

Mandell, Milton M., "How to Pick Better Front-Line Managers." Dun's Review and Modern Industry, LXXV (January-June 1960), 42.

the selection process on an objective basis, others have been very active in pointing out the weaknesses of psychological tests.

Shuman states his views thus:

"In their present state tests are not wholly adequate for predicting supervisory success. However, tests and rating scales do provide good and effective bases from which to start, or checks by which to guage decisions. Supervisory and executive ability arise from the interaction of many different qualities and abilities, and no single test will measure entirely the many qualities and abilities involved."

In the opinion of Whyte, 2 most managements have been screening job applicants with tests of aptitude and intelligence, but while these have been useful in eliminating the obviously unfit, they have not been able to predict performance, for they tell nothing of a man's motivation and all those intangibles that can make the difference between success and mediocrity. He further states that tests discriminate against the man of promise, and if they were rigorously applied today, half of the most dynamic men in business would be out walking the streets for a job. He denounces tests on the grounds that they are unscientific.

The following statement by Chapple and Donald indicates

Shuman, John T., "The Value of Aptitude Tests for Supervisory Workers in the Aircraft Engine and Propeller Industries."

Journal of Applied Psychology, XXIX (June 1945), 185.

<sup>&</sup>lt;sup>2</sup>Whyte, Jr., op. cit., P. 117-118.

Chapple, Eliot D. and Donald, Jr., Gordon, "A Method for Evaluating Supervisory Personnel." Harvard Business Review, XXIV (Autumn 1945-Summer 1946), 197.

that they are in agreement with Whyte:

"Certainly, too, from the job of foreman on up to president, one of the most indispensable requirements for successful performance is possession of appropriate personality traits like initiative and ability to adjust to other people. Yet, up to the present there has been no method available for scientifically evaluating the personality characteristics required of successful operating executives and other supervisory personnel."

A more moderate view of tests has been taken by Meyer and Bertotti. 1 These authors state that the most widely used and valuable tests for screening candidates for higher-level positions are those designed to measure "general intelligence" or general learning ability. In their opinion, interests and personality are usually important factors in determining job success, but psychologists have not been so successful in developing valid measures of them as they have been in developing measures of abilities. Even in the matter of abilities, tests indicate only what a man should be able to do - they cannot measure what he will do. The authors pointed out that although tests are not the cure all, they help to measure human characteristics on an objective basis. With this view of the authors. Stockford seems to be in agreement because although he lists several limitations of the use of tests, yet he concludes that they can be of help in the process of selection.

Meyer, Herbert H. and Bertotti, Joseph M., "Uses and Misuses of Tests in Selecting Key Personnel." Personnel, XXXIII (November 1956), 277-85.

<sup>&</sup>lt;sup>2</sup>Stockford, op. cit., P. 187-8.

In the writers opinion, the evidence for and against the value of testing in supervisory selection cannot support a definite answer. However, the limitations of psychological testing clearly show that they are not wholly objective methods of selection. In spite of this, the writer thinks that their use may produce results superior to those which may be obtained from the use of purely subjective methods of selection.

This view of the writer coincides with a similar view which in effect states that although most management men will agree that any profit-making organization must have good supervisors, objective measurements of the nature of good supervision are not common. Today, however, psychologists in universities and industry are attempting to provide specific answers that management can use to improve supervisory selection. 1

#### Other Methods

Other methods of selection which have not been discussed so far may be included in this section. Achard and Clarke state that there are almost as many methods of selecting supervisors as there are executives and managers. The factors on which these choices are made include such diverse considerations as seniority, performance in previous jobs, education,

<sup>1 , &</sup>quot;Good Supervision: Key to Productivity." The Management Review, XLI (December 1952), 785.

<sup>&</sup>lt;sup>2</sup>Achard, F. H. and Clarke, Florence H., "You Can Measure the Probability of Success as a Supervisor." Personnel, XXI (May 1945), 354.

availability and "apple-polishing."

The authors further express the following opinion:

"Supervisors and formen are still commonly selected by hit-or-miss methods, despite the growing need for supervisory staffs that can deal with a diversity of labor relations problems."

The writer agrees with Yoder<sup>2</sup> who is strongly against the choosing of foreman on the basis of seniority and other hit-ormiss methods because too often the foremen so chosen are only good machine operators instead of manpower managers.

### Sunnary

The evidence shows that subjective methods of supervisory selection, such as the methods of appraisal and oral interviews, have been widely used in the past, but today the trend is towards the development and use of objective devices.

Psychological testing is recognized by many as the answer to this quest for objective devices and, as such, it has gained fairly wide popularity.

However, many authors and researchers have pointed out several weaknesses of the use of psychological testing to such an extent that it cannot be said that testing is a wholly objective method because of the lack of a scientific approach.

The use of other methods, which may be termed "Hit-or-miss" methods, are also employed in supervisory selection.

loc. eit., P. 353.

<sup>2</sup>Yoder, Dale, "What's Wrong with Middle Management." Personnel, XXL (May 1945), 331-2.

#### CHAPTER 4

#### EXAMINATION OF INDUSTRY EXPERIENCE IN SUPERVISORY SELECTION

A. Company Experience in the Use of Tests

This investigation would not be considered complete without an examination of the specific types of tests which are actually in use by various companies.

A study of the selection program at the Fisher Body Plant, 1 a division of General Motors, revealed the use of the following tests:

- 1. California Test of Mental Maturity
- 2. Minnesota Paper Form Board Test
- 3. Purdue Industrial Math Test
- 4. Remmers--- How Supervise?
- 5. Oldsmobile Safe Practice Knowledge Test
- 6. Bennett Test of Mechanical Comprehension
- 7. Kuder Preference Record
- 8. Adams --- Personal Audit

These tests were selected in terms of meeting organizational needs as they were used with the intention that they would measure particular abilities and social assets that Fisher Body believes management men should have.

The Consolidated Edison Company of New York, Inc., provided

Nordyke, R. R., "The Selection and Development of First-Line Supervision." Personnel, XXIX (January 1953), 321-32.

facilities for Achard and Clarke to study 300 of their supervisors. The purpose of this study was to determine how good supervisors differ from unsatisfactory supervisors with respect to mental abilities of various kinds, personality and breadth of interests, and ability to see and understand quickly. They further wanted to find out if employees who have "what it takes" to be supervisors can be distinguished from those who do not, with a reasonable degree of accuracy.

A supervisory rating scale was developed for use in dividing the 300 supervisors into groups of "good" and "unsatisfactory"
by answering questions about them on a questionnaire. In
attempting to achieve the above objectives, the following tests
were used in this study:

## Tests of Mental Ability

- 1. English Vocabulary, Work Sample 95 Form EA.
- 2. Otis Self-Administering sTest of Mental Ability, Higher Examination; Form A.
- 3. Test of Mechanical Comprehension, Form. AA.

## Tests of Personality

- 1. The Personality Inventory Scales, B2-S, F2-S, and CFS.
- 2. Vocational Interest Blank for Men (Revised) Form M. Scale CFS only.

## Tests of Visual Perception

1. Minnesota Vocational Test for Clerical Workers
Test 1 (Number Checking)
Test 2 (Name Checking)

Achard, F. H. and Clarke, Florence H., "You Can Measure the Probability of Success as a Supervisor." Personnel, XXI (May 1945), 353-65.

# 2. Revised Minnesota Paper Form Board Test,

The results of this investigation showed that all the tests distinguished to some extent between the good and the unsatisfactory supervisors. However, the Otis Self-Administering Test of Mental Ability, the test of Mechanical Comprehension, and the Number-Matching Test of the Minnesota Clerical Test, distinguished quite well between the good and the indifferent supervisors. The same thing is true of the CFS scale of the Vocational Interest Blank.

Only two of the personality inventory's scales were found to be useful. These are the B2-S scale which was used to measure self-sufficiency, and the F2-S scale which measured sociability.

The researchers concluded that although some of the test scores selected the good from the unsatisfactory supervisors, yet for final selection the responsible executives should add to the ratings based on test scores all available information about the candidates.

A similar study was conducted by the Lockheed Aircraft Corporation with the aim of setting up a scientific procedure for selecting its supervisors on a non-discriminatory basis. The criterion of success was the opinion of the supervisors' superiors. Among the methods of selection used in this study

<sup>1</sup>Stockford, Lee, "Selection of Supervisory Personnel." Personnel, XXIV (November 1947), 186-99.

were the following three types of psychological tests which the author felt should be included in any well-rounded, adequately planned selection program:

- 1. Tests which measure specific skills for both factory and office-technical jobs.
- 2. Tests of general mechanical aptitude and learning ability.
- Tests of personality, such as temperament scales and interest scales.

Personality was measured in two different ways: (1) by means of a personality test, and (2) by means of a rating of personality in which the rating scale contained items comparable to those usually found in personality tests.

While the other tests showed a relationship between job success and individual test scores, the results of the personality tests showed no such relationship.

Buschion

The experience of the Texas Division of the North American, Inc., In the use of tests to predict success in supervision was not successful. At this company, forty members of supervision in the factory were given the following battery of tests:

- 1. Otis Self-Administering Test of Mental Ability, (Higher Examination).
- 2. Tiffin and Lawshe Adaptability Test (Form A).
- 3. Revised Minnesota Paper Form Board.
- 4. Bennett Test of Mechanical Comprehension (Form AA)
- 5. Remmers and File: How Supervise? Experimental Edition, Form A).
- 6. Bernereuter Personality Inventory.
- 7. Kuder Preference Record.

Sartain, A. Q., "Relationship Between Scores on Certain Standard Tests and Supervisory Success in an Aircraft Factory." Journal of Applied Psychology, XXX (August 1946), 328-32.

As a criterion, each supervisor was rated by his two immediate superiors. The test scores were then correlated against the criterion, and in every instance the coefficients obtained were too low to be considered significant. It was concluded that these tests had little or no predictive value for success in supervision in this plant, and the test administrator was inclined to blame the low correlation on faulty criterion.

Mandell<sup>1</sup> reports the result of an examination of the program for selection and promotion of five levels of foremen in ship-yards, air stations, ordnance plants, warehouses and other field installations of the Navy Department. In an attempt to determine which tests would work effectively at all grade levels and for all occupations the following tests were used:

- 1. Supervisory Judgment.
- 2. Mechanical Principles.
- 3. Spatial Relations, This test consists of 25 paper.
- 4. Rules and Regulations, This test pertains to rules and regulations of the Navy Department.
- 5. Reading Comprehension.
- 6. Numerical Relationships.
- 7. Blueprint Reading.

As usual, the criterion was based on the ratings of the superiors and colleagues of the men who were tested.

The results showed that test one had the highest correlation

Mandell, Milton M., "The Selection of Foremen." Educational and Psychological Measurement, VII (1947), 385-97.

with test five as a second. Tests two and three were reasonably good. Tests four and six were considered low, and test seven was discarded as irrelevant.

At the Carrier Corporation the use of tests also features in their selection program. Hable tells us that the test battery used at this company includes the following:

- 1. Wonderlic Personnel Test. (A test of Intelligence).
- 2. SRA Mechanical Aptitude Test. Three parts:
  - (1) Mechanical Knowledge, (2) Spatial Relationships
  - (3) Shop Arithmetic.
- 3. How Supervise?
- 4. Practical Judgement Test. A test of "Common Sense."
- 5. <u>Guilford Zimmerman Temperament Survey</u>. A personality inventory.

These tests were given to 173 foremen at Carrier in an attempt to validate them. These foremen were previously ranked by the general foremen and superintendents. The results showed that all the above tests, except test one, had a high validity.<sup>2</sup>

From this array of industry experience in the use of tests many observations can be made. First of all, it can be clearly seen that no two companies use the same test battery. This observation collaborates with the view, expressed in chapter two, that supervisory jobs vary from company to company, and also

Hable, Kline, "Carrier Corporation." Selection of Management Personnel, II (Dooher and Marting, Editors). New York:

American Management Association, Inc., 1957. P. 109-119.

This article was especially written for the editors, and hence its publication in Selection of Management Personnel, II, is used as a primary source.

from department to department within a company. On this basis it is reasonable that the devices used to measure people to fill these jobs should also vary.

It is important to note that in all the cases of company experience, the criterion against which the validity of the tests were checked was based on subjective judgements of either higher levels of management above the supervisory level, or on judgements of co-workers of the supervisors who were tested. This in effect reduces the degree of objectivity in the use of tests, and places their use on a subjective basis.

# B. General Programs of Supervisory Selection

The difference noted in the various test batteries in use by several companies also exist in the various company programs for selecting supervisors. According to Mandell, this variety of programs, no two of which are identical, indicates the need for designing specific programs to meet specific situations.

At the Dewey and Almy Corporation<sup>2</sup> the conviction exists that foremen are managers, and that the primary requisite of management is leadership ability. Their selection program exhibits three features, (1) promotion from non-supervisory

Mandell, Milton M., "Supervisory Selection Programs: A Study of Current Trends." Personnel, XXXII (September 1955), 117.

<sup>&</sup>lt;sup>2</sup>Miller, J. W., "Foremen Selection and Development: Key to Efficient Operation." Assuring Adequate Reserves of Key Personnel. New York: American Management Association, Inc., 1956. Pp. 3-10.

employees, (2) transfer from other management jobs in the company, and (3) recruiting from outside the company.

When a supervisory vacancy occurs the plant manager asks all members of management to submit names. Each candidate is then asked if he wants to be considered for the vacancy, and the records of those who answer affirmatively are reviewed.

The primary method of selection used by this company is the oral interview where the plant manager, and Industrial Relations representative, and a third member of management form the interviewing team. The interviewers compare their notes and the successful candidate is chosen.

It is important to note that tests are not used at Dewey and Almy, because management have not been sold on their value.

A recent survey of 140 companies, of varying sizes, made by the Bureau of National Affairs showed that the majority of supervisors came from the ranks and that this policy is more common among large companies than among smaller ones. This policy of promotion from within is also followed, as a basic selection device, by the Benjamin Electric Company and the

<sup>, &</sup>quot;How Management Picks a Supervisor." Supervisory Management, IV (February 1959), 61-2.

<sup>&</sup>lt;sup>2</sup>Steel, Hoyt P., "Integration of Production Supervisors." Adjusting to a Competitive Economy--The Human Problem. New York: American Management Association, Inc., 1954. Pp. 28-31.

Albany Felt Company, which specializes in recruiting college graduates from among whom management trainees are selected. By this method Albany Felt has been able to hold its recruits, and this contributes to a progressive and growing organization according to company reports.

The Wisconsin Power and Light Company<sup>2</sup> also follows the policy of promotion from within, but in addition they use tests of learning ability, personality, interest, and judgement. The committee approach in interviewing is followed, and a physical examination is given before final placement.<sup>3</sup>

It is interesting to note that at the Defender Photo Supply Company, Inc., <sup>4</sup> Rochester, New York, a system of merit rating is used as the primary method of supervisory selection with very good results according to company reports.

Reed, Everett C., "Evolution of a Management Program."

Spotlight on the Worker: New Approaches to Personnel Problems.

New York: American Management Association, Inc., 1955. Pp. 34-38.

<sup>&</sup>lt;sup>2</sup>Stolper, Earl C., "Wisconsin Power and Light Company." Selection of Management Personnel, II (Dooher and Marting, Editors). New York: American Management Association, Inc., 1957. Pp. 211-236.

<sup>&</sup>lt;sup>3</sup>This article was especially written for the editors, and hence its publication in Selection of Management Personnel, I<sup>I</sup>, is used as a primary source.

Smith, Robert E., "Foremen Selection Through Merit Rating." Personnel, XX (March 1944), 270-77.

A distinctive feature of the supervisory selection program at Fisher Body, a division of General Motors, is a reserve-group-in-training which the company maintains at all times. Candidates to this group are selected by a selection committee which uses tests and various appraisal methods. At this company the candidates are selected on the basis of required personal characteristics which have been disclosed by job specifications.

The General Electric Company's program<sup>2</sup> for selecting supervisors is geared to meet the greater need for top quality supervision, especially at the first level of management. As a result their program is quite elaborate. The specifications of jobs to be filled are first determined, and candidates are nominated by managers and supervisors, and also by self-nomination. Trained evaluators from the personnel department examine the personal and job performance records of the candidates. Then they administer psychological tests and perform a thorough interview before final selection is made.

For many years, appointment to foremanship at the Perth Ambov Plant<sup>3</sup> of the American Smelting and Refining Company was

Nordyke, op. cit.

<sup>&</sup>lt;sup>2</sup>Bertotti, Joseph M., "Picking Your New Supervisors." Factory Management and Maintenance, CXV (December 1957), 102-104.

Walker, W. S., "A Foreman Candidate Development Program." Personnel, XXVIII (January 1952), 336-53.

an attempt to fit a good workman into a job of leadership.

Men were promoted from "doing" jobs to "directing" jobs, a

transition which was often successful, but which some men could

never make in a completely satisfactory manner owing to a lack

of leadership qualities. Management attempted to avoid this

"hit-or-miss" approach by instituting a selection program for

supervisors. Their program provides for determination of future

supervisory replacement needs for a specified period. After job

specifications have been prepared, the department heads recom
mend candidates from among non-supervisory employees. Other

steps include interviewing by a committee, class-room training,

and on-the-job evaluation before final selection. It should

also be mentioned here that this company does not use tests.

From this survey of company programs, there is evidence to show that the policy of promotion from within has wide popularity and usage. This observation of the writer is supported by the following statement:

"Selection of foremen from rank-and-file workers is the overwhelming practice among a representative group of 180 large and small firms recently surveyed."

The writer thinks that this policy of promotion from within can produce excellent results. However, this policy can be very harmful if the workers to be promoted are lacking in managerial

<sup>1 , &</sup>quot;Company Practices in Foremen Selection."
The Management Review, XLI (November 1952), 421.

potentialities. Another danger to be avoided is that of "inbreeding." Therefore, although the writer agrees with the policy of promotion from within, yet he does not think that it should be followed exclusively.

In most of these selection programs, the responsibility for nominating the candidates rests on the superiors of the candidates. This represents a limitation of the objective approach on which supervisory selection programs should be based.

## Summary

An examination of industry experience in the use of tests shows that test batteries differ from company to company. This seems to be in accordance with the varying nature of supervisory jobs. The criterion against which most test batteries are checked is based on the subjective opinion of management officials above the supervisory level. This practice places the use of tests on a subjective basis.

The dominant feature in most supervisory selection programs is adherence to the policy of promotion from within. This policy should not be followed exclusively as it may lead to "inbreeding." This policy can be harmful if followed in a company where the workers to be promoted are lacking in managerial abilities.

The nomination of candidates for supervisory positions by their superiors also limits the degree of objectivity in supervisory selection.

### CONCLUSIONS

From this investigation, several conclusions may be drawn.

Among them, the writer wishes to mention the following:

American industry has witnessed significant changes over the years since the 1920s. Labor union activities and mass-production techniques, during this period of time, have been recognized as the two major factors which are responsible for these changes. The effects of the changes have been quite noticeable in the area of first-line supervision in industry where the job content of the forman's job has been drastically changed. In the past foremen were judged primarily on their ability to produce, but today they are rated on their ability to manage men.

The change in the job content of the foreman was not accompanied by the required change in the ability of foremen tocope with the situation. As a result, the foremen lost the management status they once held, and in spite of efforts to have them reinstated it is yet uncertain when this will be accomplished in practice.

The importance of the foreman's function in industry is very well understood because the fact that he controls the key to greater productivity is contradicted by none. The foreman's contribution to increased productivity, will not be realized until the foreman masters the techniques of manpower management,

and is fully accorded management

status where he can adequately perform the dual role of representing the workers to management, and at the same time representing management to the workers. The objective of supervisory selection, therefore, is to find the right men who will perform successfully in this situation.

The various methods of supervisory selection now in use may be conveniently divided into two groups: The subjective and the objective. In the past, the subjective methods of appraisal were prevalent, but today objective devices in the form of psychological tests are widely used.

In spite of their popularity, psychological tests have many weaknesses. In the first place, the validity of a given test is established by checking such test against subjective criterion; this in effect, lessens the degree of objectivity. Secondly, tests cannot predict performance, but they can be of help in predicting what a worker should be able to do. Therefore, although they are popular, psychological tests are not purely objective measures of human qualities because they are not scientific; and as such, the selection of supervisors in industry is still largely based on subjective opinion in spite of efforts to use objective devices.

The survey of company programs for selecting supervisors shows that most companies prefer to promote their hourly workers into supervisory positions. Usually, this is done after a long period of personal observation by higher levels of management.

In conclusion, some thought should be given to the possibility or impossibility of measuring human qualities by objective means. The writer is of the opinion that human qualities is subjective in nature and therefore they may not be measured systematically by objective methods. For example, an individual is known to be kind only to those who interpret his actions as kind, and those who interpret the same actions as unkind will consider the individual to be unkind. Therefore, it is a matter of personal opinion as to which person is in possession of the quality of kindness.

It was not the purpose of this investigation to determine which of the two approaches, subjective or objective, is better for supervisory selection; and in the writer's opinion, this remains an open question for further study. However, the writer suggests that in the area of supervisory selection no single method nor combination of methods should be considered adequate and final, but continued study should be maintained with the hope of arriving at an ultimate solution.

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