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JOB EVALUATION AND ORGANIZED LABOR

By
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(B.B.A. Clark University 1954)

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I INTRODUCTION

A. The Problem

The purpose of a job evaluation program in any company is to establish just rates of pay for the various jobs within the company thereby setting off the relative worth of one job to another. Development of a program to establish this has been a slow, tedious process and it is still flexible and undergoing constant changes.

There are four basic modes of job evaluation and these are the ranking method, grading method, factor comparison method, and point method. There is little agreement on which system best accomplishes its objective though the point method is most prevalent. Regardless of the plan used, job descriptions must be prepared after which the jobs are evaluated by a committee according to the chosen plan. In most cases the installing company goes beyond the evaluation process and relates the evaluation to the wage scale by utilizing a labor market survey. By so doing the relationship between the evaluated jobs and their monetary return is established.

Generally, management is of the opinion that a successfully operated job evaluation program does succeed in establishing the proper differentials for all the jobs in a plant, and moreover, that it brings these jobs into the proper relationship with one another. By accomplishing this as well as acting as a basis for other management techniques, it is considered
as a distinct advance in the field of scientific management.

While management looks to job evaluation as a most desirable achievement, most national labor unions take an opposing stand. Labor leaders feel that it will be used to replace the process of collective bargaining in determining the wage structure. Local labor union officials have varied opinions, some extolling job evaluation and others vehement in its denunciation. Adding to further complexity of the situation, there is no uniformity of opinion as to why they either like or dislike job evaluation. Both local and national union officials have made certain criticisms of specific items involved in job evaluation such as the misleading aspects of point systems and the subjective method of assigning points to various intangibles as skill and effort. However, many of these specific criticisms appear to arise because labor has no voice in the installation of the job evaluation program.

B. Importance

If management and labor do not agree on a mutually acceptable plan of job evaluation, its installation will do much more harm than good. There will be little harmony between the two forces and job evaluation will fail dismally. Instead of decreasing grievances, management will be faced with a greater labor problem than existed before a system of job evaluation was installed.

C. Studies Made

Job Evaluation is an area where much research has
already been done and where much more remains to be achieved. It is an area of constant search and new theories. The field of job evaluation, like most areas of management, is a dynamic one and there exists no rigid rules of protocol. It is a relatively new idea and is now in the developmental stage. As such, it is the subject of many authors and investigators and is constantly brought before the eyes of businessmen through books and various trade journals.

1. Eugene J. Benge.

Among the foremost proponents of job evaluation, E. J. Benge rates high. In 1928 he first introduced his concept of the Factor Comparison Method of job evaluation. Since this time, he has authored many books and articles on job evaluation and has made a lasting contribution to the field.

2. D. W. Weed

The late D. W. Weed developed a point system plan while at General Electric which bears his name to the present day. The point method of job evaluation is now the most widely used system of job evaluation plans and the Weed Plan is but one variation of the point system.

3. Boris Shiskin

To mention a labor figure who has written much on
the topic one does not have to do much research to discover many authors. Boris Shiskin is one of the foremost who has carried the union viewpoint in analyzing job evaluation and its impact on unions and the worker.

Many more can be mentioned in connection with job evaluation but a representative few will suffice to indicate the scope of coverage of the subject.

D. Purpose of This Paper

The author has studied job evaluation from a critical and searching viewpoint. Why does job evaluation work well in some companies? Why does it fail in others? What do successful plans seem to have in common? The object of this manuscript is to delimit trouble areas in the various aspects of job evaluation and also to find what constructive steps can be taken to improve the acceptance of plans on the part of labor.

Too much has been written in criticism of job evaluation and too little in advocation of ways of making it more salable to organized labor.

It is quite common, for example, to read comments to the effect that the factor comparison plan is weak because it cannot easily be explained to labor or that the point method is not good since it relies too much on human judgement. Too often, presumed authorities on the matter rest their case at this point. Where they leave off this thesis begins. If the factor comparison plan is weak because it is complicated, what
can be done to make it more workable? If the point method is condemned because of too much reliance on human judgement, what can be done to defend it? Thus, this paper attempts to find what factors contribute most to successful job evaluation and how the company can best apply these factors to working out a successful system.

Current reading by leading authors on the subject will be studied. Actual plans now in force will be analyzed. Finally to temper theory with practice, visits will be made to the Adams Machine Company of Worcester, Massachusetts and the Worcester County Trust Company, also of Worcester.

Their job evaluation systems will be described in some detail. Other Massachusetts companies will also be visited and any worthwhile comments or contributions will be noted.

By such study, the components making for successful job evaluation should be brought out more clearly.
II DEVELOPMENT OF JOB EVALUATION

A. Approach to the Subject

Before discussing the attitude of the various unions and union leaders to the comparatively new management technique of job evaluation, a brief treatment of the principles involved and the methods employed will be presented. This elementary treatment of the subject is necessary because many of the comments and opinions of the people in the job evaluation field have been on specific items which are encountered in the systems themselves or their installation, as contrasted with the general aims and results of a job evaluation program.

In order to allow this explanation of job evaluation principles to be a scholarly and unbiased presentation, it was written prior to the reading of any specific material on either the union or the management attitude on the subject. By so proceeding, the material on job evaluation principles is presented so as not to give any special emphasis to items which are highly controversial and will be dwelt upon in the later discussion. The weight given in the discussion of the various points is therefore dependent on importance to the job evaluation system and is not influenced by the attitude of either management or labor.

B. Definition of Job Evaluation

Job Evaluation has been defined as "the finding out exactly what each job is worth and to measure its true value
in relation to all other jobs”. Usually it is applied to only the non-clerical wage earners who are paid either by the hour or are in some way dependent upon their physical production for remuneration. This generally means the workers in the factory are possibly involved in the maintenance of plant and equipment. However this is not to be taken as an absolute situation since there are job evaluation programs in use at the present time which have been designed to include clerical personnel and also lower scale supervisory employees.

C. Purpose of Job Evaluation

1. Primary

The primary purposes of a job evaluation program have been stated as follows: **

a. "To establish a general wage level for a given plant which will have a parity, or an otherwise desired relationship, with those of neighbor plants, and hence with the average level of the locality.

b. To establish correct differentials for all jobs within a given plant.

c. To bring new jobs into their proper relativity with jobs previously established.

d. To accomplish the foregoing by means of facts and principles which can readily be explained to, and accepted by all concerned."

2. Secondary

In order to inaugurate a job evaluation system in a plant and have this system accomplish the desired objectives

*6, p.1.
**10, p.7.
stated, certain steps have to be taken. Many of these steps, complete in themselves or with slight addition, prove to be useful management tools in other phases of the personnel program in effect in the plant. These other uses of a job evaluation program may be deemed secondary purposes. These secondary purposes may well be indicated by the following outline of a job evaluation program:

a. "To determine qualities necessary for a job when hiring new employees.

b. To determine qualities necessary for a job when making promotions.

c. To determine if the system of advancement in a particular plant is from the job of lowest order toward the job of highest order.

d. To determine qualities necessary when bringing back men who have been laid off or have been on leave. During the interval, there may have been changes in the job content.

e. To support explanations to employees as to why a particular man would not be suitable for a given opening.

f. To determine if men now occupying various jobs have qualifications required by the specifications.

g. To determine if all men are placed to best advantage in respective jobs available and also to guide the revamping of jobs for skill conservation.

h. To analyze hourly rates and to determine if they are in line with the rating given.

i. To compare periodically wage rates with those for similar occupations at other local plants.

j. To point out where greatest opportunities lie for development of automatic equipment and improvement of

*30, p.48.
working conditions, removal of hazards, etc.

k. To train new supervisors. Specifications outlining duties of each man are useful in starting a new foreman on the job.

l. To facilitate explanations to an employee of the fact that any improvements in working conditions theoretically should mean a reduction in his wage rate."

A program that is capable of accomplishing all of the desired objectives of job evaluation has not been developed hurriedly but rather it has been a slow, gradual transition from the idea stage to the actual operating plan. Job evaluation has not been the result of the work of any one man or a particular group of men, but it has been the combined contributions of the ideas of numerous individuals. The constant testing and re-testing of these plans under actual operating conditions have given management the job evaluation programs that are being used today.

D. History of Job Evaluation

The beginnings of modern job evaluation trace back to the early Civil Service reformers who endeavored to have Civil Service jobs classified.* They finally succeeded in 1909 and today all Civil Service jobs are classified and evaluated. By classifying a job, it is studied and its contents are noted and analyzed. However the term "job classification" carries with it the connotation that after it is classified nothing more is done; that is, no relationship is made

between the classification and the monetary return to the worker. The term "evaluation" however implies the relationship to the wage question.

During the first World War industrial concerns began to study jobs, write descriptions of them, and then rate them relatively to each other. This initial work did not progress too well until about 1924 when the first comprehensive plan was evolved. Other plans were then developed and the subject became of age. When unions intensified their activity after the National Labor Relations Act in 1935, management turned to job studies to defend their base wage rates at the bargaining table. The manufacturers' trade associations began developing their job evaluation systems about this time.

The advent of World War II demanded that many new employees be hired and companies with job evaluation programs found that they could expand rapidly and still keep the wage rates involved in these new positions in correct relationship with the existing rates established in the plant. A better selection of workers could be obtained and placed on the right job when the employers had a detailed explanation of the duties of each job in the company.

The development of job evaluation as a distinct management tool may then be said to have been divided into three phases.* The first phase, which ended in 1938-1939,
was the period in which the refinements of the techniques of job analysis, an intensive direct method for obtaining facts about jobs, were developed. The second phase, about 1939-1943, has been a period of refinements of the various systems in use and the literature of the period on job evaluation has been of the case method variety. The final phase, from 1943 to the present, has been characterized by literature evaluating job evaluation as it has been utilized, and also critical literature concerning various aspects of the subject. At present job evaluation techniques are being altered to answer some of the just criticisms.

The government also helped to establish job evaluation during the war by desiring occupational information. The Selective Service System needed definite, specific information concerning the duties involved in each particular registrant's civilian position. The War Labor Board Wage Stabilization policy approved job evaluation as one of the means of justifying and obtaining approval for a wage increase. To eliminate inequities, the War Manpower Commission had all jobs classified under the government coding system and as this classification system was used by the United States Employment Service, industry found it very beneficial for them to also classify their jobs so as to be able to use the government service being offered to them. The Manning tables used by the government to determine each industry's manpower needs also forced employers to consider the analysis and
classification of the various positions in their plants.

Thus job analysis and job classification were practically forced upon industry and it was an easy step for industry to carry this job analysis and job classification through a few more steps and the resultant was a job evaluation program for the particular plant.

E. The Significance of Merit Rating

Before proceeding with a description of job evaluation principles and methods, distinctions between it and other tools of modern management will be made in order to clarify the position of job evaluation in the overall management program.

Job evaluation is a separate technique from merit rating and from motion and time study. It is distinguished from merit rating in that job evaluation studies the job itself, there being no consideration given to the person holding the job. Merit rating has been defined as a systematic evaluation of an employee by his supervisor or by some other qualified person who is very familiar with the employee's performance on the job.* That is, in job evaluation only the job is studied and absolutely no consideration is given to the man occupying the job other than the requirements that he must have in order to fill the job. This is contrasted to merit rating in which no consideration is given to the job itself but the man

*16, p.320.
occupying the job is evaluated as to certain characteristics such as initiative, dependability, quality of work, and other items of this nature. Because of this fundamental distinction between the two, they can be used either separately or combined to supplement one another. The use of both evaluation and merit rating to supplement one another is illustrated in the following example.

In any job evaluation program in a factory the object of the program is to get the jobs rated in comparison to one another and then apply this rating to a pay scale to give the proper relationship between job requirements and pay. Referring to chart 1 on page 15 the hourly rate of pay is plotted as the ordinate and the job value as the abcissa. This job value is determined from job evaluation and will be explained in the next chapter as will the determination of line BE. This line BE is the functional relationship between the job value as determined from job evaluation and the wages that should be paid for the jobs. For instance a job that has been evaluated to have a job value of OG units should be paid OK wages. All the other wages of the various jobs would also be determined in this way and the proper relationship would be maintained between the evaluated job worth and the wages paid on the job. Up to this point only job evaluation principles have entered into the example.

Now considering merit rating, it is realized that of the many men on job G, some undoubtedly deserve more pay than
others because of seniority, low absentee record, etc. Therefore, management, wanting to reward some of the better men for their records, establishes a range of payment for job G. This range of payment is often set at ±10%, although many management men feel that a larger range is more desirable.

In chart I on page 15 the -10% line is CF and the +10% line is AD. Job G then may be said to have a wage range of JL, these points being determined by the job itself. Now whether wage OL, OK, or OJ or any point between them is to be paid to the worker is dependent on the merit rating of the employee. In other words, job evaluation determines the maximum and minimum but the employee determines his own position between the two as a result of his merit rating. Thus merit rating and job evaluation are a useful tool for management and can be used to supplement one another.

Job evaluation can also be applied when motion and time study are used by the employer and the pay is on an incentive system. Motion study is the study of movements, whether of machine or operator for the purpose of eliminating useless motions and standardizing methods, and time study is the act of observing and recording the time required to do each detailed element of an operation.* In applying these tools of management a motion study would be first made to simplify the job as much as possible and also to standardize the procedure.

*8, p.224.
CHART 1

JOB EVALUATION AND MERIT RATING DIAGRAM
Then the job would be evaluated and basic rates determined and established for it in relation to all other jobs in the plant. There is no difference in the job evaluation process because of the presence of the incentive system. The job evaluation would aid in determining the base rate for the job and a time study would determine the normal production on this job that should be put forth to equal the base rate. For anything over and above this output, the worker would be on an incentive wage system which is equalized with all the other workers' incentive wages since they are all dependent on the properly evaluated base rates. Therefore a job evaluation program aids in the installation of an incentive system and succeeds in getting all the jobs in their proper relationship. Nevertheless the value of the system still does depend primarily on the accuracy of the time studies.
III RANKING METHOD

A. Steps in Formulating a Plan

Since job evaluation is still in the primary stages of development, the men in the forefront of the field are not in complete agreement on all phases of the work, and so, in proceeding to investigate the setting up of a plan, the most widely accepted principles will be presented.

The main steps in laying out a complete job evaluation plan are:*

1. Determine the type of plan wanted.
2. Prepare job descriptions.
3. Install the job evaluation plan.
4. Make a labor-market wage survey.
5. Determine wage scales.

B. Types of Plans

There are four basic types of job evaluation plans and these are:

1. Ranking.
2. Grading.
3. Factor Comparison.
4. Point Method.

C. Ranking Method

1. How it Works

This method requires that an individual or preferably a committee rank all jobs according to relative value.

*14, pp. 6-7.
<table>
<thead>
<tr>
<th>Job Title</th>
<th>Consultant</th>
<th>Union Member</th>
<th>Union Member</th>
<th>Mg't Member</th>
<th>Mg't Member</th>
<th>Av'g Rank</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assembler, Bench</td>
<td>8</td>
<td>8</td>
<td>7</td>
<td>6</td>
<td>6</td>
<td>7.0</td>
<td>1.25</td>
</tr>
<tr>
<td>Automatic Screw Mach. Man</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>4</td>
<td>3</td>
<td>3.0</td>
<td>1.45</td>
</tr>
<tr>
<td>Crane Men</td>
<td>4</td>
<td>4</td>
<td>5</td>
<td>3</td>
<td>2</td>
<td>3.6</td>
<td>1.40</td>
</tr>
<tr>
<td>Drill-Press Operator</td>
<td>6</td>
<td>7</td>
<td>6</td>
<td>8</td>
<td>7</td>
<td>6.8</td>
<td>1.33</td>
</tr>
<tr>
<td>Electrician A</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>4</td>
<td>2.6</td>
<td>1.48</td>
</tr>
<tr>
<td>Helper</td>
<td>7</td>
<td>6</td>
<td>8</td>
<td>7</td>
<td>3</td>
<td>7.2</td>
<td>1.10</td>
</tr>
<tr>
<td>Janitor</td>
<td>10</td>
<td>10</td>
<td>9</td>
<td>9</td>
<td>9</td>
<td>9.4</td>
<td>1.02</td>
</tr>
<tr>
<td>Laborer</td>
<td>9</td>
<td>9</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>9.6</td>
<td>1.00</td>
</tr>
<tr>
<td>Plater</td>
<td>5</td>
<td>5</td>
<td>4</td>
<td>5</td>
<td>5</td>
<td>4.8</td>
<td>1.37</td>
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<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1.0</td>
<td>1.68</td>
</tr>
</tbody>
</table>

Chairman, Ranking Committee
November 10, 1954
# TABLE II

Final Key Job Ranking Table

<table>
<thead>
<tr>
<th>No.</th>
<th>Job Title</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Tool and Die Maker</td>
<td>1.68</td>
</tr>
<tr>
<td>2.</td>
<td>Electrician A</td>
<td>1.48</td>
</tr>
<tr>
<td>3.</td>
<td>Automatic Screw Machine Man</td>
<td>1.45</td>
</tr>
<tr>
<td>4.</td>
<td>Crane Man</td>
<td>1.40</td>
</tr>
<tr>
<td>5.</td>
<td>Plater</td>
<td>1.37</td>
</tr>
<tr>
<td>6.</td>
<td>Drill - Press Operator</td>
<td>1.33</td>
</tr>
<tr>
<td>7.</td>
<td>Assembler, Bench</td>
<td>1.25</td>
</tr>
<tr>
<td>8.</td>
<td>Helper</td>
<td>1.10</td>
</tr>
<tr>
<td>9.</td>
<td>Janitor</td>
<td>1.02</td>
</tr>
<tr>
<td>10.</td>
<td>Laborer</td>
<td>1.00</td>
</tr>
</tbody>
</table>

Chairman, Ranking Committee
November 16, 1954
The initial step here is the selection of key jobs in proper order. They are arranged and ranked according to the relative difficulty and responsibility inherent in each particular job. A committee is usually used for ranking in order to eliminate any personal bias and to obtain a broader outlook. The individuals on the committee can rank the jobs independently and then have an average taken or the committee might elect to work as a group and openly discuss each job deciding as a unit upon the job's rank. At any rate, after the key jobs are ranked the remaining jobs are placed on the scale by interpolation according to their relative value as compared to the various key jobs. It may be readily seen that the ranking system is very simple because it merely necessitates arranging the job descriptions in sequence. Table I shows a typical form employed by committee members in ranking jobs. Table II shows the final job rankings as they would appear in final form.

2. Merits

The merits of the ranking method may best be summed up as follows:* 

a. It is the simplest of all procedures and therefore takes little time or paper work; direct cost of the application is negligible.

b. This procedure eliminates personalities and thereby

*10, p.34.
is superior to old-fashioned rate setting.

c. If checked with outside standard job descriptions, it can give a practical but rough job classification. If that is the main objective, this is the quickest way to establish it.

d. It is a practical method, although crude, and avoids any hypocrisy of seeming to be scientific.

3. Limitations

The major limitations of this system are:

a. In order for the ranking method of job evaluation to be effective, all the judges must be thoroughly familiar with all of the jobs in the organization. In organizations of any size, it becomes an extremely difficult task to find enough well-qualified judges to rank or grade all jobs adequately.

b. This method is particularly vulnerable to the danger of unconscious bias in that, if known to the judges, the rates or salaries currently paid for the jobs are likely to influence the results. As a consequence of such knowledge, the rankings tend to degenerate into mere reflection of the existing rate of salary structure.

c. Ranking does not provide for definite concrete standards or criteria in terms of which the jobs should be

*14, pp. 57-59.
judged. Thus, one judge may evaluate some or all the jobs primarily in the light of the responsibilities involved, another in the light of education or experience, and the like. Even where several judges are using the same criteria, there is no assurance that the criteria have the same meaning for all.

d. Ranking suffers from the limitation that there are no recordable intervening steps between the initial condition of unranked jobs and the final rankings or grades. As a result, no substantiating record exists to justify to a critic the placement of the jobs in relation to one another.

e. There is no assurance in the case of ranking evaluations that the intervals between the jobs are at all comparable. Thus, two jobs that are ranked side by side may actually be much closer to one another in worth than to the jobs on either side of them without this fact becoming apparent.

f. This technique becomes increasingly more difficult and loses effectiveness rapidly as the number of jobs and the complexity of the organization increase. This is due largely to the fact that such a set of conditions makes it much more difficult for the judges to discover a common ground for comparison.
IV GRADING METHOD

A. Method of Operation

The grading method is but a more advanced form of the ranking method. As in the ranking method, the usual procedure is to set up a committee to do the grading. The committee first decides on the basic classifications under which the jobs will be placed such as unskilled laborer, skilled laborer, craftsman, administrative, etc. There is no uniformity of opinion as to how many classifications should be employed. The fact that American Rolling Mill Company uses eighteen classifications while the Westinghouse Electric Corporation divides its jobs into seven classifications is only one example of the lack of uniformity between similar sized companies.*

1. Typical Classifications

A hypothetical set of classifications for a wood screw machine shop might read as follows:

Class I

Jobs included in Class I are very simple. None requires over one month of experience and the majority can be learned satisfactorily in one week. Light laboring jobs such as janitor or sweeper and other unskilled jobs are in this class. Many jobs having to do with packing the product come in this category. Often the most difficult part of the job is

*25, p. lll.
that the worker must be on his feet nearly all of the time.

Class 2

This class includes more jobs and more employees than any other. Most of these are concentrated on the numerous semi-automatic machine feeding, sorting and inspecting jobs. Most of the laboring jobs in the plant also fall within this bracket. Helpers and service men as well as learners on machine jobs are for the most part included here too. So also are operators of relatively simple equipment. As a rule the experience requirements for jobs in Class 2 run between one week and three months. Responsibilities on these jobs are usually very small although they often rate high on effort.

Class 3

Almost as many jobs are included in Class 3 as in Class 2. Operators of machines of medium difficulty are included here. Inspection jobs involving responsibility and discretion are in this class. Most of the jobs involving learning or helping to set up and operate complex machines are Class 3 jobs, as are some maintenance jobs of semi-skilled variety. This class definitely is one covering semi-skilled jobs.

Class 4

The setting up and operating of most of the plant machines are included in this class. Class 4 also covers many maintenance jobs and a variety of individual jobs involving considerable skill. Few of these jobs can be learned
in less than one year and most require from one to three years of experience. Responsibilities on these jobs are usually substantial.

Class 5

Jobs in this class are all of a high degree of skill and as a rule take up to five years to learn. Most of them also involve substantial responsibilities for products and materials and frequently considerable responsibility for the work of others. Skilled maintenance jobs, setting up complex machines, and some floorman's jobs are included. These latter jobs include certain minor supervisory activities.

Class 6

Only jobs requiring a high degree of skill are in this class. Most of the small number of jobs included are floormen. On all of these, both the experience and responsibility demands of the jobs are high. The most highly skilled maintenance department jobs are also in Class 6, as are several machinist, toolmaker, and diemaker jobs. As a general rule, from five to eight years of experience is required on these jobs. An ability to work independently with only a small amount of supervision is characteristic of most of these jobs.

Class 7

This class covers jobs similar to those in Class 6 except that these are a little more exacting. There are only three jobs in this class. These are the Patternmaker, Toolmaker, Grade B, and the most difficult Floorman's job in the
plant. Eight to ten years of experience is required.

Class 8

Jobs in this class are the most difficult and require the most skill of any jobs in the plant. The men on these jobs are expected to be able to plan and carry out their work with little supervision. Only the top toolmaker and machinist jobs merit inclusion in this bracket, and these rank here largely because the men on this work must almost be machine designers to carry out their work. Much of the equipment in the plant is especially built, or is very old, and parts must be designed and made by these men. These jobs, calling for from eight to ten years of experience, are the top jobs in the plant.

Class 9

These are highly responsible positions involving a considerable amount of experience and training, both general and specific. Usually these workers are responsible for a group of operations of the company. Included are some jobs of more authority and responsibility than similar jobs in Class 8.

2. Committee Functions

After these classifications are decided upon, the committee fits the job descriptions into each classification. The committee then grades each job within the separate classifications. As can readily be seen, this grading system is really a ranking system applied twice since the jobs are actually given a ranking when they are put into classifications and they are then given a second ranking within each separate
classification.

Instructions to a member of the job classification committee might read as follows:

The Job Classification Committee has been established to make recommendations on the specific grade or class to which jobs should be assigned.

It is important that each member of the Committee study the job descriptions carefully and develop his own classification or grading of these jobs before the Committee meets. Differences in classification made by various members will be ironed out in the meetings.

As a member of the Committee it is important that you perform the following operations before the next meeting:

a. Read the job descriptions.

b. Group them into appropriate grades or classes. This step can be made as follows:

1. Read one job description carefully.

2. Read another job description carefully and then make a decision as to whether the second job should be put in the same classification as the first one or should be placed in a higher or lower classification.

3. Read a third job description and decide how this job compares with the first two jobs classified.
4. Repeat this operation until all other jobs have been classified.

You may have arranged the jobs in rank order or you may have decided that several jobs are of the same rank order. Notice that it is the job or job description that is classified - not the man on the job.

In ranking these jobs it may be of value to pay particular attention to the general difficulty of the job. In measuring this you can consider such factors as: a) length of training or experience required for the job, b) the number and variety of duties performed, and c) responsibility of the job as measured in terms of effect on cost, supervision of others, and safety of others. In appraising responsibility for supervision it may be desirable to consider the number of people supervised, the number of functions supervised, and the difficulty or importance of work supervised.

Be prepared to bring to the Committee meeting a summary of your recommendations. This summary should indicate the names of jobs assigned to each of the classes you were able to distinguish. It is probable that the minimum class can readily be discovered at present whereas the top class may not become apparent for some time.

At the meeting of the Committee the ratings or classifications given by each member will be summarized and tabulated in order that we may readily see how much uniformity of opinion exists. In your classification you may bear in mind...
the possibility of having a minimum number of classifications with a substantial range in rates.

B. Merits

Since the grading method is very similar in operation to the ranking method, the merits and limitations of each are quite similar. The advantages are:

1. It is one of the simplest of all procedures and therefore takes little time or paper work; direct cost of the application is almost insignificant.

2. It does much to eliminate personalities and thereby is superior to old-fashioned rate setting.

3. If checked with outside standard job descriptions, it can give a practical but rough job classification. If that is the primary objective, this is the fastest way to establish it.

4. It is practical although somewhat crude and avoids any hypocrisy of seeming to be scientific.

5. Some unions prefer it because it leaves more room for bargaining.

C. Limitations

The major limitations of grading are:

1. No one committee member is likely to be familiar with all the jobs.

2. Appraising each job as a whole does not allow any analysis

*10, p. 34.

**10, p. 34.
and therefore cannot be expected to give accurate measures of worth.

3. The ranking is likely to be influenced by the magnitude of existing rates.

4. Equal differentials are sometimes assumed between adjacent ranks and such an assumption is frequently incorrect.

5. Very liberal range limits must be provided to correct bad guesses.
V FACTOR COMPARISON METHOD

A. Operating Features

1. Fundamentals of Plan

To overcome many of the limitations of the ranking and grading methods, the factor comparison system of job evaluation was developed. This plan is often referred to as the Benge plan after one of the developers of the method. A committee is usually used in this plan as in the plans previously discussed. The committee generally selects ten to twenty key jobs which cover the pay range of the entire set of jobs to be evaluated. The next step of the committee is to determine the factors upon which the jobs are to be rated; the most used plans rate the jobs on mental requirements, skill requirements, physical requirements, responsibility, and working conditions.

2. A Typical System

To aid in the explanation of this factor comparison method, a typical installation will be shown.* The committee after some deliberation decides that the following ten jobs are to be considered key jobs and that their present rates of pay are correct. These key jobs and their pay scale per hour are:

- Patternmaker $4.84
- Machinist 1.76
- Substation Operator 1.64

*47, pp. 68-69.
Pipefitter $1.36
Painter 1.20
Poleman 1.04
Drill press Operator 1.00
Rammer .96
Carpenter's Helper .92
Laborer .84

The actual evaluation begins by having the committee rank these jobs considering only the mental requirements for the job. From highest to lowest this ranking may show that patternmaker ranks highest in mental requirements, followed by substation operator, machinist, pipe fitter, painter, drill press operator, carpenter's helper, poleman, laborer, and rammer. These key jobs are then ranked on skill requirements, physical requirements, responsibility, and finally on working conditions.

When the committee has ranked these key jobs five times, that is for each of the five factors, the results would be as shown in Table III.

The next step is to consider these key jobs in relation to their existing, agreed upon, wages. This is done by listing the jobs vertically, ranking from highest to lowest in pay, and listing the five factors horizontally upon which the jobs are being examined. The committee then must break down the hourly rate into a certain amount for each factor. For example the committee determines that the $1.84 per hour being
### TABLE III

Final Job Rankings by Factor

<table>
<thead>
<tr>
<th>Rank</th>
<th>Mental</th>
<th>Skill</th>
<th>Physical</th>
<th>Responsibility</th>
<th>Working Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Patternmaker</td>
<td>Patternmaker</td>
<td>Rammer</td>
<td>Substation Op.</td>
<td>Rammer</td>
</tr>
<tr>
<td>2</td>
<td>Substation Op.</td>
<td>Machinist</td>
<td>Poleman</td>
<td>Patternmaker</td>
<td>Poleman</td>
</tr>
<tr>
<td>3</td>
<td>Machinist</td>
<td>Substation Op.</td>
<td>Laborer</td>
<td>Machinist</td>
<td>Laborer</td>
</tr>
<tr>
<td>4</td>
<td>Pipe fitter</td>
<td>Pipe fitter</td>
<td>Pipe fitter</td>
<td>Pipe fitter</td>
<td>Pipe fitter</td>
</tr>
<tr>
<td>7</td>
<td>Carpenter's Help</td>
<td>Carpenter's Help</td>
<td>Patternmaker</td>
<td>Carpenter's Help</td>
<td>Machinist</td>
</tr>
<tr>
<td>8</td>
<td>Poleman</td>
<td>Poleman</td>
<td>Carpenter's Help</td>
<td>Poleman</td>
<td>Carpenter's Help</td>
</tr>
</tbody>
</table>

Source: U. S. Employment Service
paid to a patternmaker is made up of 53.6¢ for mental requirements, 20.4¢ for physical requirements, 66.8¢ for skill requirements, 31.6¢ for responsibility, and 11.6¢ for working conditions. These values are in fractions of a cent because the committee usually decides on the monetary breakdown independently and the average of their judgement is employed. This value is then rounded off to the nearest whole cent. This monetary breakdown of the present wage is then done for all the remaining key jobs. The result of the committee's work is indicated in Table IV.

Table IV then must be compared with Table III to see that there is complete agreement between the two tables. It is not uncommon to find that the committee, in settling the monetary value for each factor inherent in the job, has altered the ranking under the various factors so that it differs from what appears in Table III. The committee must then correct these discrepancies between the Tables before proceeding to the next step.

The next table which the committee makes has the five factors, on which the job is rated, arranged horizontally and the pay per hour for each factor arranged vertically. This can be done with the data from the previous two tables.

Thus Table V is used by the company to rate the remaining jobs. For instance if the job of timekeeper is to be rated, the committee first decides how it should rank under the factor of mental requirements. Looking at the ranking of the key jobs in Table III the committee decides that timekeeper
<table>
<thead>
<tr>
<th>Job</th>
<th>Present Time</th>
<th>Mental</th>
<th>Physical</th>
<th>Skill</th>
<th>Responsibility</th>
<th>Working Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patternmaker</td>
<td>184</td>
<td>53.6</td>
<td>20.4</td>
<td>66.8</td>
<td>31.6</td>
<td>11.6</td>
</tr>
<tr>
<td>Machinist</td>
<td>176</td>
<td>43.4</td>
<td>24.4</td>
<td>64.2</td>
<td>27.6</td>
<td>16.4</td>
</tr>
<tr>
<td>Substation Operator</td>
<td>164</td>
<td>49.8</td>
<td>8.2</td>
<td>42.2</td>
<td>55.4</td>
<td>8.4</td>
</tr>
<tr>
<td>Pipe Fitter</td>
<td>136</td>
<td>22.2</td>
<td>28.0</td>
<td>40.2</td>
<td>24.4</td>
<td>21.2</td>
</tr>
<tr>
<td>Painter</td>
<td>120</td>
<td>20.2</td>
<td>21.6</td>
<td>37.6</td>
<td>21.2</td>
<td>19.4</td>
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<td>38.4</td>
<td>14.4</td>
<td>13.8</td>
<td>26.2</td>
</tr>
<tr>
<td>Drill Press Operator</td>
<td>100</td>
<td>17.6</td>
<td>16.4</td>
<td>28.4</td>
<td>21.0</td>
<td>16.6</td>
</tr>
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<td>Rammer</td>
<td>96</td>
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<td>8.4</td>
<td>10.0</td>
<td>27.4</td>
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<tr>
<td>Carpenter's Helper</td>
<td>92</td>
<td>15.6</td>
<td>18.0</td>
<td>26.4</td>
<td>17.8</td>
<td>14.2</td>
</tr>
<tr>
<td>Laborer</td>
<td>84</td>
<td>11.0</td>
<td>35.4</td>
<td>6.0</td>
<td>8.2</td>
<td>23.4</td>
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</tbody>
</table>

Source: U.S. Service
<table>
<thead>
<tr>
<th>Cents/hr.</th>
<th>Mental</th>
<th>Skill</th>
<th>Physical</th>
<th>Responsibility</th>
<th>Working Cond's</th>
</tr>
</thead>
<tbody>
<tr>
<td>66</td>
<td></td>
<td>Patternmaker</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>65</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>64</td>
<td></td>
<td>Mechanist</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>63</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>61</td>
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<td>54</td>
<td></td>
<td>Patternmaker</td>
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<tr>
<td>53</td>
<td></td>
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<td>52</td>
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TABLE V (Continued)

Final Monetary Value Schedule

<table>
<thead>
<tr>
<th>Cents/hr.</th>
<th>Mental</th>
<th>Skill</th>
<th>Physical</th>
<th>Responsibility</th>
<th>Working Cond's</th>
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<td></td>
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<tr>
<td>50</td>
<td>Substation Op.</td>
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<td>49</td>
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<tr>
<td>44</td>
<td>Machinist</td>
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<td>Remmer</td>
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<tr>
<td>43</td>
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<tr>
<td>42</td>
<td></td>
<td>Substation Op.</td>
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<td>41</td>
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<td>40</td>
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<td></td>
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<td>Pipe Fitter</td>
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<td></td>
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<td>Poleman</td>
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<td>38</td>
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<td>Painter</td>
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<td>Poleman</td>
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<td>37</td>
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<tr>
<td>Cents/hr</td>
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<td>Skill</td>
<td>Physical</td>
<td>Responsibility</td>
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<tr>
<td>36</td>
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<td>Laborer</td>
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<td>35</td>
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<td>32</td>
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<td>Patternmaker</td>
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<tr>
<td>28</td>
<td></td>
<td>Drill-press Oper.</td>
<td>Pipe fitter</td>
<td>Machinist</td>
<td>Rammer</td>
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<tr>
<td>27</td>
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<tr>
<td>26</td>
<td></td>
<td>Carpenters Help.</td>
<td></td>
<td></td>
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<tr>
<td>25</td>
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<td>Machinist</td>
<td>Pipe fitter</td>
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<tr>
<td>Cents/hr.</td>
<td>Mental</td>
<td>Skill</td>
<td>Physical</td>
<td>Responsibility</td>
<td>Working Cond's</td>
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<td>14</td>
<td></td>
<td>Poleman</td>
<td>Poleman</td>
<td>Carpenter's Help</td>
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<td>13</td>
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<tr>
<td>12</td>
<td></td>
<td>Poleman</td>
<td></td>
<td>Patternmaker</td>
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<td>11</td>
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<tr>
<td>10</td>
<td></td>
<td>Laborer</td>
<td>Remmer</td>
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<td>9</td>
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<td>7</td>
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<tr>
<td>Cents/hr.</td>
<td>Mental</td>
<td>Skill</td>
<td>Physical</td>
<td>Responsibility</td>
<td>Working Cond's</td>
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<tr>
<td>6</td>
<td>Rammer</td>
<td>Laborer</td>
<td></td>
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</tr>
</tbody>
</table>

Source: U.S. Employment Service
ranks between substation operator and machinist as to mental requirements. A comparison with Table V immediately shows that a timekeeper should receive between 45¢ to 49¢. The committee upon deciding this, adds the job of timekeeper to mental requirements column of Table V. The same procedure is used by the committee to determine the monetary value of the other four factors. The total hourly pay for the job is simply the sum of the pay for the individual factors. As all of the other jobs are evaluated, Table V gradually includes all the jobs in the plant.

Fundamentally, then, the method introduces a monetary scale into a system of ranking which recognizes a number of job characteristics rather than composite parts.

B. Merits

The merits of the factor comparison plan may be summed up as follows:

1. The intervening steps taken in the method by the committee are definite and can be either shown or explained to any dissatisfied parties.

2. Since the jobs are broken into characteristics rather than being considered in their entirety, it is a system more conducive to accurate results.

3. This method is much more definite and concrete than either of the two previously explained and therefore is more adaptable to application in larger plants.
4. Another advantage is flexibility in that there is neither top nor bottom limits to confine the relative positions into which the various jobs may be placed.

C. Limitations

Major limitations are the following:

1. Probably most important, the factor comparison method is difficult to explain to employees due to its rather intricate makeup, and hence is hard to sell.

2. It is rather difficult to initially set up, that is, getting the agreement of the committee on the rank of each of the key jobs under each factor. It is even more difficult to get agreement on the monetary breakdown for each factor on each job unless an average is taken.

3. Another limitation of the plan is its inflexibility. If the plant conditions necessitate the re-ranking of any job, it may be necessary to also re-rank many other jobs particularly if the initial job is one of the key jobs upon which the ranking of the other jobs depends to a great degree.

4. Also, union and management will be faced with increasing collective bargaining difficulties, for this further complicates the method and magnifies one of its limitations.
VI POINT METHOD

A. Mode of Operation

1. Employers' Groups

The fourth main method of job evaluation is the point system. The point rating method compares the characteristics of a job with a set of standards, awarding points to an occupation in proportion to a degree of presence of the requirements and conditions measuring the worth of the job.* This is the most common type of plan in operation today, although many companies have their own minor variations of the system. The point plans most in use have been adapted from the plan developed by the National Electrical Manufacturers Association and the National Metal Trades Association. These employers' groups have installed this plan in over 2,000 plants of varying size throughout the country.**

2. Factor Determination

To set up a point system method of job evaluation the factors on which the jobs are to be rated are first determined. This is the main source of variation between most of the plans. After the factors are determined, the committee, which is also usually employed in this method, must decide upon the number of degrees of variation which will be allowed in each factor. Five degrees are customary although there is no uniform agreement in the various plans. The committee then

*12, p. 47.
**14, p. 29.
has to decide on the weighting which will be given to each factor and to each degree within the factor.

The selection of the factors upon which to rate the jobs is the committee's first problem. The National Electrical Manufacturer's Association - National Metal Trades Association point plan considers the factors of skill, effort, responsibility, and working conditions. These four factors are further broken down into a total of 11 sub-factors. Table VI indicates the manner in which the points are assigned under this plan.

The occupational rating plan of the Industrial Management Society is a point plan and advises rating on eleven factors. These factors are: physical effort; hazard; job conditions; supervision; responsibility for the safety of others; responsibility for equipment and materials; knowledge of equipment, methods and materials; schooling; judgement and initiative; mental capabilities; and physical skill.

Another system of evaluation by the point method also rates on eleven factors and defines them as: human relations, getting along with people; analytical ability, figuring out what to do; going ahead despite difficulties; adaptability, coping with new situation; responsibility, being reliable and dependable; thoroughness; physical conditions; knowledge or knowing how; education or knowing why; and training or showing how by doing.*

*46, p. 30.
<table>
<thead>
<tr>
<th>FACTORS</th>
<th>POINTS ASSIGNED TO DEGREES</th>
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<tbody>
<tr>
<td></td>
<td>1st.</td>
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<tr>
<td>Skill 50%</td>
<td></td>
</tr>
<tr>
<td>1. Education</td>
<td>14</td>
</tr>
<tr>
<td>2. Experience</td>
<td>22</td>
</tr>
<tr>
<td>3. Initiative and Ingenuity</td>
<td>14</td>
</tr>
<tr>
<td>Effort 15%</td>
<td></td>
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<tr>
<td>4. Physical Demand</td>
<td>10</td>
</tr>
<tr>
<td>5. Mental or Visual Demand</td>
<td>5</td>
</tr>
<tr>
<td>Responsibility 20%</td>
<td></td>
</tr>
<tr>
<td>6. Equipment or Process</td>
<td>5</td>
</tr>
<tr>
<td>7. Material or Product</td>
<td>5</td>
</tr>
<tr>
<td>8. Safety of Others</td>
<td>5</td>
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<tr>
<td>9. Work of Others</td>
<td>5</td>
</tr>
<tr>
<td>Job Conditions 15%</td>
<td></td>
</tr>
<tr>
<td>10. Working Conditions</td>
<td>10</td>
</tr>
<tr>
<td>11. Unavoidable Hazards</td>
<td>5</td>
</tr>
<tr>
<td><strong>Total (Maximum)</strong></td>
<td></td>
</tr>
</tbody>
</table>

*25, p. 114.*
The extreme in point systems seems to be one which rates the job on thirty-six different factors, namely: strength; physical pace or energy; learning time; education; responsibility; analysis; foresight; judgement; management ability; alertness; steady nerves; initiative; originality; adaptability; memory application; accuracy of calculation; accuracy of measurement; accuracy of selection; accuracy of reading; danger; eyestrain; contact on body; dirt; dust; wet; fumes; noise; monotony; heat of air; heat of contact; heat of radiation; effect on clothing; and tool cost.*

The selecting of the factors to be used by any company is a difficult choice and upon it hinges much of the success of job evaluation undertaking. Each company has to rate on the factors which best suit its peculiar, local condition. As can readily be seen from the aforementioned plans, there is no agreement as to what the factors should be upon which the job is to be rated.

In choosing these factors there is also the problem of duplication. The factors must be chosen in such a way that the same attribute of the job will not appear under two or more factors. If this situation should occur, it would mean that this attribute was being given more weight than it should have in the final job value determination. The tendency seems to be toward having a job rated on as few factors

*15, pp. 57-65.
as possible. In this way the chances of overlapping of the factors is substantially reduced.

After the factors have been considered and settled by the committee, the problem of the respective weights for each factor must be decided. It is to be noted in Table VI that the National Electrical Manufacturer's Association - National Metal Trades Association plan gives 50 per cent of the points to skill, 15 per cent to effort, 20 per cent to responsibility, and 15 per cent to job conditions. In the other point plans in operation with different factors, the weighting is also different. Each company has its own variation but this weighting of the points and factors selected has to be considered only for one plan. There is nothing wrong with the plans because they differ in minor respects from plant to plant. It is only necessary that a fair evaluation be given to the jobs in each plant and as long as the evaluation is consistent in regards to factors and weighting, the correct relationship of pay for the jobs should exist within each plant.

3. Point Determination

Usually a few factors are intentionally weighted heavily so that all of the other factors do not count too strongly and they can be consolidated into one or two overall factors. The range of points assigned to each factor must be carefully considered so that they are in complete agreement with the desired weighting. It is possible to have the range
of assigned points completely counteract the desired weight-
ing so that the plan is basically incorrect, and therefore it
is necessary to give careful consideration to the question of
the point range for each factor.

After the factors and the weighting have been estab-
lished by the committee, they must decide upon the minimum to-
tal number of points. This determination will automatically
fix the number of points for the first degree of skill under
each factor, or referring to Table VI, column one would be de-
termined. Consideration then has to be given by the committee
to the number of points for the other degrees of attainment.
The usual procedure is to have an arithmetic progression up
through the five degrees and so the points are easily assigned.
The National Electrical Manufacturer's Association - National
Metal Trades Association plan employs this arithmetical pro-
gression of points.

4. Factor and Degree Definitions

One of the greatest problems faced by the committee
is that of trying to rate jobs on the basis of poorly defined
factors and degrees. Endless and unnecessary discussion re-
sults from definitions that are not clear and concise and in
which simple language and correct nomenclature are not used.
It is imperative that the group doing the ratings use lucid
terms understood by all in writing up factor and degree de-
finitions.

An illustration of good factor and degree definition
is found in the National Electrical Manufacture's Association-Metal Trades Association plan. The following are the factor and degree definitions for Visual or Mental Demand (factor 5 in Table VI) employed in their point rating plan.*

"Mental and/or Visual Demand. - This factor measures the job requirements which induce mental fatigue and/or visual strain in terms of duration of time that mental and/or visual application is required, and the required intensity of such application. It does not relate to the degree of intelligence or mental development but to the quantity and concentration of mental application.

First Degree. - Little mental and only intermittent visual attention since either the operation is practically automatic or the duties require attention only at long intervals.

Second Degree. - Frequent mental and/or visual attention where the flow of work is intermittent or the operation involves waiting for a machine or process to complete a cycle with little attention or checking.

Third Degree. - Continuous mental and/or visual attention where the flow or work is repetitive or the operation requires constant alertness.

Fourth Degree. - Must concentrate mental and visual attention closely, planning and laying out complex work; or co-ordinating a high degree of manual dexterity with close visual attention for sustained periods.

Fifth Degree. - Concentrated and exacting mental and visual attention, usually visualizing, planning, and laying out very involved and complex jobs."

B. Merits

The advantages of point rating are the following:

1. It is comparatively easy to set up because it demands a minimum of time and discussion by the committee in order to establish the essential items.

*12, p. 56.
2. Human judgement is at a minimum in point rating because of the standards provided by definitions.
3. The plan is easily adjusted to changing conditions. That is, if the content of some job changes, that job, and only that job has to be re-rated. All other evaluations and the basic system remain the same.
4. The point plan is very flexible and new jobs in the plant can be readily fitted into the existing program.
5. The larger number of factors forces the analysis of jobs, thus precluding over-all judgement and the possibilities of bias.
6. While more complicated than either ranking or grading, it is less complex than the factor comparison method and lends to ready explanation and salability to employees.
7. Point rating requires the maintenance of permanent records which are useful in substantiating evidence of job appraisals if questioned by the union or any other party involved.

C. Limitations

The major disadvantages of point rating are:
1. The plan, like most others, is still dependent to a great degree upon the judgement of the people evaluating the jobs. The points seem to lend an air of mathematical precision to the method which is not the case.
2. The point method is often made much more complicated by getting into more detail on the plan than is necessary.
VII JOB DESCRIPTIONS AND MARKET SURVEY

A. Job Descriptions

1. Contents and Procedure

Having now considered the four main methods of job evaluation, attention will now be given to other steps which are necessary in every job installation regardless of the type plan used. The first and most important item for use in any of four job evaluation plans is a properly prepared job description. These job write-ups should properly describe the job in all important respects, particularly with detail as to job title; summary of the job; work performed; tools, equipment, and materials used; physical surroundings; and employee attributes.*

These descriptions should vary from company to company so as to be of greatest use for their particular plan. These descriptions should then greatly facilitate the evaluation of the jobs. A typical job description, prepared by the American Optical Company which rates on a slightly modified version of the Industrial Management Society point plan contained the following material:

"Repair and Develop Lens Edging Machinery

Summary

Diagnoses trouble, repairs, and replaces parts of lens edging machines. Develops new parts or new methods for edging according to the needs of the job at hand. Uses customary machines and gauges

*14, p. 68."
of the machinist's trade. Works to fine tolerances, and reads blueprints. Plans machine use to suit production schedule of assorted special lenses.

General

Job Knowledge and Skill - Trade school equivalent in schooling is necessary together with sufficient experience at the machinist's trade to have a thorough understanding of it. Must know how to use machine shop equipment: lathe, drills, grinders, and shapers and work to fine tolerances with the aid of various gauges such as verniers, calipers, micrometers, and scales. Must be able to read blueprints and to sketch ideas for improvements to parts or edgers used for new or special lenses.

Needs eye-hand coordination in doing machining operations to close tolerances and in subsequent fitting and adjusting of machinery. A variety of motions are involved, complicated by the tolerances to be kept, machinery used, and adjustments needed.

Judgement - Diagnoses trouble in machinery and makes adjustments as need is indicated.

Initiative - Uses general mechanical principles and understanding of specific edging problems to develop new attachments or cams for use in edging. Must eliminate future problems by high grade workmanship and by careful planning of sequence of operations done in working on machinery. Schedules work for operators according to best machine utilization.

Personal - Contacts with supervisors and operators, in course of work, involves ordinary cooperation and tact.

Executive - Not applicable.

Responsibility - Makes decisions which control final size of finished lenses and which affect operation of expensive machinery. Can spoil material and be responsible for loss of cost of labor by failure to stay within close tolerances required.

Effort - Does a great deal of walking and standing. Assumes awkward positions occasionally in working on machinery. May work under tension to meet schedules for production. Experiences some eye-strain in working to close tolerances.
Working Conditions - Walks on cement floor and is subject to exposure to water and dust; comes in contact with oil and grease. Room noisy from constant operation of machines."

In the preparing of a set of job descriptions particular care should be taken so that the same jobs are not described under many different titles, but each title should be a separate and distinct job. The information for the write-up can be obtained from personal observation and interview and discussions with both supervisor and worker. It is important that good relations exist between the job writer and the worker so that maximum cooperation can be obtained. The following procedure has been recommended:

a. "The proper official should be contacted to get permission to make the study and his assistance requested in planning the program of study, the jobs on which to start, the personnel to work with in each department and the order to be followed.

b. The official should notify the heads and the foreman of the departments affected of the purposes of the study.

c. The names of the analysts engaged in the study should be submitted.

d. The foreman should be consulted regarding the best job stations in which to observe typical tasks and on which there are workers who will not be disturbed by being observed. The foreman should explain to the workers the purpose of the observation.

e. Prior to observing the job, the analyst should obtain an overall picture of the operations and determine each job's relationship to the entire process.

f. Talk with the worker only with the permission of the foreman and then as little as possible in order to not

*47, pp. 57-58.
disturb him."

Naturally these job descriptions, if they are prepared in full detail, can also be of great use to the personnel department when they are hiring people for various jobs. Also they can be used to decide if training programs are adequate and necessary, for cost analysis work, and as a tool for other phases of modern management.

B. Installing the Plan

When installing any job evaluation program, it is of prime importance that it be received favorably by the workers. All of the people involved in the installation should be present when all policy-making meetings are held. No secrets should be kept on the plan, but to the contrary, the more information given on the plan the better will be its reception. In setting up the plan the committee should make arrangements for the study and possible revision of the plan which may result from grievances arising out of the plan. The installing committee should make arrangements to have the whole job evaluation program explained to the workers. One method of getting this information to the workers has been the use of visual aids such as animated pictures and cartoons.*

C. Monetary Relationships

After the jobs have been evaluated by the committee and information has been given on the whole program, the management may, and usually does, relate the job value to the

*27, pp. 72-74.
monetary return of the job holder. This can be done for all of the job evaluation methods with the exception of the fact­or comparison method, the job monetary value is automatically determined in the evaluation process. The normal procedure the management follows is to first plot a scatter diagram of the existing rates. The scatter diagram has pay per hour plotted as the ordinate and the job value as determined by the evaluation plotted as the abcissa. A sample scatter diagram with the job value in point form is shown in Chart 2.

This diagram immediately shows that there is no uniform policy of wage payment in this particular plant. That is some jobs with a high point value receive low pay while other jobs with a low point value receive high pay. The management must determine the correct relationship between these points and the monetary return to the worker. The usual procedure is to have a straight line relationship between the two such as the line AB in Chart 2. There is still much discussion among the proponents of job evaluation plans as an aid in wage administration as to what form the relationship between pay and job value should take. The majority opinion definitely favors a straight line relationship instead of any curved association. This straight line does not pass through the origin but intercepts the ordinate, and usually has a slope angle of less than forty-five degrees.

D. Labor Market Survey

1. Significance of Chart 2
CHART 2
CONVERSION LINE AND SCATTER DIAGRAM
In order to determine the exact position of the line, similar to the preferred line, for each particular plant, the first step is to make a survey of the wage structure of plants in the same geographical area and also plants in the same industry. It should be noted that a plant is not only in competition with other plants in the locality for workers but is also in competition with plants in the same industry as to the competitive price of the product.

This survey is called a labor market survey. The management usually prepares a questionnaire so that it will be possible to know what rates of pay workers on jobs throughout the wage scale receive from other employers. These base rates being paid in other plants should be determined as well as shift differentials, bonuses, paid vacations, profit sharing plans, insurance plans, and all other items that enter into wages. The questionnaire should be presented personally to other companies and job descriptions of the companies should be compared so that there will not be any error caused by the other companies having the duties under a job title different from the first company.

These jobs which are compared with similar jobs in the area should be representative jobs in the industry ranging throughout the pay scale. The number of companies sampled has to necessarily vary with individual companies and conditions but it usually need not be more than eight or ten. After the data has been accumulated, it should be analyzed for the use
of the plant. This data presents the trend of wages in the area. Referring to Chart 2, the committee now has to put in the line similar to line AB which shows the relationship between the hourly pay and the evaluated point worth of the job.

The people working on the wage administration program plot the data from the wage survey. This is shown by the small circles in Chart 2. A straight line is then usually drawn through these points, as AB, and all wage payments in the plant will be determined from this line. Of course, not all circles will fall on this line, but their pattern should follow closely that of a straight line.

2. Line is Not an Absolute

The company may decide to be a leader in the locality and pay wages which are slightly above the labor market survey line or they may decide to pay the average rates. Often times other considerations enter into the actual wage line for the particular plant such as position of the plant in the industry, supply and demand for labor and other external factors. Actually then, this line determined by the labor market survey is usually just used as a guide and not as a law.

Referring to Chart 2, the employer observes that some jobs have been and are being overpaid while others are being underpaid. The problem of the overpaid job is much more difficult than that of the underpaid job. The latter can readily be handled by boosting the pay to the proper scale. However, to lower the pay of the overpaid worker would be sure to
cause bad labor relations. If possible, the overpaid worker should be promoted to a higher rated job which calls for his present earnings. Even if this cannot be readily accomplished, the overpaid worker should be maintained at his existing rates but the next person to occupy that particular overpaid job should occupy it at the rates determined by the evaluation procedure.

3. Labor Grades

The procedure followed by most companies is not to pay a different wage for every point value as determined by the evaluation. Instead the wage administrator divides up the jobs into about ten grades and pays only ten different rates throughout the plant. If a point system were used in the evaluation, such as the National Electrical Manufacturers Association – National Metal Trades Association plan, the points would probably range between 250 and 500. The usual procedure followed by the management would then be to have every twenty-five point range be a labor grade. That is 250-275 points would be grade 1; 276-300 points would be grade 2, etc.

As stated previously in this paper, there is usually a ±10 per cent range in the pay for each labor grade and the position of the worker within this range is often determined by merit rating techniques or perhaps it may be on seniority alone. In Chart 3, line AB is the wage relationship determined by the area wage survey; line EF shows the -10 per cent limit; and line GH is the +10 per cent limit. The abcissa
CHART 3
LABOR GRADES
contains the actual point values as determined by the evaluation and also the labor grades as determined by the committee. Referring to labor grade five, the pay to be given for this particular range of points falls within the area JKLM. Usually within this pay area the committee sets up three or four definite rates. This is illustrated in Chart 3 by labor grade five. A worker whose job is evaluated between 351 and 375 points is paid the base rate 03. Depending on the worker and his actions, in time or because of a good merit rating, the worker's pay level next would be 0T; then it might be further raised to 0U; and finally to 0V. It would be impossible to receive a higher rate of pay unless the job were changed and re-evaluated into pay grade six or the worker were transferred to a job in pay grade six.

This method which has been outlined is the most popular but it is by no means the only method of determining the actual pay for a job. Some companies do not prefer to have any range or breakdown into labor grades but prefer to pay along the line AB in Chart 3. Only about 25 per cent of the companies with job evaluation plans which aid in wage determinations do not use rate ranges but prefer to have only single rates for each job.* Lytle shows six methods of payment that can be developed from the initial straight line similar to line AB in Chart 3, and says that local conditions determine

*14, p. 128.
what should be used.*

4. Feasibility of Curved Line Relationship

This problem of determining the overall wage structure is a very controversial subject and there are numerous conflicting opinions. The method outlined in Chart 3 is the simplest and the one which is used in the greatest number of plants. Most of the variations accept the straight line as determined by the local wage picture survey but then modify the range limits, omit them entirely, or have different variations within the rate range.

However, some are now beginning to question the straight line and feel that some type of a curve should replace it. The straight line has a tendency to overpay all intermediate jobs relative to those on the end points. A straight line is an arithmetical progression and most point systems have the points for each degree within a factor increase in an arithmetical progression. There is a psychological law, Weber’s law of discrimination, that states, "When sensations or responses are in arithmetical relationship, the corresponding stimuli form a geometric series."** Perhaps then, semi-log paper should be used to plot the wage line and the rest of the procedure would be the same. The only difference then would be that the straight line would be on semi-log paper instead of regular paper. On the regular graph paper, it would be a

*10, pp. 188-191.
**10, pp. 175-176.
logarithmic curve. Again, these are speculations and at present there is no right or wrong of the matter.

After the company installs the plan, it must make provision to establish a satisfactory procedure to handle any real or fancied difficulties that might accrue because of the job evaluation system. The history of job evaluation has shown that management very often thinks that the task has been accomplished when the plan has been installed, but the installation must include a program, not merely a plan, because installation is but the beginning.*

All the jobs should be checked periodically to see if the job content has changed since the job was evaluated. If it has changed, the job should be evaluated again. Some proponents of these job evaluation programs advise checking the whole program about every six months. However in one very successful job evaluation program at the Atlantic Refining Company it has been found that an annual re-check of the jobs by the job analyst has been sufficient.**

After following these job evaluation principles which have been discussed, the job evaluation program should result in the establishment of fair and equitable rates among the jobs which have been rated.

*29, p. 497.
**35, p. 930.
VIII The Adams Machine Company

A. The National Metal Trades and Employers Association

Now that job evaluation fundamentals have been outlined, it may be well to look at a few systems as they operate within the framework of companies. Since the National Metal Trades and Employers' Association plan is one of the more popular job evaluation programs employed, a Worcester company having this system will be described in some detail.

Before describing the system, a few explanatory notes on the National Metal Trades and Employers' Association are needed to properly give the needed perspective to the description. The Worcester County office of this Employers Association has a staff of five, and they handle all aspects of job evaluation installation in very small manufacturing companies having on the average not more than forty or fifty employees. For installations in larger companies, the home office of the Association is called upon since the setting up of a system in a plant this large calls for more involved planning and a greater number of personnel to handle the task. Job Evaluation comprises but one function of the National Metal Trades and Employers' Association; the giving of assistance and advice in any reasonable area requested by a member company is its main area of operation.

B. Background of Adams Company

The facts to be given concern the Adams Machine Company of Worcester, Massachusetts. (The name "Adams Machine
Company" is fictitious in compliance with company wishes in presenting this case study.) The company's major products are rolling mills, wire machinery, gas producers, and combustion controls. The company has no union and employs approximately 650 workers, about 100 of this number being office and supervisory help. The Adams Company has had the National Metal Trades and Employers' Association plan of job evaluation for approximately twelve years. The company also uses a separate system of salary rating for the office and supervisory group and this plan too is of National Metal Trades origin.

C. The Factory Plan

1. Job Descriptions

Once a plan has been decided upon, the initial step after this is to draw up accurate job descriptions of all jobs. Mr. Paul Shepherd, job evaluation expert of the Adams Company, is in charge of keeping up this file, the initial descriptions having been written by National Metal Trades group personnel. Tables VII and VIII show typical job descriptions employed by the Adams Company.

To show how degrees and points are assigned, the following procedure is followed: First the National Metal Trades plan defines each factor and the degree in each factor. For example --

"Experience - Experience appraises the length of time usually or typically required by an individual, with the specified education or trade knowledge, to learn to perform the work satisfactorily from the standpoint of quality and quantity under normal supervision. Do not include apprenticeship
### TABLE VII

**Adams Machine Company**

**Job Description**

<table>
<thead>
<tr>
<th>Dept.</th>
<th>Total Points</th>
<th>279</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pattern Shop</td>
<td>Labor Grade 5 Class C</td>
<td></td>
</tr>
<tr>
<td>Job Title: Pattern Maker Wood</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Factors</th>
<th>Deg.</th>
<th>Pts.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education</td>
<td>4</td>
<td>56</td>
</tr>
<tr>
<td>Experience</td>
<td>3</td>
<td>66</td>
</tr>
<tr>
<td>Initiative and Ingenuity</td>
<td>3</td>
<td>42</td>
</tr>
<tr>
<td>Physical Demand</td>
<td>2</td>
<td>20</td>
</tr>
</tbody>
</table>

**Substantiating Data**

- **Use decimals, fractions, simple geometry, and trigonometry.**
- **Work from fairly complex drawings, parts, or models. Use shrink rule, scales calipers, etc.** Knowledge of foundry practice to insure patterns will produce sound castings with a minimum of foundry work. Able to operate all woodworking machines. Equivalent to formal apprenticeship training.

- **Over 2 and up to 3 years.**
  - **Diversified work. Plan layout and construct patterns generally of fairly simple design and construction. Includes babbitt molds, some very simple coring, and simple alterations and repairs to patterns in use. Usually follow standard work methods.** Judgement as to shrinkage and draft allowances, parting, etc. in interpretations of drawings when making alterations and repairs.

- **Light physical effort. Occasionally, handle heavy weight material. Operate woodworking machines.** Largely bench work.
### TABLE VII (Continued)

<table>
<thead>
<tr>
<th>Factors</th>
<th>Deg.</th>
<th>Pts.</th>
<th>Substantiating Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mental or Visual Demand</td>
<td>3</td>
<td>15</td>
<td>Continuous mental or visual attention working from fairly complex drawings, planning and laying out work and performing wide variety of operations requiring close attention, skill, and accuracy.</td>
</tr>
<tr>
<td>Responsibility for Equipment or Process</td>
<td>3</td>
<td>15</td>
<td>Use all types of woodworking machines such as lathes, rip saw, band and cut-off saws, planer, jointer, and drill press. Damage due to carelessness seldom over $50.</td>
</tr>
<tr>
<td>Responsibility for Material or Product</td>
<td>2</td>
<td>10</td>
<td>Pattern checker inspects all completed patterns before use. First casting checked on quantity runs. Probable cost of correcting errors in pattern-making seldom over $100. Chief responsibility with checker.</td>
</tr>
<tr>
<td>Responsibility for Safety of Others</td>
<td>3</td>
<td>15</td>
<td>Work flying from wood-turning lathe, broken band saws, or table saws, failure to shut off machine or replace guard when operating without guard (sometimes necessary), leaving pieces of material in machine, leaving exposed nails in patterns may cause lost-time injuries to others.</td>
</tr>
<tr>
<td>Responsibility for Work of Others</td>
<td>1</td>
<td>5</td>
<td>None</td>
</tr>
<tr>
<td>Working Conditions</td>
<td>2</td>
<td>20</td>
<td>Good working conditions. Usual woodworking noise.</td>
</tr>
<tr>
<td>Unavoidable Hazards</td>
<td>3</td>
<td>15</td>
<td>Exposed to lost-time injuries such as possible loss of fingers or hand; eye injury from splinters or chips.</td>
</tr>
<tr>
<td>Remarks:</td>
<td></td>
<td></td>
<td>Patterns such as: housing covers, gear boxes, bevel gears, pinions, small roll housings, small pinion housings, medium size guide equipment.</td>
</tr>
</tbody>
</table>
or trades training, which has been rated under Education. Include under Experience only the time required to attain production standards.

First Degree. - Up to three months.
Second Degree. - Over three months up to one year.
Third Degree. - Over one year up to three years.
Fourth Degree. - Over three years up to five years.
Fifth Degree. - Over five years."

Now in looking at experience on Table VII, the job description for the Pattern Maker Wood, it is noted that over two and up to three years is called for. This most nearly conforms with 3rd Degree under Experience. Looking back to Table VI, Experience in the 3rd Degree is worth sixty-six points.

Examining Table VIII, the job description for Saw Operator (Cut-Off Man), the required experience is over six and up to nine months. This conforms more closely to the 2nd Degree under Experience and Table VI discloses a point value of forty-four points.

Thus, each factor and degree is defined and the Point Table determines the points assigned to a factor as dependent upon the degree of presence of the factor indicated in the job description. Further explanation of other factors becomes purely academic and this should now be quite evident.

2. Committee

The Jobs are evaluated by the National Metal Trades analysts and they are approved by a management committee which includes the supervisor of the job, superintendent of the de-
TABLE VIII
Adams Machine Company
Job Description

Dept. Machine Shop-2nd. floor
Job Title: Saw Operator (Cut-off Man) Labor Grade 8
Total Points 215

<table>
<thead>
<tr>
<th>Factors</th>
<th>Deg.</th>
<th>Pts.</th>
<th>Substantiating Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education</td>
<td>2</td>
<td>28</td>
<td>Able to read, write, and use simple arithmetic. Use scale, square, and micrometers.</td>
</tr>
<tr>
<td>Experience</td>
<td>2</td>
<td>44</td>
<td>Over 6 and up to 9 months.</td>
</tr>
<tr>
<td>Initiative and Ingenuity</td>
<td>2</td>
<td>28</td>
<td>Repetitive work. Operate circular and band saws to cut materials to sizes specified on requisition. Set stops or measure bar stock to length. Select speeds and feeds to suit materials. Select materials from rack and return unused material to storage. Set up and operate a centering machine to center bar stock for lathes. Set up and operate a pipe threading machine to die-cut threads on pipes or shafts. Some judgement following detailed instructions in selecting materials; making set-ups and operating machines.</td>
</tr>
<tr>
<td>Physical Demand</td>
<td>3</td>
<td>30</td>
<td>Sustained physical effort handling heavy bar stock when clamping on machine. Minor portion of time waiting for cuts. Some heavy material handled by aid of hoist.</td>
</tr>
<tr>
<td>Mental or Visual Demand</td>
<td>3</td>
<td>15</td>
<td>Continuous mental or visual attention making set-ups, operating machines, and selecting materials.</td>
</tr>
<tr>
<td>Responsibility for Equipment or Process</td>
<td>2</td>
<td>10</td>
<td>Careless set-up or adjustment may cause damage to center drills, saws or blades. Damage seldom over $25.</td>
</tr>
<tr>
<td>Factors</td>
<td>Deg.</td>
<td>Pts.</td>
<td>Substantiating Data</td>
</tr>
<tr>
<td>---------------------------------</td>
<td>------</td>
<td>------</td>
<td>-------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Responsibility for Material or</td>
<td>2</td>
<td>10</td>
<td>Careless selection of proper material or cutting to wrong length may cause losses seldom over $25.</td>
</tr>
<tr>
<td>Product</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Responsibility for Safety of</td>
<td>2</td>
<td>10</td>
<td>Only reasonable care to own work necessary to prevent injuries to others, minor in nature if any. Usually work alone or in semi-isolated location.</td>
</tr>
<tr>
<td>Others</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Responsibility for Work of Others</td>
<td>1</td>
<td>5</td>
<td>None</td>
</tr>
<tr>
<td>Working Conditions</td>
<td>2</td>
<td>20</td>
<td>Good working conditions. May be dirty at times.</td>
</tr>
<tr>
<td>Unavoidable Hazards</td>
<td>3</td>
<td>15</td>
<td>Exposed to lost-time injuries such as crushed fingers or toes handling heavy bar stock; possible loss of fingers coming into contact with saw; falls from stepladders.</td>
</tr>
<tr>
<td>Remarks:</td>
<td></td>
<td></td>
<td>Machines: Napier Band Saw No. L-564</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Wiko Pipe Threader No. L-1499</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Whiton Centering Machine No. L-208</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Motch and Merriweather Circular Saw 4&quot; No. L-1615</td>
</tr>
</tbody>
</table>
partment, and the Vice President in charge of production. Approval by the committee, according to Mr. Shepherd, is almost automatic and a job once being evaluated is rarely, if ever, challenged by the committee.

The Metal Trades organization at regular intervals, usually two year periods, sends out a team from its national headquarters to check to see that the system is functioning smoothly and to answer any management queries on its ramifications.

3. Labor Grades

The Adams Company maintains ten labor grades which is consistent with the theory of the National Metal Trades plan. There is a constant percentage relationship between the associated rate ranges of these labor grades as shown in Chart 4. In other words, there is a much greater wage spread in grade 10 than regressively lower grade 1. This relationship is logical and in accordance with the generally accepted concept that the money range for the highest grade job should be wider than the money range for the lowest grade job. This theory is based on the assumption that it takes more time to acquire the necessary skill and proficiency on a higher grade job than on the low-grade job. The Adams Company has overlapping rate ranges and this too is indicated in Chart 4. This chart is meant to show relative information only and the wage scale is not necessarily in line with the actual wage scale of the Adams Company.
Chart 4
Labor Grades of Adams Machine Company

<table>
<thead>
<tr>
<th>Grade</th>
<th>Min.</th>
<th>Max.</th>
<th>Spread</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>$24</td>
<td>$29</td>
<td>$6</td>
</tr>
<tr>
<td>2</td>
<td>$28</td>
<td>$34</td>
<td>$7</td>
</tr>
<tr>
<td>3</td>
<td>$32</td>
<td>$39</td>
<td>$7</td>
</tr>
<tr>
<td>4</td>
<td>$36</td>
<td>$44</td>
<td>$8</td>
</tr>
<tr>
<td>5</td>
<td>$40</td>
<td>$49</td>
<td>$9</td>
</tr>
<tr>
<td>6</td>
<td>$44</td>
<td>$54</td>
<td>$10</td>
</tr>
<tr>
<td>7</td>
<td>$48</td>
<td>$59</td>
<td>$11</td>
</tr>
<tr>
<td>8</td>
<td>$52</td>
<td>$64</td>
<td>$12</td>
</tr>
<tr>
<td>9</td>
<td>$56</td>
<td>$69</td>
<td>$13</td>
</tr>
<tr>
<td>10</td>
<td>$60</td>
<td>$74</td>
<td>$15</td>
</tr>
</tbody>
</table>
Wages generally are five per cent higher than going rates in the community according to Mr. Shepherd. The company does not have a merit rating system for either factory or office.

D. The Office Salary Rating Plan

The National Metal Trades and Employers Association also have a salary rating plan for their members and this is employed by the Adams Machine Company. It takes a greater amount of skill to install this office salary rating plan since for the most part, the analyst is rating intangibles requiring a maximum of judgement on his behalf. In the factory, there were machine standards to govern his decisions but the office has no counterpart of the machine so a greater use of judgement is necessary.

The factors for office workers are: Education, Experience, Complexity of Duties, Supervision received, Errors, Contacts with others, Confidential data, Mental or Visual Demands, and Working conditions.

1. Job Descriptions

Once again job descriptions are used much as they are for the factory job evaluation system. Table IX is a typical job description for the Adams Company office and supervisory group. The assigning of degrees and points is quite similar to the procedure used in the factory plan and will not be labored further here.

The committee form of rating is similarly employed
## TABLE IX

**Salary Rating Specification**

**Position:** Secretary to District Sales Office

<table>
<thead>
<tr>
<th>Factors</th>
<th>Substantiating Date</th>
<th>Deg.</th>
<th>Fts.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Education</strong></td>
<td>Knowledge of stenography, typing, transcribing from written copy or other sources. Sufficient knowledge of English composition to avoid and detect grammatical errors. Familiar with filing, record keeping and other office routines. Equivalent to high school plus additional business school training.</td>
<td>2</td>
<td>30</td>
</tr>
<tr>
<td><strong>Experience</strong></td>
<td>Over 1 and up to 2 years.</td>
<td>3</td>
<td>60</td>
</tr>
<tr>
<td><strong>Complexity of duties</strong></td>
<td>Perform semi-routine secretarial and clerical duties involved in the operation of District Sales Office. Judgment necessary to take dictation and transcribe and/or compose correspondence and reports. Set up and maintain necessary files and records.</td>
<td>3</td>
<td>45</td>
</tr>
<tr>
<td><strong>Supervision Received</strong></td>
<td>Under general supervision of District Sales Manager proceeding alone on routine duties, but referring all questionable matters to superior.</td>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td><strong>Errors</strong></td>
<td>Probable errors in typing, transcribing, filing, may cause some confusion and delay. Most of work verified or checked by superior.</td>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td>Factors</td>
<td>Substantiating Data</td>
<td>Deg</td>
<td>Pts</td>
</tr>
<tr>
<td>-------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>-----</td>
<td>-----</td>
</tr>
<tr>
<td>Contact with Others</td>
<td>Regular contacts with others in company, officials, engineers, requiring tact and judgement in order to accomplish desired results.</td>
<td>3</td>
<td>20</td>
</tr>
<tr>
<td>Confidential Data</td>
<td>Regularly works with confidential data of an engineering nature which if disclosed may have minor adverse effects on company’s interest.</td>
<td>3</td>
<td>15</td>
</tr>
<tr>
<td>Mental or Visual Demand</td>
<td>Use of typewriter, taking and transcribing dictation requires coordination of mental and visual attention with manual dexterity.</td>
<td>3</td>
<td>15</td>
</tr>
<tr>
<td>Working Conditions</td>
<td>Usual office working conditions.</td>
<td>1</td>
<td>5</td>
</tr>
</tbody>
</table>

Position Description: Perform general secretarial duties, company activities at specific branch office. Receive, open, sort incoming mail. Answer incoming telephone calls and place local and long distance telephone calls. Take dictation and transcribe correspondence, reports, and memo from shorthand notes or transcription machine. Compose and type letters and telegrams of a routine nature, from notes or verbal instructions. Arrange interview, meetings, and appointments. Maintain records of calls and location of engineers when they are out of the office. Set up and maintain necessary files and records. Order necessary office supplies from home office and maintain adequate supply on hand. Make transportation and hotel reservations for engineers when requested. Perform such other secretarial duties as may be required to relieve Supervisor of minor duties.
as with the factory group and the labor grades number twelve rather than ten as with the former plan. The rate ranges are progressively greater on a constant percentage basis as before and they also overlap as previously.

E. Summary

1. Merits

To begin with, the National Metal Trades Association plan has already won rather wide acceptance on a nationwide basis and has withstood the test of time rather well. Since it is a point plan, it is readily understandable and can be easily explained to the worker.

It is a flexible plan and easily adapts itself to use for most manufacturing concerns. If Adams adds new jobs as the company doubtless will, the factors of the new job can readily be assigned points and degrees under this flexible system. Also, methods changes can readily be accounted for by readjusting the job descriptions and recalculating the proper number of points.

The system, once installed, is rather easy to administer and Mr. Shepherd finds very few problems arising under this point system.

2. Limitations.

The greatest limitation or danger sign for the future appears to be in the Adams Machine Company's complacent attitude in installing and administration of the plan. Little, if anything, has been done to sell the plan to the worker.
The company, feeling that the plan is a good thing, has gone ahead and installed it with little regard for worker participation or reaction to its application.

Such action is not in accord with the conclusions reached in this paper. The worker likes to be considered as a human being and certainly wants a voice in any matter which affects his job stature. If he is not allowed participation in this job evaluation venture, he should at least be informed of what is happening and the reasons behind it so that he might feel he is not left completely out of this management mechanism.

At present, Adams Machine Company has no union but the advent of a union is something that must be continually reckoned with. If a union were to be formed, it would be, indeed, interesting to note the workers' reaction to this point plan, having gained the position of voicing their opinion collectively.

Perhaps, they would have little to say against this plan since it is one of the best job evaluation plans used today, and yet, even a good plan can come to an untimely end because of poor management planning in selling the plan to the employee.
IX  The Worcester County Trust Company

A. Financial Institutions

While job evaluation is usually thought of in connection with the manufacturing industry, it is by no means limited in application to this one area. More and more, job evaluation is being adopted by financial institutions such as banks and insurance companies since it is equally useful in office and supervisory ranks as it is in production fields.

In the previous chapter, job evaluation for the Adams Machine Company had two facets, a point system for the factory and a separate and distinct point plan for the office. It will be of interest to examine the workings of a job evaluation plan for a financial institution such as a bank to show similarities and dissimilarities between industrial and financial applications.

B. Background of Worcester County Trust Company

The Worcester County Trust Company is Worcester's largest bank in terms of assets and number of employees. This commercial bank has recently undergone a million dollar renovation and remodeling and is one of the most modern banking houses in Massachusetts. It is located in a five-story building at 446 Main Street in the heart of Worcester. It maintains its own cafeteria for some 425 employees and has a reputation for being one of Worcester County's most progressive banking institutions. There are branches of this bank in Barre, Fitchburg, North Brookfield, Southbridge and
Spencer as well as two drive-in branches in the city of Worcester. The bank also has the distinction of being the oldest trust company in the state of Massachusetts.

C. Factor Comparison Plan

In November of 1953, the company decided to install a factor comparison system of job evaluation. First, a system of number codes were drawn up to facilitate filing and handling of different jobs. For instance, in the one-hundred group, the breakdown is as follows:

Executive --

<table>
<thead>
<tr>
<th>Department</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trust Dept.</td>
<td>110</td>
</tr>
<tr>
<td>Credit Dept.</td>
<td>120</td>
</tr>
<tr>
<td>Commercial Account Dept.</td>
<td>130</td>
</tr>
<tr>
<td>Etc. up to</td>
<td>190</td>
</tr>
</tbody>
</table>

In like manner, the two-hundred group is composed of administrative jobs and when the seven-hundred group is reached, the floor men and janitors will come under this heading. The numerical system is so employed so as to leave ample room for other positions to come into existence as the company expands.

The employee is rated on five factors. These along with their definitions are:

1. Knowledge and skill -- The basic background which is needed to meet the responsibilities of the job in order for the employee to work competently.

2. Human Relations -- The employee's responsibility for good humor, tact, and understanding in dealing not
only with customers, prospective customers and the public, but also dealing with other staff members and superviors within the Bank.

3. Judgement -- The number, kinds and complexity of decisions the employee is required to make.

4. Responsibility -- The extent to which the employee's decisions and carefulness bear upon the safety of money, securities, and other valuable property belonging to either our customers or the Bank.

5. Working Conditions and Physical Effort -- The extent to which the employee's surroundings and physical exertion make the job more difficult.

When the system was first installed, ten key jobs were chosen and these have been used as a basis for all other ratings. In other words, the degree of presence of each of the listed factors in these key jobs has been used as a benchmark in all other ratings of other jobs.

1. Job Descriptions

Job descriptions are prepared by the employee doing the job and once he signs the description indicating his approval, the department head reviews the job descriptions and if meeting with his approval, he signs it and then it goes to the job evaluation committee for evaluation.

The company has a fifteen page brochure for employees and supervisors showing the correct way to make out a job description. It covers information on defining duties, choice
<table>
<thead>
<tr>
<th><strong>TABLE X</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Job Description</strong></td>
</tr>
<tr>
<td><strong>Date</strong>: 9-18-54</td>
</tr>
<tr>
<td><strong>Job Name</strong>: Auditing Dept. Sec.</td>
</tr>
<tr>
<td><strong>Department</strong>: Auditing</td>
</tr>
<tr>
<td><strong>Office</strong>: Main Office (MO)</td>
</tr>
</tbody>
</table>

**Function**: Under supervision of Auditor (025) Types reports schedules. Takes, Transcribes letter, memos; verifies income received from sale of Treasurer's Register, checks, exchange received on collection items; Proves bank checks outstanding.

<table>
<thead>
<tr>
<th><strong>Approx. % of Time</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1.</strong> Types reports, schedules of Auditing Department (AUD) examinations of all departments, offices; Compiles, Types reports in reply to outside auditors, accountants' requests for information pertaining to borrowers, depositers; Takes, Transcribes letters, memos for (AUD) personnel.</td>
</tr>
<tr>
<td><strong>2. a.</strong> Receives Auditors' stubs of Treasurer's Register, certified checks from all Worcester offices; Machine Totals; proves with controls on daily Statement of Condition.</td>
</tr>
<tr>
<td><strong>b.</strong> Receives paid Treasurer's Register, certified, dividend checks from Bank Ledger Bookkeeper (265); Checks for endorsement; Sorts by number; Removes corresponding check stubs; Machine lists checks, stubs; Proves with controls on daily Statement of Condition.</td>
</tr>
<tr>
<td><strong>c.</strong> Machine Totals current dividend checks each quarter; Proves to dividend payment declared by Board of Directors (BD).</td>
</tr>
<tr>
<td><strong>d.</strong> Proves outstanding Treasurer's Register, certified, expense, dividend checks semi-monthly to (AUD) controls; Microfilms outstanding stubs (list only for Register checks.)</td>
</tr>
</tbody>
</table>
**TABLE X (Continued)**

**Job Name:** Auditing Department Secretary  
**Job No. 250**

<table>
<thead>
<tr>
<th>Approx. % of Time</th>
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</thead>
</table>

3. **a.** Audits daily exchange received by Worcester, Southbridge, Fitchburg Collection Departments on collection items; verifies credit to income account in Accounting Department (ACD).

   **b.** Verifies daily income received from sale of Register checks in all offices with (ACD) credits to Register check income account.

4. Lists, by office, daily income received from sale of Treasurer's Checks; Compiles annual total for use in Income and Expense return to Federal Reserve Bank (FRB).

5. Upon request accompanies individuals requesting access to collateral folders containing negotiable securities (dual control system); records securities placed in, removed from folders from serially numbered tickets on tabs, by borrower; Files tickets, tabs.

6. Receives, Files "in" tickets for items held in safe-keeping in all offices; Initiates daily payment for (AUD) "Return Postage Paid" mail, monthly check to Collector of Internal Revenue for taxes collected on safe deposit boxes.

- 10%
<table>
<thead>
<tr>
<th>Date: 9-18-54</th>
<th>Job No. 112</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job Name: Accountant Administrator</td>
<td>Appvd: W. Bruso</td>
</tr>
<tr>
<td>Trust Division</td>
<td>Appvd: J. Maney</td>
</tr>
<tr>
<td>Dept: Trust</td>
<td>Analyst: K. Stewart</td>
</tr>
<tr>
<td>Office: State Mutual Office (SMO)</td>
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</tr>
<tr>
<td><strong>Function:</strong> Under supervision of Trust Officer (064), supervises opening, administration, closing of accounts for Trust Division</td>
<td></td>
</tr>
</tbody>
</table>

1. Supervises administration of trust, guardianship, conservatorship accounts.

2. Receives information relative to new accounts from Trust Officers; prepares, dictates on dictaphone details of new accounts for votes of acceptance by Trust Committee (TC); prepares new account, inventory sheets; Routes to all departments; Prepares digest sheets for general use.

3. In administration of accounts:
   a. Confers with, dictates letters to grantors, beneficiaries, attorneys on routine matters; (letters signed by Trust Officer).
   b. Arranges for payment of income; Prepares memos to (TC) for payments from principal; checks availability of cash; initiates entries; approves, signs, checks in payment of income, principal, expenses (routine bills).
   c. Shows trust real estate to interested brokers.
   d. Maintains follow-up record for future on accounts.
TABLE XI (Continued)

Job Name: Accountant Administrator - Trust Division
Job No, 112

<table>
<thead>
<tr>
<th>Approx. % of Time</th>
</tr>
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<tbody>
<tr>
<td>85%</td>
</tr>
<tr>
<td>15%</td>
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</tbody>
</table>

- **e. Arranges for changes of beneficiaries on insurance policies (insurance trusts).**
- **f. Annually checks accountings to Probate Court (PC) for accounts under court appointment or to beneficiaries for trusts under agreement.**
- **g. Annually reports to Commonwealth of Mass. all principal payments made on trusts; Pays tax due.**

4. Using account closing check sheet performs, supervises, various steps in terminating accounts:
   - **a. Consults with attorneys, beneficiaries.**
   - **b. Requests copies of security list from Addressograph Department (AD); Prepares list of securities showing market, book values on termination date.**
   - **c. Arranges for collection of insurance policies (insurance trusts).**
   - **d. Figures distribution of assets; distributes assets.**
   - **e. Obtain releases, tax guarantee forms, furnishes accountings to distributees legatees.**

5. Answers telephone and personal inquiries.

6. Reads informative publications, memos regarding general business, financial, tax, trust matters circulated through (TD).
of words, and general data on the form to be followed in compiling the descriptions.

Tables X and XI show examples of job descriptions used at the Worcester County Trust Company. It will be noted on these descriptions that there is a column for the approximate percentage of time spent by the employee on each phase of his job. This percentage column is left wholly to the discretion of the employee and is not subject to correction by his department head as is the general descriptive information in the body of the job description.

2. Committee

The job evaluation committee next receives these descriptions and then the job is evaluated by this committee. The Bank committee is composed of eight key members of the staff representing the various departments of the Bank together with the Personnel Manager who is Secretary of the Committee and who records the actions taken.

Each committee member first evaluates the job, factor by factor and then the job is discussed in committee meetings and a majority decision sets the position of the job in its proper relationship to other jobs.

Table XII gives further insight as to how the job is actually evaluated. Here there are nine jobs, each identified by the proper job number, each factor has a range from one to ten depending upon its degree of presence. Each committee member, identified by letter, makes his choice known as to
### TABLE XII

#### Rating Factors

<table>
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<tr>
<th>Job Number</th>
<th>278</th>
<th>300</th>
<th>340</th>
<th>356</th>
<th>357</th>
<th>441</th>
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<tbody>
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**Note:** The factors Responsibility and Working Conditions have been purposely omitted from this table since the principles are the same there.
TABLE XII (Continued)

Rating Factors

<table>
<thead>
<tr>
<th>Job Number</th>
<th>278</th>
<th>300</th>
<th>340</th>
<th>356</th>
<th>357</th>
<th>441</th>
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<tbody>
<tr>
<td>Judgement</td>
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</table>

Note: The factors Responsibility and Working Conditions have been purposely omitted from this table since the principles are the same there.
CHART 5

BUTT-TO-BUTT RATE RANGES
(HOURLY RATES ARE FOR ILLUSTRATIVE PURPOSES ONLY)
how he thinks each factor should be rated. The final decision is indicated by circling the number between one and ten where the majority decision lies. It will be noted in some instances such as on job 459, judgement factor, the minority vote rules. This exception may come about because one of the committee members has had greater experience with the job in question and manages to sway the majority to his way of thinking.

The employee is able to look at his job evaluation upon request and he may also petition for a re-evaluation if he feels a change in his job content warrants such action.

3. Labor Grades

The Worcester County Trust Company employs twelve labor grades having butt-to-butt rate ranges. This type of range provides a series of steady ranges in which the maximum limit of the lower range meets, within the units of the pay scale, but does not overlap the minimum limits of the next higher range. Thus, under this type of rate range, the same pay cannot occur in more than one rate range of the series.

A feature of this system to be especially noted is the constant money spread throughout all grades. Chart 5 illustrates this point much more graphically and more will be devoted to this aspect of the labor grades at the end of the chapter.

4. Merit Rating

The Worcester County Trust Company has a system of merit rating which they prefer to call performance rating.
Every six months the employee's performance is reviewed and an informal conference is held between the employee and his department head or supervisor. The supervisor or department head is wholly responsible for the performance rating of the employee.

The employee is rated on the following qualities:

1. Volume of Work -- How does the individual employee compare with others in rate of completing assignments and in amount of work satisfactorily accomplished within a given period.

2. Quality of Work -- How does he compare with others in careful attention to essential details and in the accuracy and neatness of his work.

3. Human Relations -- How does he compare with others in customer relations, in cooperation with management and fellow associates, and attitude toward the job.

4. Initiative -- How does he compare with others in improving work techniques and in ability and willingness to perform duties outside regular assignments.

5. Supervision Required -- How he compares with others in conduct and doing his work adequately with minimum supervision.

The performance ratings are kept in the Personnel Department and are the basis for an employee rising to the top of his particular rate range within his labor grade if he warrants such increases. The employee's attendance and
punctuality also counts heavily in consideration for pay increases.

D. Summary

The job evaluation information is conveyed to the employee in the form of an eleven page booklet entitled, "How Do I Get a Raise in Salary" and this brochure explains the fundamentals of the plan to the worker.

1. Merits

One of the major advantages of this Factor Comparison Method is that it claims certain accuracies by considering the characteristics of a job rather than the job as a whole as is done in the ranking system. Another merit is the flexibility of the system which allows for neither top nor bottom limits to confine the relative positions into which jobs may be placed. This is a feature not claimed by the popular point rating plan.

2. Limitations

The greatest limitation of this system employed at the Worcester County Trust Company is a disadvantage which has led to more than one failure of comparable Factor Comparison systems. That shortcoming is the difficulty encountered in trying to explain the system to employees. It is a complicated method at best and not conducive to ready explanation.

In talking with several officers of the company about their job evaluation system, reference was made to the author several times concerning the "point" system the company was using! If company officials do not fully understand the plan
themselves, surely the lower echelon employee cannot be expected to comprehend the facets of this rather cumbersome system of job evaluation. The booklet given to the employee and offering an explanation of the plan is at best nebulous in its explication and doubtless serves only to confuse.

Further criticism of the plan comes from the concept of a job being evaluated on only five factors. It is doubtful if a job can readily be evaluated on simply the factors of knowledge and skill, human relations, judgement, responsibility, and working conditions. Surely, more elements than this should enter in evaluating the total worth of a job and yet, if more factors are used, the system proves unwieldy to administrate effectively.

As if the system did not have enough shortcomings, the butt-to-butt labor grades also warrant some condemnation. This type of rate range does not permit sufficient increased recognition and pay rate opportunities for long-service and higher skilled employees in the same labor grade.

Also it seems much wiser to use the popular concept of wider money ranges for higher grade jobs but this system is not used by the Worcester County Trust Company. The present system means that were the employee in labor grade twelve to get a performance increase in salary, he would receive the same amount of an increase in money wages as would the employee in labor grade one receiving the same performance rating. This penalizes progressively the employees in the higher
labor grades.

3. Comparison with Adams Machine Company Salary Plan

The system is well suited to comparison with the Adams Machine salary plan of job evaluation since both systems apply to the same type of office and supervisory employees.

Job descriptions in the industrial concern are prepared by the National Metal Trades installing group with the help of the employee. The Worcester County Trust has the employee, after instruction, write up his own description and have it approved by the department head in his respective department. Having the employee compose his own job description is sanctioned in the case of office and supervisory employees since their tasks are of such a nature that an observer could do little in composing job descriptions as can readily be done with the production worker who labors at a machine.

The committee in both concerns are composed of management only and the wisdom of a unilateral committee such as this is open to question.

The Adams Machine job evaluation plan can readily be explained to the worker while the Factor Comparison plan of the Worcester County Trust is confusing and most difficult to explain to the average employee.

Labor grades for the Adams Company are set up on a progressively higher percentage basis and, assuming a blanket percentage increase in pay, the higher paid labor grades
receive a progressively higher money increase. Were a percentage increase given to all Worcester County Trust employees, the higher labor grades would be penalized progressively in computing the increase. Thus, if labor grade one received a ten cent per hour increase, the highest skilled labor grade group twelve would receive the same ten cents per hour increase. This is contrary to current opinion on the matter.

4. Conclusions

Of the two plans, the Adams Company seems to have the better system of job evaluation. This is not to say that a point system is always better than a factor comparison method of job evaluation since the opposite could well be true. The conclusion is simply that the Adams Company has a more workable and better suited plan to meet their needs than has the Worcester County Trust Company for its employees.

That the financial institution has a rather wanting plan is further borne out by a statement made by one of the officers interviewed to the effect that the company is surveying other systems with the idea in mind of either improving their system or perhaps scrapping it completely in favor of another. Under the circumstances, this could be a wise move and is illustrative of what more than one company has done after becoming more familiar with the operation of job evaluation systems.

With the perspective gained by examining two actual systems in some detail, the following chapters will bring to
view further insight into the position management and labor
take in recognizing the functions of job evaluation.
X MANAGEMENT VIEWS OF JOB EVALUATION

A. Management Attitude

Management is finding job evaluation a very useful tool in wage determination and this new management technique is being utilized in additional plants every day. The increased use of these plans has been so rapid that many factory workers are now employed on jobs which have been rated under a job evaluation program. These programs have been installed in the larger companies mainly because the chance of wage inequalities existing in larger plants is greater than in smaller companies.

The management representatives in the various plants have discovered that job evaluation plans are accomplishing their desired objective, that is bringing the pay of the various jobs in the plant into their correct relationship. Also by using the additional wage determination technique of a labor market survey, the individual company's wages are made similar to the existing wage structure in the locality and industry.

B. Ten Year Trend

To indicate the ever-increasing trend toward job evaluation in the past ten years, several authoritative sampling surveys will be discussed as an indicator of job evaluation growth.

1. Douglas T. Sterling Survey

The Douglas T. Sterling Survey of 1946 showed the following results:
a. Management views of job evaluation were sampled by solicited letters on the subject from top management officials:

"61.7 per cent expressed their unqualified approval of job evaluation.

12.6 per cent also approved of job evaluation but pointed out some reservations which, however, did not cancel their general approval.

2.5 per cent thought that job evaluation was of no value to industry, and a few were strongly opposed to it.

1.9 per cent approved of job classification but not of job evaluation.

8.1 per cent said they lacked sufficient knowledge to give an answer."

b. Why Liked

The replies to the survey showed that the one main thing that these companies had gained by their instituting a job evaluation program in their plant was that management definitely had concrete facts upon which to base their arguments when they met with union representatives to settle the question of wage inequalities which appeared in grievance procedures. The companies considered job evaluation an excellent basis for establishing fair and just rates between individuals and correcting the inequalities that might exist between the various rates for the different jobs. The managements also considered the
method of job evaluation as an aid in efficient management, because, in the process of the evaluation, job descriptions were prepared which could be used as an aid in hiring, transfers, and promotions.*

c. Why Disliked

Of the 2.5 per cent of the replies to the survey that were opposed to job evaluation, the excerpts from the letters of these people indicate that they do not favor the program in small companies whose job contents are continually changing. A few of the letters indicated that the writers did not favor it because they feel that it tends to treat employees as machines and not as men and they dislike job evaluation for this reason.**

d. Regarding Unions

In reality any form of scientific management which affects the workers is only as good as the worker thinks it is. That is, no matter how much a plan helps the management in its planning and personnel techniques, if it does not meet with the approval of the workers it is a cause of bad labor relations and the subsequent drop in production which might accompany it. In considering any job evaluation program, it then becomes of prime importance to consider the

*17, pp. 7-15.
**17, p. 19.
worker's attitude, expressed as an individual and as a union member, to this new technique.

The management's opinion on job evaluation and how it affects unions and the worker is best characterized by the excerpts from letters written by top management officials about job evaluation.*

- "Valuable in dealing with unions and keeping any fantastic wage demands within control.

- Upon acceptance by the union, the plan defines bases on which demands for review of the wage rates can be made.

- Helps prevent union negotiators from flattening wage curve.

- Meets the union's contention that certain skills need higher wages.

- Difficulty in getting unions to understand is the principle trouble in installing job classification and job evaluation.

- Unions approve of it and understand it.

- Unions are learning that job evaluation is necessary to increase efficiency and satisfaction.

- Unions first opposed job evaluation, then approved it as a tool for setting wages.

- Management's position can be shown to union as a result of analysis.

- Job evaluation's value is in convincing union of management's interest in elimination of employee frictions because of inaccurate job pricing.

- Both management and labor should use job evaluation to correct wage inequalities within a specific industry, a corporation, or the department of a plant.

*17, pp. 7-21.
- Needed as a guide to control labor and cost.
- Hope unions will universally accept job evaluation as a means of settling all wage issues.
- Unions will establish their own job evaluation if industry does not."

As can be seen from management's opinion concerning job evaluation plans, they believe that it will not only help management because it gives a basis for management's position and a means of justifying their stand but also it will be of benefit to unions because it aids them in their objectives of a proper scale of rates and equal pay for equal work. According to management, it will only be detrimental to labor in that it will stop some of their exorbitant wage demands. Thus, if management can show some wage demands would dislocate the whole wage structure, the unions would refrain from making these unjust demands again. The management also believes that job evaluation will provide a means for the union to substantiate some of their claims and by use of job evaluation they can prove that their demands fit into the overall wage picture in the plant.

2. Dartnell Corporation Survey

The Dartnell Corporation of Chicago recently surveyed ninety-six companies and found that all but eight of these companies had installed their plan since 1940. Seventy-four of these companies used a point system. Also only twelve of these companies were non-union; forty-one did not include the plan in their union contracts and forty-three did. Eighty-two
of the companies applied job evaluation not only to the factory jobs but also the office force as well. Significant also, all but sixteen companies held meetings with their employees and most used employee magazines plus bulletins to explain what was coming.

3. **National Industrial Conference Board**

A survey made by the National Industrial Conference Board covering 3,498 companies of all types showed 59 per cent had job evaluation applied to nearly all hourly paid jobs. Over one half of these companies applied job evaluation to salaried jobs, one third to supervisory jobs, and one eighth to executive jobs. Thus the pattern of job evaluation is spreading with increased momentum as time elapses.
XI Cross Survey of General Labor Reactions

A. General Union Attitudes

1. Increase of Interest

Whereas management seems to be of the almost unanimous opinion that job evaluation is a helpful technique, the workers' attitude to this latest management tool is not consistent or definite, although they are taking an active interest in job evaluation techniques.

The union members and the union leaders are becoming more and more interested in the techniques of modern management because they realize that they must understand these new approaches to the wage question in order to bargain successfully with the management representatives. The fact that unions themselves have tended to adopt an attitude of tolerance toward measures to increase industrial efficiency has led many unions to set up departments to study these new management techniques.*

An interview with the local heads of sixty-six unions showed that three of these unions were evaluating jobs themselves and had their own men with their own job evaluation system rating all jobs in order to give the union negotiating committee a talking tool in bargaining with management.**

One union made a survey of its members and found that some of them were college graduates and had specialized

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*28, p. 356.
**39, pp. 10-11.
in engineering and management and were unable to find work in these fields because of the depression in the 1930's and so they took whatever work was available. Even when jobs in their fields were available many of these people stayed on as factory workers because they were established in the neighborhood, had homes and families, and did not wish to relocate. The union took these members and gave them refresher courses in their college majors and then had them study the methods used by management in their particular plant. In this way, the union satisfied itself on the correctness of the methods used by management. Other unions obtained people from outside their union and established technical departments within the national office. An instance of this is the management engineering department set up by the International Ladies Garment Workers Union.*

The present trend seems to be for the unions to have an ever increasing amount to say about the operation of the various industries. They have taken particular interest in many of the various tools of modern management which aid in determining wage questions such as job evaluation.**

A great deal of attention has been focused on job evaluation plans by the various unions. They have studied the plans both from a theoretical viewpoint and from the actual experience of determining how the operation of the plans

*28, p. 356.
**4, p. 284.
affected the workers. From this has evolved many conflicting opinions. The subject of job evaluation may be too new for there to be a uniformity of opinion as to the merits or demerits of job evaluation among the unions. Incentive wages have been employed by management for a much longer period than job evaluation and yet even today some unions either prefer piecework and other incentive systems while others strongly oppose it.

2. Princeton Survey

In a study made by the Industrial Relations Section of Princeton University, it was reported that striking differences of opinion were revealed throughout the study. The differences of opinion were not only between local and international headquarters of the same union but also among various international unions, and even among various officers of the same local.* In general, however, opinion at the international level differed only as to degree of opposition to job evaluation. One top union officer indicated that, while he did not disagree with the theory of job evaluation, he was of the opinion that in practice it had been harmful in nine cases out of ten.

The research director of another large union admitted that in at least two or three companies, job evaluation had been successfully applied but qualified his statement

*1, pp. 76-77.
by adding that it was still too early to tell if the plan could also be successfully applied to other companies. Another union official said that even though the plan adopted was an imperfect mechanism, it nevertheless provided an efficient and rational method for accomplishing a desirable objective."

Though in the minority, there are a few national unions which either openly desire job evaluation as the United Office and Professional Workers (CIO), or others such as the Paper Mill Workers (AFL); Pulp, Paper, and Sulphite Workers (AFL); Commercial Telegraphers' Union (AFL); and the United Steelworkers of America (CIO) which, though not subscribing to any general policy for or against job evaluation, have utilized these plans to aid them in collective bargaining.**

3. Pittsburgh Survey

Another recent study of the union leader's attitudes on job evaluation consisted of an interview with either the president, business agent, or district representative of all sixty-six unions listed in Pittsburgh, Pennsylvania. These attitudes of the middle union leadership were not necessarily those published by the front office and written for record, but were the attitudes which were formulated in the struggle of constant negotiations with management and explanations to members. This study further brings forth the point that

*1, p. 74.
**1, pp. 82-83.
attitudes are only expressions of underlying feelings; and that the attitudes held by these labor leaders toward job evaluation, whether it be a positive or negative attitude, will usually be the same as those held toward any other employee relation question.*

E. Worker Comments

The attitude of many workers to job evaluation was reflected in the comments of one shop union official who spoke to management representatives concerning the program. This was at the New York Air Brake Company when the management decided to put in a job evaluation system. The union immediately became interested. A union member of a negotiating committee which investigated the job evaluation program said:**

"We don't want anything to do with job evaluation. It's just a management device to reduce earnings, and furthermore, we firmly believe that only a doctor is capable of judging the mentality of a person -- not a job analyst or an industrial engineer."

This opinion of a job evaluation program is not only held by this union member but it is also the published opinion of some of the larger unions. They believe that it is just another method to cheat the worker and they cannot possibly see any good materializing from such a program.

The International Brotherhood of Electrical Workers (AFL) states:***

*39, p. 7.
**32, p. 169.
***19, p. 22.
"It should be significant that all job evaluation, piece work, bonus and such plans are conceived in the minds of employers and their agents. We have yet to learn of any such plan being devised by or on behalf of labor."

This seems to be the typical stand for publication of many head officers in the national unions. The United Electrical, Radio, and Machine Workers of America (CIO) advise their local unions to refuse to become bound by any system which management may use to try to establish job evaluation. The national union further advises the local groups to omit any mention of job evaluation in the contracts which it negotiates with management.*

C. The National and Internationals Viewpoint

1. Policy Statements

Most of the international and national unions either do seem to be opposed to job evaluation or else they do not have any stated policy on the matter. Some other national and international unions which have gone on the record at their annual conventions or in their publications as opposing job evaluation plans are the Utility Workers Union of America (CIO) and the International Association of Machinists.**

The President of the American Federation of Labor has written to the effect that there is nothing truly scientific about job evaluation procedures and that collective bargaining would provide a vastly sounder basis for proper adjustment of

*28, p. 77.
**25, p. 20.
This opinion of the American Federation of Labor toward job evaluation was verified in a series of articles in their union magazine. The first article implied that the union was opposed to job evaluation because by means of a complicated system of points, factors, and wage curves, a smoke screen was fashioned by management to get around a genuine collective bargaining procedure, which would result in fair and realistic wage adjustments.**

Another article by the same author stated that the union looked upon job evaluation as a management technique because it had been conceived, fashioned, and put into practice by management without any participation in the process by labor representatives. The union also felt that job evaluation confused the workers and prevented them from knowing to their satisfaction just what had happened to the rate on their particular job. The American Federation of Labor also felt that job evaluation was a serious threat to effective collective bargaining.***

2. Threat to Collective Bargaining

The last idea, namely that job evaluation constitutes a threat to effective collective bargaining, appears to be the main, general, underlying reason for national and international
union officials not accepting job evaluation programs. This seems to be something that all of the union leaders are hinting at even though in some instances they do not come right out and say so. These leaders visualize the union's role in determining wages as disappearing when a job evaluation program is installed in a plant. There is the fear present that management will evaluate the jobs and then use a labor market survey to determine the exact rates for certain key jobs. This would also determine the rates on all of the other jobs. If this were to be the method used by management, the union's bargaining role in wage determination for the plant would be substantially diminished, if not completely eliminated.

The director of the Management Engineering Department of the International Ladies' Garment Workers' Union also seemed to have this fact in mind when he put forth the idea that one reason for labor to be skeptical and be opposed to job evaluation is because in the past, in some instances, job evaluation was used as a substitute for collective bargaining.*

Another union official, the director of research for the Textile Workers Union of America (CIO) brings out the same objection by job evaluation and collective bargaining. He states:**

"Job rates are normally developed through mutual agreements. Many factors play their part in this determination. There is not a limited number of

*5, p. 12.
**41, p. 24."
factors or a fixed graduation of values for each factor. Tradition, customary job relationships, productivity, supply and demand for specific skills, bargaining strength, and job qualifications are constantly interplaying in the final determination of a rate structure under collective bargaining. Pressures change with time, new job values develop, and new rates are requested. Unions do not want a rigid stratified method of appraising job values."

A few of the more recent publications on job evaluation which have been written by men affiliated with management have also recognized the fact that labor looks upon job evaluation as an infringement on the process of collective bargaining. One writer has put forth the idea that the objection by organized labor to job evaluation as a basis for wage setting is that it takes the pressure and bargaining tactics out of the union's hands and into the hands of management. The ideas expressed by this particular writer are in perfect harmony with those of the union leaders previously mentioned. It therefore appears that management does seem to realize that the union leaders feel they are being subjected to the job evaluation technique.

D. Summary of Viewpoints

1. National and Internationals

All of the views mentioned in this chapter on the general outlook of unions to job evaluation point to conclusions that the majority of national and international union leaders are opposed to job evaluation because they look upon it as a means whereby management will do away with collective bargaining as a means of wage determination and take upon itself...
the determination of all wage rates. All opinions expressed by the national and international union officials point to this conclusion. Other points mentioned appear to be secondary to this main consideration. The actual specific objections voiced by these national and international union leaders (presented in the next chapter) appear to be a means to discredit the overall program because of this basic fear of job evaluation replacing collective bargaining. Although a few of these specific considerations do seem to be valid, many of them are trivial and give the appearance of being used only to increase the volume of condemnation of job evaluation plans.

The study made by the Industrial Relations Section of Princeton University also stresses the point that most of the dissatisfaction expressed was directly or indirectly related to an inherent fear that any management technique that determined wages by a formula would limit collective bargaining.*

2. Locals

As stated previously, the so-called "on the line" union leaders have varied opinions on the subject of job evaluation, some being in favor of it and some being opposed to it.

The reason for the contrast of opinion between the local and national leaders might be that these local members have found that job evaluation is not being used to replace collective bargaining but in actual practice is being used in

*1, p. 74.
conjunction with the already established bargaining technique. Perhaps, too, the local officials are finding out that even though job evaluation does give management a base from which to negotiate on questions concerning the inequality of wages, it also gives the union a sound basis to argue the merits of their reasonable demands.

The national union officials have also expressed the idea that a job evaluation system does away with the ability to pay concept of wages. The unions often base their demands for wages on what they feel the company can afford to pay. For instance, a concern in a monopolistic position could afford to pay more wages for a certain job than could one in a highly competitive industry. The local officials may be discovering that they can still use this theory of wages in their negotiations even when a company uses an evaluation program because, after the evaluation is completed and the labor market survey made, the union might still use this idea of wages to determine the position of the wage relationship line.

As previously mentioned, the local officials do not have a unanimous opinion on the subject of job evaluation. The survey made by the Princeton University Group found that in general, local union officers were not as hostile to the idea of a systematic wage determination as were most of the national leaders. The union officials on the local scene did not reject the theory of job evaluation but confined most of their criticisms to certain malpractices which developed in
the administration of various programs. The local union would not be apt to criticize the theory of job evaluation because they do not usually concern themselves with theoretical considerations whereas the national leaders do deal in theory. The survey also showed that the local union policies were often the result of expediency rather than careful deliberation of the long-run effects of a job evaluation plan. Many unions welcomed job evaluation when wage stabilization policies were in force since job evaluation was one method of obtaining more money for some of the workers. Many of the unions that approve of job evaluation are unions which have received substantial payroll increases for their members as a result of its installation. The local unions seemed more willing to be guided by the results of job evaluation where management had not forced acceptance of the evaluated results as the absolute determinate of wage differentials. When the management had used the results of job evaluation as the absolute determinate of wage differentials, the unions were in opposition to the plans.*

In the survey made of the rank and file union leaders on the local scene in Pittsburgh, Pennsylvania, an interesting opinion was ventured.** There were twenty-three craft type unions interviewed and none of these unions had used job evaluation systems to help them formulate their wage demands.

*1 pp. 80-81.
**39, pp. 9-10.
The idea of these craft unionists is that if an employer were to present wage differential arguments based on job evaluation, the craft unions would not even discuss the merits of the system and would not even acknowledge it as being a valid tool of industrial management. They have this opinion because craft unions only bargain for one kind of employee. They are not primarily concerned with wage relationships and differentials, but rather with the craft minimum. This craft minimum should just be a single wage rate in the overall job evaluation program of the industry and therefore it would seem that despite the results of this reported study, the craft union would have to know the companies' job evaluation program to enable them to find how the company arrived at the base rate for that particular craft.

This survey also reported that thirty-two industrial type unions were interviewed and that eighteen of these unions reported that they had used job evaluation plans. Of these eighteen unions who had used job evaluation programs, the overwhelming majority of them felt that formal methods of job evaluation are desirable and necessary for modern wage and salary administration.*

This report goes on further to say that job evaluation is useful in reducing grievances and that is one of the main reasons that these industrial unions usually encourage

*39, pp. 9-10.
the development of a job evaluation program. The unions are glad to have fewer "jealousy" grievances so that they can devote their time to the more important union functions.

It is interesting to note some of the other varied reasons for either approval or disapproval of job evaluation plans by the union leaders. These local leaders say:

- "Use it only where possible to get wage increases or to immediately adjust inequities.
- It is just another method of watching the employee and is there only to benefit the employer and stockholder.
- The union ignores it until it hurts the employees, and then the union steps in.
- Idea of job ranking should be used to make differentials more fair.
- Seems fairest of all.
- Helps a man to know his job in relation to other jobs.
- In general job evaluation is a pretty good thing.
- Job evaluation is an intelligent way to iron out inequalities; it eliminates a lot of confusion; it is a practical solution of the problem.
- Job evaluation is necessary or else there is no basis for rate scales."

3. Consistency of Surveys

The Princeton Survey study and the Pittsburgh Survey are consistent with one another and with other writings of the union leaders. They all bear out the fact that international

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*39, p. 12.
**39, p. 10.
and national union officials are worried about job evaluation replacing collective bargaining and are therefore opposed to any such systems. These two studies also showed that the local union officials do not all share the same opinion concerning job evaluation; the majority of them approve of the system although there are many technical points that they do not agree with; there are some local leaders who violently oppose the theory and practice of job evaluation.
XII ORGANIZED LABOR'S SPECIFIC CRITICISMS

A. Explanation

Having considered the general attitudes of the union to job evaluation, the specific considerations will now be explained. By these specific considerations is meant the factors inherent in the plans themselves and in their operation. Many of these considerations are aimed against certain methods of job evaluation. Some comments center about one particular type of the four plans used while others apply to portions of the job evaluation program which are prevalent regardless of the specific plan used.

The specific union considerations are those of both top unionism and the local union leader. The national and local leaders have the same specific objections in many instances and therefore there is no need to differentiate the comments as to whether they were made by the local or national union leaders.

B. Ranking

1. Steps Between Jobs

The job ranking method of evaluation in which the jobs are simply put in rank from the highest to the lowest has been criticized by the unions because after the jobs are ranked, an important consideration is the decision as to whether there are any steps between them or if there is a constant difference between jobs.* The steps between jobs need not be

*22, p. 8.
equal as there may be smaller steps at the bottom of the scale and larger steps at the top of the scale. For instance, shall job number two be paid five cents per hour more than job number one and job number three, five cents per hour more than job number two; perhaps job number two should be paid five cents per hour more than job number one but job number three should be paid only four cents per hour more than job number two. This is the question that bothers the union because it is a question left wholly to the judgment of those ranking the job.

2. Reliance on Judgement

This ranking method also leaves plenty of latitude to management on deciding to which step a particular job belongs. There is nothing to show why a job belongs at a certain point on the ranking scale and the union objects to this method because only the final result is made public. There are no intervening steps to justify the final result. Too much is left to judgement and much depends on the quality of the judgement, good or bad, and if it is realistic and practical or merely arbitrary.

C. Grading

The grading method consists of the ranking method applied twice. Therefore the union criticism that applies to the ranking method also applies to the grading method. Here again, much is left to arbitrary judgement and the
judgement is apt to be bad.*

D. Factor Comparison

1. Factor Ranking

The factor comparison method of job evaluation is really a combination of the ranking method and the point system. It therefore has all of the troublesome aspects for the unions that were mentioned under the discussion of the ranking method. However, the jobs are only rated once in the ranking method but in the factor comparison system they are ranked for each factor. It therefore follows that a mistake in the ranking under one factor might be counterbalanced by a mistake in the ranking under another factor. (The unions appear to be less critical of the factor comparison method of job evaluation than they are of other methods.)

If deciding, for instance, upon the money assigned to the mental requirements for a carpenter's helper, the committee may have already established that a drill press operator gets fourteen cents per hour for this factor and an assembler gets eleven cents per hour and that both of these jobs are key jobs upon which everybody involved in the program has agreed. They also agree that the carpenter's helper comes between these two positions on this particular factor. Whether the job shall be assigned eleven cents per

*22, p. 8.
hour or fourteen cents per hour for this mentality factor or whether it shall be some value between these two, is generally arrived at by collective bargaining especially if the union participates on the committee.*

2. Difficult to Understand

It is this method of having collective bargaining play a large part in this particular job evaluation system which seems to make the factor comparison method a more satisfactory method from the union viewpoint. However, some union leaders do contend that this factor comparison system is too complex to be understood by the workers and that this is a bad feature of the plan which does not apply to the ranking and grading methods.**

E. Point System

1. Not Scientific

The point method of job evaluation which is the most widely used method in operation today, is also the most widely criticized method. Perhaps this is because unions are more familiar with this method and have had an excellent opportunity to observe this plan in operation and to make criticisms of it. They have not had this opportunity with other methods of job evaluation because of the limited number of plants in which they have been placed in operation. In many installations the setting up of a point plan has tended to put a certain

*5, p. 29.
**1, p. 75.
"scientific" aspect on the whole program in the eyes of management.* Labor has not looked upon it as scientific because they consider it anything but a scientifically accurate system. They see nothing scientific about assigning eighty points to education and fifty points to experience in evaluating a job because they consider all such values are arbitrary and have been set up by a rule of thumb, and that is as much as anybody can claim for them.**

The union leaders agree that point systems are to some extent a mechanical substitute for judgment but they stress that it does not by any means eliminate judgment. They point out that judgment is necessary to determine such things as what are important factors to consider in terms of rating working conditions. Judgment has to be used to decide whether the job should be rated on noise, glare, clothes spoilage, or numerous other items that might affect working conditions.

2. Point Weighting

The problem of the weighting of the points has also been considered by the union leaders.*** Should 50 percent of the total points be applied to the skill factor or should 30 percent be used? Just what portion of the total points should be allowed for skill and what to the other factors? There is

*22, p. 8.
**22, p. 8.
***5, pp. 22-23.
no agreement among the present point systems as to the weighting of the various factors at the present time. The idea has also been brought forth by the union leaders that possibly the weighting of the factors should be different in the various departments of the same plant. Most point system installations do rate on different factors for the factory jobs as compared with the office jobs when both are evaluated.

Along with this problem of weighting, there is also the possibility of an additional unconscious or inadvertent weighting of the factors. This is brought about by assigning a range of say one hundred points to the skill factor out of the maximum possible total of five hundred points. It would therefore appear that the skill factor counts for 20 per cent of the total number of points. It may also be said that one hundred points are also given for the responsibility factor which again appears to be 20 per cent of the total number of points. This would indicate that the job raters had intentionally decided that these two factors were to be counted equally. This is a correct assumption. However, in the actual job evaluation program installation, the job raters may unintentionally change the weighting. The operation of the plan may show that the number of points assigned to the skill factor is always between seventy-five and one hundred points, which is a range distribution of twenty-five points. A study of the plan may

further indicate that the number of points actually assigned to the responsibility factor does vary from zero to one hundred points, which is a range distribution of one hundred points. Therefore instead of skill and responsibility being ranked equal as was the original intention, the actual conditions show that the responsibility factor, with the one hundred point range, is given four times the weight of the skill factor, which only had a range of twenty-five points.

It may also happen that the average number of points for skill and responsibility might be different even though the range was corrected. If they are to be given equal weight, the average number of points assigned to each factor should be the same. If this were not the case, it would indicate a deficiency in the plan and the ratings would have to be re-checked. The union leaders are not enthused about point plans because of these difficulties that are not evidenced until the plan is completely worked out and the jobs have been evaluated.

3. Measuring Creative Requirements

The point systems also make it very difficult in that jobs involving creative, technical, or original thinking are less easily measured and it is difficult to standardize them completely under point evaluation plans. The routine job descriptions cannot easily contain the information concerning the sustained mental application required on many jobs.*

*43, pp. 382-383.
One union leader considers that labor should reject the National Metal Trades Association point plan, which is generally the plan presented to the union by management as the one which management intends to install. The objection to this particular point plan as well as all point plans is that assumed, fixed weights are assigned to factors such as education, experience, etc. The union officials feel that the weights should be determined by collective bargaining rather than being assigned.

4. Summary of Attitudes

Some union officials summed up their unions' attitude to the various methods of job evaluation by saying that if the management's experts were not able to agree on the various plans in use, labor certainly would be unwise if they accepted any one of them. Another objector to job evaluation programs came forth with the idea that it is very rarely that one single plan of job evaluation will ever serve to reach the widely different objectives of the program and because of this they would do damage on some phase of the installation. It is because of this type of reasoning that the union leaders feel that even if a job evaluation program helps them in one respect, it is still likely to harm them.

F. Wage Curve

*31, p. 53.
**1, p. 76.
***41, p. 32.
1. **Drawing the Wage Line**

As previously described with the aid of Chart 2, the results of the job evaluation are often plotted with the pay scale as the ordinate and the evaluated job worth as the abcissa. The wage relationship line is then determined and added to the graph. On many occasions this line has been drawn from the low job to the high job and the other jobs paid on this straight line relationship. As can be readily seen, if the lowest job is raised a few cents in pay, the effect will be a change in the line so that the low jobs are increased while the high ones stay about the same. If the high job is raised, the lower jobs will stay about at the same level and the higher one will be increased. The union officials, needless to say, are very interested in just how this line is to be drawn.

The union leaders are also skeptical about having this line showing the relationship between job value and earnings determined by the statistical method of "least squares". They point out that just because the line is determined mathematically, there is nothing sacred or absolute about the line. The important thing about the line used, according to union officials, is that the line is to be determined by collective bargaining."

After this line is drawn, the management authorities on the subject advise raising the jobs that fall beneath the *5, pp. 37-39.*
line up to the point of the line and letting jobs that are above the trend line remain that way while they are held by the present workers. However, the management should try to move these over-paid workers into a job which calls for their present pay. The union's contention is that even though this is done these upward and downward adjustments usually balance each other. Thus, union officials believe that it is made very clear that job evaluation is not going to increase the total payroll but that it is only going to attempt to eliminate the inequities which appear in it at the present time.*

2. Labor Grades

The number of labor grades which the company plans to use is another very important consideration from the union's viewpoint. A study must be made to determine not only how many jobs will be in each of the labor grades but also how many employees will fall in each grade. It is possible for the management to fix these grades so that a large number of jobs employing only a few workers will appear in a high grade whereas in the next lower grade, immediately adjacent to the higher grade, there may be only a few jobs. This would indicate that the management was being very generous because they had made the dividing line between these two grades in such a way that most of the jobs fell in the higher grade. However, a close study may show that these many jobs in the high grade

*22, p. 9.
employ but a few workers whereas the few jobs in the low grade employ many workers. Thus it is possible for management to set these grades so that the dividing line is at the point whereby many workers will be put in, for instance, pay grade six. Yet, if they had been rated one point higher out of the possible five-hundred points, they would have been in pay grade seven. The union therefore explores this possibility and checks on management wherever it has the chance.

The union leaders prefer to have a rate range within each labor grade instead of the single type line payment. This rate range allows the workers to get increases for length of service or their increasing skill or some other similar factor, even though the worker remains in the same labor grade. It is important to the workers to have the exact increment of increase within each range decided upon and properly fixed to reward them for their advancement.

The union therefore is interested in the rate that is to be paid for the lowest job, the rate that is paid for the highest job, the rates that are going to be paid for any key jobs along the wage scale, and the size of the labor grades and the rate ranges within each grade.

3. Production Changes

Some union officials object to job evaluation because of the effect it has on wages when changes in production

*5, p. 36.
are made.* The tendency that results from the introduction of improved machinery is that it usually causes a lowering in the job value as determined by the job evaluation program. Usually with the introduction of new machinery, the operator does not have to exhibit the skill on the job that he formerly had to show. As a result of this, the skill factor of the evaluation is usually lowered and the total worth of the job therefore decreases. The unions contend that even though the skill necessary on the job decreases, the responsibility factor increases because of the new, valuable equipment being used and also because of the increased production. It is therefore the union's contention that even though the skill should be down graded, the responsibility should be upgraded making for no change in the final total job value.

G. Labor Market Survey

1. Objections to Area Wage Influence

The one feature which is frequently coupled with job evaluation on which all union officials seem to have the same opinion is that they violently oppose the use of a labor market survey.** They maintain that job evaluation is concerned with relative job content exclusively and that the provision of a base rate from which to determine the wage scale will not depend on the labor market wage survey but will depend on the particular wage theories to which the collective

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*1, pp. 78-79.
**5, p. 12.
bargaining parties subscribe. The labor groups have completely rejected the theory of an area wage in an economy having most production organizations serve a national market.

2. Dependency on Employment Market

One point concerning labor market surveys which has been brought up seems even more fundamental than the objections mentioned above. This objection to them is because it is felt that they result in a vicious circle dependent on the employment market.* The interesting question which no one seems to have answered concerning these labor market surveys is who originally establishes the rates which become area or community standards upon which the rates determined by job evaluation are established? If, after a careful system of job evaluation is put into effect, and this plan is dependent upon an area market survey, then it can only be as accurate as the prevailing wages in the area and these presumably are as random as the wages in the plant being evaluated.

H. Other Objections

1. Changing Conditions

The fact that many job evaluation installations are put in at a company and then are not kept up to date furnishes another reason for unions to object to job evaluation. The jobs are continually changing and the factors present in the various jobs are also changing. Therefore if a job evaluation

*29, p. 471.
system is utilized in a plant, the unions believe that it should be continually revised and kept up to date. Therefore, only the plans which change job rates and relationships with new wage trends in the locality are capable of being considered satisfactory by the union officials.

2. **Job Content is Not Enough**

In its wage deliberations with management, the usual union policy seems to be that a worker should be paid according to the principle or highest skill employed. On the other hand, in a job evaluation system, the method used to evaluate a job is that of determining the job pattern, and considering the relative amounts of the various skills necessary in the job. Thus, unions cannot readily agree with job evaluation systems for composite jobs because of this basic difference of opinion.

Labor denies the most fundamental assumption of job evaluation. This fundamental assumption is that job content alone is an adequate measure of the value of a particular job and its proper relationship to the values of other jobs. Labor contends that other factors such as irregularity of employment, opportunity for advancement, provisions for vacations, rest periods, purchase of tools necessary, and others have a direct bearing on the wages that should be paid and these factors are not taken into consideration under existing job evaluation systems.*

*23, p. 21.
3. No Substitute for Judgement

Labor also objects to job evaluation because job evaluation attempts to introduce a mechanical substitute for practical human judgement. They further contend that no system of points and factors can possibly be applied with the same accuracy or results of joint union-management judgement concerning the worth of particular jobs. They say that management defends the large variety of job evaluation systems by arguing that the different conditions found in each plant or company call for a particular type evaluation system. The labor union officials say that management does not carry this line of reasoning far enough. Labor is of the opinion that each individual job also has certain differences and conditions and therefore no single series of weighted job characteristics can be used for all of the various jobs found in a typical plant.*

4. Evaluation Confuses the Worker

Labor also objects to job evaluation because it confuses the worker and makes it difficult for them to understand the wage rate system which is used to determine their wages. They resent the whole approach of disguising their common everyday work experience into an alien, new terminology which is completely unfamiliar to the workers. The unions are placed under a handicap because the management usually becomes familiar with the new ideas and terminology and has the plans in

*23, p. 21.
operation before they are explained to the workers. It also places union stewards and other union officials at a disadvantage because management has usually mastered the new technique before the union representatives have a chance to become familiar with the program. No matter whether there is a union or not, every worker wants to "be in the know" on what is going on, and desires to be a member of the team and play a part in working out his own future.*

*42, p. 341.
XIII SELLING AND STAFFING THE PLAN

A. Labor Participation

From the general and specific considerations of the unions toward job evaluation, an underlying idea that seems to be present in most of their considerations of any program is the fact that they are left out of the program. They believe that management has taken upon itself the sole right to determine wages under a job evaluation program. If the union were to be taken into the job evaluation program while it was still in the planning stage and the system was made a bilateral program of union and management, it would appear that unions would be more favorable to job evaluation than they are at present.

Unions look upon job evaluation as something that is forced upon them and which may replace collective bargaining procedures which give labor a voice in the determination of wage questions. If the union leaders were to become an integral part of the job evaluation committee, they should not feel that job evaluation was being forced upon them. Also, the union would still be helping to formulate the wage policy of the plant.

One of management's objectives in job evaluation is to improve labor relations by having the proper wage rate for each job. If they succeed in correcting the wage situation, the workers will be more content. Therefore from a management viewpoint it would seem highly desirable to have labor
help formulate these plans because in this way labor will be more content and better labor relations should result. Also in an organization where wages are set through collective bargaining, the cost and effort put into job evaluation may be wasted unless the union is willing to accept the findings.*

1. Results of National Industrial Conference Board Meeting

At a meeting sponsored by the National Industrial Conference Board, management representatives of the Pennsylvania Company, McKinsey Wellington and Company, Atlantic Refining Company, Kimberly Clark Corporation, Socony Vacuum Oil Company, General Foods Corporation, and General Electric Company were present. The following question was asked these management men:**

"To what extent can formal salary plans be used when dealing with labor?"

Their answer was:

"Nearly all companies represented on the panel have to deal with organized labor in their salary and wage evaluation work. The consensus of opinion was that if approached properly there is no reason why organized labor cannot be brought into salary and wage determination problems in a way mutually agreed upon."

The next question asked to this panel was:

"Should representatives of employees participate in the installation of wage and salary plans?"

Their answer was in the affirmative. In all cases it was felt that individual employees must be permitted directly or through their spokesmen, to question the soundness of in-

*36, p. 710.
**40, p. 90.
individual wage values.

One of the conclusions reached by this survey of top management in various industries was that all job evaluations should be made with the cooperation and approval of labor. All of the top management personnel who participated in this survey stressed the need of cooperation between worker, union, and management except one who stated the method should be "secret and a confidential tool of management".* In spite of this one comment it appears that progressive management is recognizing the value of having labor participate in job evaluation but the degree of participation varies from company to company.

If job evaluation is administered jointly by union and management, it should put an end to many of the criticisms voiced by labor. Some union leaders criticize job evaluation because they feel that it is a management tool. Naturally a plan that it administered unilaterally will have that notation attached to it and really nothing can be done to remove this prevalent idea. However, in a case in which the union takes an active part from the beginning and has an actual voice in the matter of the installation of the program, the workers will not look upon job evaluation as solely a management tool and this obstacle to the functioning of the job evaluation program will be overcome.

*40, p. 16.
B. How Joint Participation Dispells Fears

1. Collective Bargaining

As mentioned previously, the main objection to job evaluation is the fear in the minds of labor leaders that job evaluation will disrupt collective bargaining. This actually ties in with the idea that it is a management tool and is used for the advantage of management to the detriment of labor. However, if labor begins participation at the planning stage, they will be settling issues continually throughout the installation of the program. They will determine the type plan, the factors to be used, the weighting of the various factors, and all of the other considerations which go into the making of a complete job evaluation program. After the joint determination of these phases of the program, collective bargaining would determine the relationship between the arrived at job value and the money that would be paid to that job. They would determine the wage line together. It does not appear that a union would lose any of its prerogatives of collective bargaining under this method. It is granted that the bargaining would be kept to a minimum because each job would not have to be determined individually. By the process of collective bargaining, the conversion of the job value to wages (that is the low rate, high rate, number and width of labor grades, and the rate ranges) would be determined. The inclusion of the union in the planning and installation of the job evaluation program would certainly tend to eliminate or at least substantially
alleviate this feeling that job evaluation was being used by the management to circumvent wage determination by collective bargaining.

2. **The Four Systems**
   a. **Ranking**

   In a plant that does not have a job evaluation program an informal ranking system usually prevails. But making it a formal program of job evaluation, and naming it as such, takes the wage question out of collective bargaining contend the union leaders. They object to this formalized ranking method of job evaluation because too much is left to the judgement of the rater and often times this judgement is bad. Certainly if the union were to play an instrumental part in the ranking of these jobs they would have to admit that the judgement was good because they would be partly responsible for the judgement which determined the rating. By criticising the outcome they would be rebuking their own knowledge of the jobs. Even if they did not actually help rate the jobs, in a bilateral plan the union officials would at least be able to review the ratings and make the necessary corrections before the plan was actually put into effect. By using a jointly administered plan for job evaluation, the
union's reasons for disliking the ranking method should be eliminated.

b. Grading

The judgement factor in the grading method was also censured by the union leaders. One union spokesman said that too much is left to arbitrary judgement and the judgement is apt to be bad unless the workers themselves have a chance to have their say at every step of the procedure about what that judgement should be.* It appears then that a bilateral plan from the outset would eliminate the present union objection to the plan and make it acceptable to them.

c. Factor Comparison

The factor comparison method of job evaluation also involves a great deal of judgement. The key jobs first have to be determined and the rating factors decided upon. If the union can have a voice in settling these and evaluating the other jobs relative to key jobs it would appear that the union officials should be satisfied with the program.

d. Point System

The unions object to the point systems be-

*22, p. 8.
cause of their so-called "scientific" method which the unions claim is subject to many errors by raters. The leaders of these various unions would be a little more in favor of these systems if they had more to say in the awarding and weighting of the points. They would also have a chance to check the actual awarding of the points to see if any unintentional weighting was being given the factors. In commenting on the point method of evaluating jobs a spokesman for the American Federation of Labor said that the point system of job appraisal as well as all the other systems must accept union participation throughout in order to be realistic and equitable.

C. Trend is Toward Bilateral Job Evaluation

All of the criticisms of these particular methods of job evaluation center on the idea that management has had complete say on the matter of job evaluation and it is because of this that union spokesmen are very critical of the program. If union leaders were made a part of the planning committee for the installation of a job evaluation program, much of this derisive attitude would be eliminated. If the union participates in a jointly administered plan, all questions will really be settled by collective bargaining which is exactly what the

*22, p. 9
unions desire. This joint participation in the plan then is equally desirable from the viewpoint of both union and management.

By union representatives following along the whole program in the company, they will be able to give the workers a satisfactory explanation of what job evaluation is and how it works. Possibly the reason for the workers not understanding the various job evaluation programs now is because the shop stewards and other local leaders have not been adequately informed on job evaluation techniques and so they are not able to explain what they, themselves, do not know. The stewards, by being in on the program from the start, are then familiar enough with the techniques involved to give practically all of the workers a satisfactory answer to any questions they might have on the subject. One union official feels that labor should not only participate in the present plans but should have people working out a plan of job evaluation which the unions can present to employers.*

1. Princeton and Pittsburgh Surveys

In the survey made of the local unions in the Pittsburgh area, six of the sixty-six unions expressed the idea that the institution of a job evaluation plan should be the joint responsibility of both management and labor. This was not asked as a question, but rather the union leaders offered this suggestion. These six union leaders evolved this opinion from

*31, p. 53.
the following factors:

a. "If the union is a party to each step of the evaluation program, the unions can better protect the interests of the membership.

b. If job evaluation is to be at all successful, it must be accepted by the workers, and if the union was active in developing the plan it is more likely to be accepted.

c. The unions should be actively concerned with wage differentials and how these differentials are determined. The method employed to divide the total wage among the various workers should be a primary concern of the union."

In the Princeton Survey there was considerable divergence of opinion among the union leaders as to whether or not they should participate in job evaluation plans. The majority preferred not to participate thereby being able to challenge the rates instead of being responsible for them.

Another writer on the subject said that no definite statement could be made because the area over which the union feels it necessary to exercise some control varies with each situation, and therefore unions do not indiscriminately seek to participate in the formulation of job evaluation programs even when managements are very receptive to joint participation.

Some of the union leaders may be convinced that it would be theoretically correct for them to participate in joint labor and management evaluation programs but for their own self interest, it would not be expedient. That is to say,

*39, p. 11.
**1, p. 76.
***2, p. 221.
a union leader can rarely afford to combat customs, traditions, and jealousies which bulwark most existing occupational wage differentials or the political consequences which frequently follow as the result of any disturbances of those old alignments.*

Possibly by taking part in a job evaluation program the union leaders may find it difficult to substantiate some of their claims. The leaders are elected representatives of the members and therefore the leaders might be likely to find it difficult to explain some of their actions and still maintain the confidence of their constituents.

In spite of these potential reasons for the union leaders not desiring to participate, it still seems highly important for the union to participate in the job evaluation program. The Princeton survey concludes that the attitudes of the unions with which the company is bargaining has become a very important consideration. They further conclude that job evaluation in a unionized plant normally works to the greater satisfaction of both parties if the basic relationship of the evaluation plan to the wage setting is made in the labor agreement.**

This conclusion by the Princeton survey certainly implies that the union should enter into job evaluation programs. The Pittsburgh survey draws no conclusions as to whether a unilateral or a bilateral plan is the most desirable.

*†, p. 191.
**†, p. 85.
As mentioned previously, the survey made by the Sterling Company showed that all the management replies except one stressed the need of cooperation between worker, union, and management.

2. Other Indication of Trend

Another study of the automobile, steel rubber, electrical equipment, meat packing, and public utility companies discovered that in all six industries job evaluation systems have been instituted in which the union participates either through initial negotiations or by challenging management's evaluations by the grievance procedure. The automobile, rubber, and packing house workers are seeking a more direct participation in the setting of rates by employing the job evaluation system.* It should be noted that these industries are among the largest employers in the country.

A recent publication has advised having a labor-management committee, called a joint production committee, set up in each plant which would act in an advisory capacity as an exploratory, fact finding, evaluating, and planning committee. This committee should have a very wide scope and work on direct production problems such as discipline, quality control, maintenance, work assignment, stores, and tool control; on supplemental production problems such as safety, salvage, fatigue, and job comfort; and also on the personal obligations or interests of employees.** This idea of intentionally giving

*4, pp. 74-80
**9, p. 97.
the unions a voice in management is so new as to be just beginning to appear in print.

Naturally this idea of joint cooperation is consistent with the thesis of having job evaluation a bilateral plan. The joint labor-management cooperation on a job evaluation program does have merit for both parties after the initial obstacle of agreeing on a bilateral installation is overcome. In one company the union did not want to participate but gradually the leaders of the union were introduced to the plan and were included in the plan. Ultimately the whole program was studied independently by the union and presented to the management and disagreements were thrashed out. The international vice president of the union visited the plant and gave tacit approval to the union cooperating in the plan. The shop contained 350 different jobs and the job evaluation plan with revisions has now been in effect for almost fifteen years.*

Job evaluation is still in its infancy and it is therefore rather difficult to draw any definite conclusions concerning job evaluation methods. However it is clear from the evidence presented here that the future of job evaluation, in order to be successful, has to be a joint venture of management and labor. All indications point toward this outcome; management seems to favor bilateral programs in some form and labor is more content with bilateral programs than a unilateral

*26, pp. 146-147.
system.

A bilateral installation accomplishes some reconciling of the present divergent opinions of management and labor toward job evaluation. In other words, a joint system will still accomplish the objectives of job evaluation while being more acceptable to labor at the same time.
XIV FUTURE TRENDS AND CONCLUSIONS

A. Job Evaluation is Spreading

1. Horizontal

Job evaluation is increasing at a steady rate and is now encompassing new industries of all types. The exact growth is a difficult thing to measure and this handicap is realized. However, there are many positive indications that job evaluation is widening in scope at a fairly rapid pace. Various surveys by both management and union groups have substantiated this fact. Information gathered by United States Government sources are indicative of a growth situation. Also, the increasing interest shown in job evaluation by both labor and management through an ever increasing multitude of written articles indicates that this concept is coming of age and is widely recognized as a factor of discussion by both parties.

2. Vertical

By vertical growth, is meant the spread of the specific program from unskilled jobs right to the managerial and executive classification of jobs. This trend has just recently come to light. Job evaluation, when it first came into existence was applied only to hour-rated production jobs and was not designed with supervisory and executive jobs in mind. Recently, however, more and more executive jobs have been placed in the job evaluation program.

Evaluation plans for the jobs of supervisors and department heads sometimes includes even the jobs of work manager,
though they usually exclude top executive jobs such as controller, medical director, and general sales manager. The fact is, though, that applications of job evaluation to hitherto exempt jobs are increasing.

Some of this advance in the use of job evaluation can be accounted for by the time element. That is, companies which have applied it to hourly jobs in the 1930's have long since completed those first applications and found them of value. With that in mind, they go along naturally to include other jobs.

However another explanation seems more logical. It is very difficult for companies to secure top-grade executives so what better way is there to plan for replacements than by defining various jobs as is possible through job evaluation.

To labor this point needlessly is not the purpose of this paper but it is mentioned only to point up the great growth of job evaluation, both horizontally and vertically.

B. The Importance of Joint Participation

1. Job Evaluation is Not Perfect

If job evaluation answered dogmatically all the objectives it is set up to do, obviously this paper would not have been written. The facts are very frankly that job evaluation in an uncomfortable number of instances has failed and failed dismally. The author has studied the subject with an end of gaining insight as to why these failures took place and what can be done to alleviate or lessen future failures.
Better job evaluation programs are now more important than ever if only simply due to the fact that job evaluation is now more widely employed than ever before.

In this paper, the rudimentary functions of job evaluation have been analyzed in their basic form. The management and union viewpoints have been explored in some detail and certain conclusions reached after careful analysis of the data.

2. Labor Shunned too Often

It is apparent from this study that in far too many instances labor has literally been subjugated to job evaluation. Some managements have spent great amounts of time and money on selecting plans of evaluation, drawing of job descriptions, and detail of this type with little thought of trying to gain the cooperation of labor. While, the importance of the mechanics of the system is very important, the success of the plan begins with gaining initial cooperation of the union in approving the plan.

3. What Bilateral Installation Accomplishes

By sincerely selling the idea of job evaluation to workers and union, the battle is half-won. Unions and workers can be asked for their help in drawing up the system. If the union will agree to serving on committees, so much the better. However, even if the union refuses to serve on any of the committees feeling that they would jeopardize their future chances to censure the plan, they can still be made to feel
that they are not completely left out. In such a case, management might inform the union and workers of progress on the installation of the plan and how it will affect them.

Many inept and short-sighted managements have worked out in great detail a job evaluation system, covering all the technicalities, but have neglected just one detail - namely getting acceptance from labor on the idea.

With a bilateral inception of job evaluation, many of these future general and specific complaints as outlined in this paper will not appear since the plan is as much the work of labor as of management.

This concept of joint participation is not meant to be taken as a cure-all for future job evaluation ills. It is, however, the most important step in setting up a job evaluation program. This factor, which is basically one of human relations, has been overlooked too often by otherwise competent managements.

The extent and nature of union participation is, of course, strictly up to management. Union participation should be looked upon not so much as a negative expedient but as a positive opportunity to acquire all viewpoints on the development of the plan. The workers know a great deal more about their jobs than will ever be discovered by office analysts. Also, when a union representative is put to work on a management problem, he is apt to find that management know more about its work than labor has given it credit for. Thus, briefly, a worker can contribute real facts and he will come to believe
in the plan he has helped to create.

This aid can also be a source of strength in time of trouble. Somewhere someone has to do a lot of explaining to individuals or to small groups as to why one job rate and not another is to be increased. If the shop stewards are prepared to cope with this duty, it is probable that it can be accomplished with a minimum of friction. If management is afraid of losing some of its prerogatives it should realize that the final step of rate setting is definitely included or implied in all definitions of collective bargaining. Thus, an unsatisfactory wage rate must sooner or later come out in the open and hence might better be bargained over as part of an orderly plan, rather than as an isolated grievance.

Of course, some unions may prefer to have many grievances in which case they will be against any form of job evaluation, but it is inconceivable that unions of intelligent workers will persist in such manner for a long period of time. They will hear of better ways in other plants and will demand a more constructive leadership. Actually there are bound to be some grievances despite the best management because of intangibles in human relations that defy any prearranged system. However, job evaluation should point the way to a just decision in such grievance hearings.

It is of interest to note that even some of the pioneers of job evaluation have suggested a bilateral plan. Cooperative effort between management and labor through the
medium of job evaluation can tend to quiet wage discontent for the benefit of both parties.* So reasoned Eugene Benge, one of the foremost leaders in this field of study. With the continuing promulgation on the part of management of this principle, the future will appear brighter for successful job evaluation operation.

*3, p. 174.
I. Books


II. Booklets and Pamphlets

BIBLIOGRAPHY

III. Newspapers and Periodicals


BIBLIOGRAPHY

Personnel
41. Howard, Robert L. "Job Analysis; To Buy or Not to Buy". v. 25, May, 1946, pp. 31-35.

Tool Engineer

IV. Publications of Government Agencies, Associations, etc.

V. Personal Sources of Information

Persons Interviewed
49. Assistant Personnel Director, Dennison Manufacturing Company, Framingham, Massachusetts.
54. V. P. and Treasurer, Worcester County Trust Company, Worcester, Massachusetts.