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A job evaluation for the waterproof department of a paper manufacturing company : comparison of two methods

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A JOB EVALUATION FOR THE WATERPROOF DEPARTMENT OF A PAPER MANUFACTURING COMPANY -- COMPARISON OF TWO METHODS

BY

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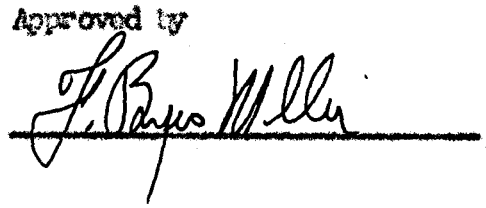

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CHAPTER I

INTRODUCTION

One of the basic problems in labor-management relations is the determination of proper wages for each job, so the worker can be assured of receiving fair compensation for the work he is required to do. Management and workers have always classified jobs in some manner when setting rates or determining if those rates were just, but usually this classification consisted of spur-of-the-moment decisions rather than a well defined and understood, written plan. With increased importance placed on labor-management relations, the classification of jobs today is accomplished by improved methods, and job evaluation is now well developed as a technique to aid in the determination of job values with the minimum of subjective reasoning. Although no method has yet been devised to measure the value of jobs in a completely objective manner, the methods used today approach the objective evaluation of jobs as nearly as possible, using presently known techniques.

Inequalities in pay rates may develop, due to any one or more of the following: (1) personal feelings or charity in setting rates; (2) aggressive foremen or workers who oversell the value of

the job; (3) lack of, or inaccurate measurement of job content; (4) change of job content without change of rate. Salary inequities will be uncovered, because workers have a tendency to compare rates and jobs. The writer has found this to be true even when the jobs are located in different mills of the same company. Failure to base pay rates upon equitable standards results in one or more labor groups being "left behind" in wage bargaining, resulting in the discontent of the groups so slighted. Neither the union nor management can control the behavior of labor under these circumstances. Job evaluation is concerned primarily with the determination of pay rates, that are in proportion to the value of the job.

Lytle described job evaluation as follows:[1]

> "Job evaluation is merely a convenient name for systematic and impartial pricing in the labor market, quite closely comparable to modern pricing of merchandise. The latter is made possible by adequate cost analysis, the former by adequate job analysis.
>
> "Job evaluation, then, is neither more nor less than an effort to apply sound principles of measurement to determine what each job in an organization is really worth. It is not what the management thinks it ought to pay, nor what the worker, or his union, thinks he ought to get, but the fair share to which a satisfactory performance of that job should entitle the man who performs it, of the profitable result to which his performance contributes."

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1. Charles Walter Lytle, Job Evaluation Methods, 1946, 3.

Job evaluation is also defined by Otis and Leukart quoting Gray,[2]

> "Job Evaluation: The complete operation of determining the value of an individual job in relation to the other jobs in the organization. It begins with job analysis to obtain job descriptions and job specifications, and includes the process of relating the descriptions by some system designed to determine the relative value of the jobs or groups of jobs."

Job description is defined by Otis and Leukart as[3]

> "..... a written description of the operations, duties, methods, working conditions, equipment and material used, lines of authority and other essential facts about a job or position",

and job specification as [4]

> "A statement of the qualities or abilities that a worker must possess to perform the job in a satisfactory manner."

There are four major methods of evaluating jobs: [5]

(1) Job Ranking
(2) Job Classification or Grade Description
(3) Point Rating
(4) Factor-Comparison

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2. Otis and Leukart, Job Evaluation (3rd Ed. 1949) 15, quoting Robert D. Gray, Systematic Wage Administration in the Southern California Aircraft Industry, 89.

3. Ibid, 15.

4. Ibid.

5. Ibid, 22, quoting Information Manual on Industrial Job Evaluation Systems, War Manpower Commission.
Ibid, 24.
Philip W. Jones, Practical Job Evaluation, 17.

The purpose of this paper is to describe the evaluation of jobs by the ranking and point methods and to compare these two methods and the results obtained by using each.

In applying the ranking method of evaluation, a job-to-job comparison is made, and the jobs are rated by considering the job as a whole. In contrast, the point system compares the job against a scale, and the jobs are rated by first breaking the job into elements and rating these elements according to the scale. This can be more clearly illustrated by Figure 1 as used by Otis and Leukart and originated by Benge, Burk and Hay.[6]

FIGURE I ILLUSTRATION OF THE VARIOUS TYPES OF RATING SCALES

Method of Comparison Used	Method of Analysis Used	
	By Considering Job Elements	By Considering the Entire Job
Comparing Job against Job	Factor-Comparison	Ranking Method
Comparing Job against same scale	Point Method	Classification Method

The Waterproof Department of a paper mill employing fifty-two men in twenty-eight different jobs was selected for this evaluation. The mill is engaged in the manufacture of waterproof papers by the coating and lamination of southern kraft paper with asphalt and waxes. The principal functions involved are receiving, storage, coating and laminating, finishing, and shipping of the paper. The mill is a four-storied, reinforced concrete structure so situated

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6. Otis and Leukart, op. cit., 41, taken from Benge, Burk and Hay, Manual of Job Evaluation, 20.

that truck shipping is done from the first floor and rail shipping is carried on via the fourth floor. The main operation takes place on the second floor where three asphalt laminating machines and one wax coating machine are operated. The sheeting, rewinding, slitting, wrapping and capping of the product are done on the third floor. The plant works two shifts per day, five days per week.

CHAPTER II

THE FOUR METHODS OF JOB EVALUATION

Each of the four methods of evaluation has weaknesses and advantages, and there is usually one of the four methods that can be used to an advantage over the rest for a specific job. The system used in a given plant may or may not be chosen as a result of careful study to select the one that is appropriate for the conditions existing in that plant. Unfortunately, the system chosen is sometimes selected because consultants or members of plant management lean toward the method with which they are most familiar, rather than the method best suited for the job.

Also, there are many variations within each separate system, since the one selected must be modified to suit the needs of the company using it. Some of the factors which help to determine the type and modification of the system used are: the type of industry; the range of jobs to be classified; and the working conditions existing in the plant. For example, a point system for a coal mining industry would be different than that for a department store. Therefore, there are two primary considerations in organizing a job evaluation program: first, the selection of the method best suited

to give the desired results; and second, the modification of the selected method to fit the particular plant.

So the reader will understand, this chapter will be devoted to a description of the four methods and the advantages and disadvantages of each.

JOB RANKING

This method consists of arranging the jobs in the order of importance by considering each job in its entirety. Ranking is often referred to as the departmental-order-of-importance method because jobs are usually ranked by individual department heads or supervisors. A job evaluation committee coordinates these rankings of all departments into one set of rankings for the entire organization. This committee then sets the rates according to the judged importance of the job and according to its rank.

One of the methods used in ranking jobs is card-sorting in which each job title, together with a brief job description, is written on an individual card, and these cards are sorted in the order of importance of the job. A better method of ranking jobs is by the paired-comparison system in which each job is compared with every other job.

The advantages of this method are: its simplicity; the speed with which it can be installed; and the low cost of installation and administration. It is also a useful technique in verifying the results of evaluation by other methods.

The disadvantages of this method are: Its failure to determine the degree of differential between jobs; the sometimes lack of raters who are familiar with the range of jobs to be evaluated; and the difficulty experienced in appraising the value of a job as a whole, resulting in failure to get an accurate measurement.

While ranking does not show the degree of differential in the job values, it does offer an orderly approach to the problem and tends to reduce the effect of personalities in setting job rates. In regard to the other disadvantages, their effect can be minimized by the use of certain techniques. As an example, with respect to the possibility of not having raters who are familiar with all jobs, incomplete ratings can be combined and averaged to obtain complete ratings of the entire job range.

The difficulty of appraising the value of a job as a whole can be partially eliminated by ranking the jobs on the basis of such job components as skill, effort, responsibility and working conditions and then averaging their weighed or unweighed ranks. This gives a far more accurate measure of job values than the ranking of the job as a whole.

Ranking as a method has a definite place in the job evaluation field and is particularly useful in verifying the results of evaluations by other methods. It is a method that is particularly suited for the small plant, because it is inexpensive to install and administer.

JOB-CLASSIFICATION

Job-classification, also called grade-description, is a method whereby jobs are sorted into predetermined grades and are arranged in order of their importance within these grades. To set up the series of grades or classes, an analysis is first made of all the jobs to be classified. The grades are then established by a committee composed of persons in the organization who are familiar with all the jobs. The grades or classes are selected on the basis of the duties, skills, responsibilities, hazards, or any other factor affecting the performance of the job.

The job grades may be divided into various classifications such as unskilled, semi-skilled, and skilled. These classifications may be further divided into sub-classifications, for example: Class A, Class B, etc., in order to better distinguish between jobs. After the grade levels have been assigned, each job is then given a relative position under that grade level.

Positions must be classified not only by levels but also by kind, such as factory, executive, etc. Jobs are usually classified first according to kind, and then according to level. A statement of the duties of each position is prepared, studied, and the job is classified according to kind and then ranked according to its appropriate level. Four general classifications (kinds) of positions are used by the United States Civil Service. These are: professional and scientific; clerical, administrative and fiscal; custodial, pro-

tective, and craft; and sub-professional. Jobs must be classified and described in a standard language using defined terms, otherwise positions of the same nature may be found with different classifications and at different levels in the same organization. This is apparently true to a certain extent in the United States Civil Service, where jobs are sometimes raised in grade by rewriting their descriptions, using more powerful and descriptive words. [1] As in all classification systems the accuracy of this method depends upon the preparation of accurate job descriptions.

In most plants, the workers have some type of classification of jobs set up in their minds, and this provides one of the major advantages of the system, making it easier to reach a general agreement about the classification of the majority of jobs. Job-classification, like ranking, is simple and inexpensive to install and administer. Most evaluation programs end with a job-classification type of rating for each job in which a job may be referred to as a grade 5 or a grade 6 job. This tends to simplify the job structure and makes the classification of specific jobs easy and understandable.

The major disadvantage of the job-classification system is the extreme care with which the grade descriptions must be written. A correct balance must be maintained between writing a description that is too general, or one that is too detailed. If the grade descriptions are too general in nature, then certain jobs may tend to fit into more

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1. Otis and Leukart, op. cit., 65.

then one classification. On the other hand, if the descriptions are too detailed, it may be impossible to assign certain jobs to any defined grade.

Another disadvantage is the difficulty experienced in correctly classifying jobs which have components falling at different levels in the rating scale.

FIGURE 2 - UNUSUAL JOBS FOR JOB-CLASSIFICATION

Job	Training Time	Responsibility For Equipment
Fork Lift Operator	Less than 30 days	$ 3,000
#3 Winderman	1 to 3 months	500

In the two jobs designated in Figure 2, the question arises as to whether the Fork Lift Operator should be given a high classification due to the responsibility for equipment, or a low classification due to the short training time required. Inversely, the No. 3 Winderman requires considerable training time, but has less responsibility for equipment. This condition will make it difficult to classify such jobs as the Fork Lift Operator and the No. 3 Winderman. Generally, the higher classified jobs will be rated high on both these factors.

Job comparison is best suited for the evaluation program in which the jobs involved have relatively few job components. Clerical jobs would be an example where the effects of working conditions, physical effort, and hazards would be minimized.

Grade-descriptions are often written from the ratings obtained by other systems of evaluation, especially the point system. When jobs are rated first by some other method such as point rating and verified by grade-description, a sound classification of jobs can be made. Therefore, one of the important uses of this method is, the verification of the results obtained by other methods. [2] Along this same general line, it is useful as a means of administering the wages determined by other methods. [3]

THE POINT SYSTEM

The point system, also known as point rating and job rating, is the most widely known and used of all the job evaluation methods. Otis and Leukart state: [4]

> "Practically every frequency study made shows that the point system is most widely used."

The same view is indicated by Carroll L. Shartle and Philip W. Jones in discussing the point system. [5]

Publicity with respect to certain specific cases in which the point system was used successfully has created a widespread acceptance of this method. Experimentation by General Electric, the National Electrical Manufacturers Association, and the National Metal Trades Association have helped to popularize the method. [6]

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2. Ibid, 294.
3. Ibid, 69.
4. Ibid, 83.

5. Philip W. Jones, op. cit., 18
   Carroll L. Shartle, Occupational Information, 124.

6. Philip W. Jones, op. cit., 18
   Otis and Leukart, op. cit., 83.

This system is based on the selection of component factors common to all jobs in the plant or industry, with usually between five and twelve factors being selected. The most recent trend is in the direction of simplification, and work has been done to prove that only three or four factors are necessary to get an accurate evaluation of jobs.[7] Time is saved by using three or four factors instead of eleven or twelve. A three factor system can be proved to be nearly as accurate as the eleven factors commonly used; however, any error made in a job evaluation using three or four factors would be more than twice as great as an eleven factor system. An experienced evaluator could use the three or four factor system to an advantage, saving a great deal of time, but in order to use it he must be skilled in its application.

If the labor union or the factory workers are represented on the job evaluation committee it would probably be necessary to use more than the minimum number of factors to satisfy everyone concerned. In using a greater number of factors, certain factors could more easily be added or subtracted to everyone's satisfaction and this would not affect the end result greatly.

Usually each factor is divided into several degrees ranging from an assigned minimum to an assigned maximum. This, however, is not entirely necessary as some point systems do not use degrees. In using degrees it is helpful to use job examples as an aid in defining them.

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7. C. H. Lawshe, Jr., "Studies in Job Evaluation: II The Adequacy of Abbreviated Point Ratings for Hourly-Paid Jobs in Three Industrial Plants", Journal of Applied Psychology, June, 1945, Vol. 29, No. 3, page 183.

Since all factors and degrees chosen are not of equal importance it is necessary to assign relative values to the various degrees and factors used. This is done by weighing the factors and degrees according to their judged importance. A job evaluation committee is chosen to determine these weighted values, and points are assigned to degrees after the weighted value of the factors has been determined.

Points may be assigned to degrees on the basis of an arithmetical or a geometrical progression. Proponents of the use of the geometrical method claim that the importance of degrees increases by a geometrical progression rather than an arithmetical progression. This is probably true when the advance in skill required from the unskilled class to the semi-skilled class, and finally to the skilled class of worker is considered. It is probably even more true when considering executive skills.

The advantages of the point system are many and widespread. One of its major advantages is that it makes use of the graphic and descriptive rating scales which are generally accepted as being most reliable and accurate. The agreement among different raters using this scale is usually close. It is, therefore, a system by which labor and management can agree on, and employee as well as employer acceptance of any evaluation system is necessary to make a plan successful. As was stated before, factors may be eliminated or added at the wish of either labor or management without altering the results to any great extent, which also leads toward employee-employer agreement. The point system makes it possible to divide all jobs into well-defined

classes or grades, by selection of point ranges for each grade. Another advantage is that the assigning of points to each job makes it possible to determine monetary values in a consistent manner in relation to the value or difficulty of the job.

Although human judgment cannot be entirely eliminated in determining job values by any system, the point rating comes as near as possible to doing this. It is basically fair to all workers and can be understood and applied by them. Evaluators can be rapidly trained to use this method with consistent results. As in the case of other evaluation methods, point rating as a method applied in any given evaluation case increases in accuracy with use.

However, the point system is difficult to set up and organise, and it requires more time than the non-quantitative systems to establish. The selection of factors and degrees, the writing of their definitions, and the rating of the jobs must be done in a skillful manner to obtain accuracy by this method. Until the workers become entirely familiar with the system it is sometimes difficult to explain exactly how the factors and degrees are selected, as well as their exact definition. An effort must be made to familiarize the workers and their supervisors with the system, as they will become suspicious and antagonistic if they do not understand it. The point system requires considerable clerical and statistical detail and for that reason is probably the most expensive system to install and administer.

Although the construction and application of the point system is a time-consuming process, much additional information which is helpful

in training, promotion, transfer, as well as other phases of personnel management is uncovered in the process of evaluating jobs by this method. While this is also true of the other three methods, the more detailed study of the jobs required for the installation of the point system makes it especially true in this case. Point rating is considered by many to be the most accurate and satisfactory of all the four methods. Philip W. Jones states:[8]

> "It is believed that the results which are obtainable by means of the point system are the most definite and defensible of any of the methods now in use."

Otis and Leukart in describing this method say:[9]

> "It is believed by many individuals that this plan is the most reliable an the most valid method of evaluating jobs."

FACTOR-COMPARISON

Factor-comparison was developed as a modification of the point system in an attempt to improve it and to further eliminate the influence of human judgment in evaluating jobs. As described by Eugene J. Benge, who is generally credited with developing this method, five factors are used which are considered to be common to all jobs.[10] The five factors as Benge lists them, are mental requirements, skill, physical requirements, responsibility, and working conditions.

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8. Philip W. Jones, op. cit., 19.

9. Otis and Leukart, op. cit., 30.

10. Philip W. Jones, op. cit., 19, quoting Eugene J. Benge, "Gauging the Job's Worth" - Industrial Relations, February, March and April, 1932.

Key jobs are selected which are judged as having wages that are correct or nearly so. These jobs are then ranked from highest to lowest under each factor in order of importance. This develops a series of five scales - one for each factor, to be used as a key in rating all other jobs for these factors. The total salary or wage of each key job is divided into five parts, and one part is assigned to each of the five factors according to its estimated value. As each job is ranked according to this scale, it is usually given a money ranking rather than a point ranking as in the point rating system. The total hourly wage can then be determined by adding the cents per hour assigned for each of the five factors.

The factor-comparison system is relatively easy to set up and install. Excellent descriptions of how to construct a job comparison scale are available.[11] As in the use of the other three systems, they must be tailor-made for the particular organization using it. However, the very nature of this system forces those using it to tailor the method for the job that is to be done. This prevents the borrowing of parts of systems used in other plants that might not be suitable for the intended job.

Factor comparison uses the job-to-job method of rating. This type of judgment is preferred by some to that of rating a job by a predetermined scale, since job-to-job comparison eliminates errors in setting up a scale. This method is simple to explain and administer, since only five factors are used. It is further simplified because

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11. Otis and Leukart - op. cit., 138
Charles Walter Lytle, op cit., 40
Philip W. Jones, op. cit., 19.

the results of the job rating are given directly in dollars and cents, eliminating the conversion of points to money values.

The major disadvantage of the factor-comparison system is that key jobs must be selected whose wages are considered to be nearly correct. If the entire wage system in the plant is under dispute, agreement must first be made on the key jobs and the wages these key jobs are to receive. Conceivably, in certain cases there are no such key jobs whose wages are nearly correct in the entire plant, and any error in selection of these jobs would throw the entire evaluation out of line. Any change in duties, responsibilities, or any other components of the key jobs will also throw the entire scale off.

Factor-comparison is simpler than the point system, and can be more easily installed and administered. It measures the differential between jobs, and in that respect is superior to ranking and job classification. Although factor-comparison is not as well known as the point system and is not generally considered as accurate, it is a method that is well worth considering before deciding upon which evaluation system is to be used.

CHAPTER III

EVALUATION BY THE RANKING SYSTEM

The ranking method is not widely used in industry today, and most references to ranking in current literature seem to regard it as a matter of academic or historical interest, rather than as a useful method. Admittedly, ranking is basically a crude method of evaluating jobs, but as a method it is useful and should have a place in modern labor-management relations. A job evaluation using the ranking method can be set up to overcome many of the characteristic disadvantages of this method. Following is a quick review of these disadvantages:

1. The degree of differential between jobs is not determined when using the ranking system.
2. By evaluating the job as a whole it is difficult to rate jobs on a fair and equal basis.
3. No one person is likely to be familiar enough with all jobs to be qualified as a rater.

From the results of the ranking, it may be assumed that the difference between all ranks is equal. This is rarely ever the case and some provision must be made to allow for the variation in the

spreads between jobs, so rates may be set accordingly. The experienced rater can divide a ranking of jobs into groups or classes, and the rates can be set according to the class in which a job falls and still further according to its rank within that class. This combines the job-classification method with ranking in evaluation. Another means of determining rates is by the selection of the base rate for common labor, either by arbitration or company policy, and the setting of the remaining rates proportionately according to the job ranks.

Since ranking consists in rating the job as a whole, some method must be used to insure consistent results when the jobs are rated by different raters. One method of refining the type of judgment required in ranking jobs is the use of the method of paired-comparison. By using this method, the rater is forced to compare each job with every other job and, consequently, it is an improvement over a simple ranking. Figure 3 shows the results of applying the paired-comparison method to the jobs in the Waterproof Department.

Table 1 offers a suggested method of further simplifying the type of human judgment required when rating jobs by the ranking method. It is patterned after a technique used by Harrington in determining the weight of factors for the point rating method.[1] Instead of ranking the job as a whole, each job was ranked on the basis of the factors: skill, effort, responsibility, and conditions. The ranks so obtained are added to give the ranking for the whole job. The writer feels that

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1. Carl C. Harrington, Job Evaluation and Wage Incentives, Chapter 3, "Weighing of Factors by Using Bench Mark Rankings", by Merle D.Schmid, 21.

Figure 3 Paired-Comparison of Jobs in Waterproof Department

	No. 1 Operator	No. 2 Operator	No. 3 Operator	No. 4 Operator	No. 1 Helper	No. 2 Helper	No. 3 Helper	No. 4 Helper	Feederman, load	Feederman, unl.	Tankman	Fork Lift Op.	Helper Lift Trk.	Janitor	Fork Lift Op. (B)	Foreman	No. 1 Winderman	No. 2 Winderman	No. 3 Winderman	No. 2 Wind. Help.	Sheeterman	Sheeterman Help.	Vrapper & Tier	Elevator Op.	Coreman	S. G. Laborer	Truck Driver	Electric Tr. Op.	RANKINGS	NOTE
No. 1 Operator		X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	2	Compare each job listed on the left with each job listed on the top of the page. If job on left is more difficult than one on top mark x in the opposite square. If the job on the left is less difficult leave the square blank.
No. 2 Operator	X			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	5	
No. 3 Operator	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	1	
No. 4 Operator		X			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	3	
No. 1 Helper						X		X	X	X	X		X	X		X				X		X	X	X	X			14	
No. 2 Helper									X	X			X	X										X	X	X			21	
No. 3 Helper					X	X		X	X	X	X		X	X		X				X		X	X	X	X	X			13	
No. 4 Helper						X			X	X	X		X	X		X				X		X	X	X	X	X			15	
Feederman, load														X										X		X			25	
Feederman, unload									X			X	X											X	X	X			22	
Tankman						X			X	X			X	X		X				X		X	X	X	X	X			16	
Fork Lift Operator					X	X	X		X	X	X		X	X	X	X				X		X	X	X	X	X		X	10	
Helper Fork Lift Truck									X				X											X		X			24	
Janitor																													28	
Fork Lift Operator(night)					X	X	X	X	X	X	X		X	X		X				X		X	X	X	X	X		X	11	
Helperman						X			X	X			X	X										X	X	X			20	
No. 1 Winderman					X	X	X	X	X	X	X	X	X	X	X	X				X		X	X	X	X	X	X	X	8	
No. 2 Winderman	X				X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	4	
No. 3 Winderman					X	X	X	X	X	X	X	X	X	X	X	X	X			X		X	X	X	X	X	X	X	7	
No. 2 Winderman's Helper						X			X	X			X	X		X							X	X	X	X			18	
Sheeterman					X	X	X	X	X	X	X	X	X	X	X	X	X		X	X		X	X	X	X	X	X	X	6	
Sheeterman's Helper						X			X	X			X	X		X				X			X	X	X	X			17	
Wrap or & Tier						X			X	X			X	X		X							X	X	X			19	
Elevator Operator														X															27	
Foreman									X				X	X										X		X			23	
Shipping Gang Laborer														X										X					26	
Truck Driver					X	X	X	X	X	X	X	X	X	X	X	X				X		X	X	X	X	X		X	9	
Electric Truck Operator					X	X	X	X	X	X	X	X	X	X		X					X	X	X	X	X	X			12	

TABLE NO. 1

RANKING BY JOB COMPONENTS

JOB TITLES	Skill 50% Rank	Skill 50% Weighted Rank	Effort 10% Rank	Effort 10% Wgtd Rank	Responsibility 30% Rank	Responsibility 30% Wgtd Rank	Conditions 10% Rank	Conditions 10% Wgtd Rank	TOTAL Wgtd Ranking	FINAL RANK
1. No. 1 Operator	2	1.0	9	.9	2	6	2	2	2.7	2
2. No. 2 Operator	5	2.5	11	1.1	5	1.5	6	.6	5.7	5
3. No. 3 Operator	1	.5	8	.8	1	.3	1	.1	1.6	1
4. No. 4 Operator	3	1.5	10	1.0	3	.9	4	.4	3.8	3
5. No. 1 Helper	16	8.0	13	1.3	13	3.9	3	.3	13.5	12
6. No. 2 Helper	18	9.0	22	2.2	18	5.4	8	.8	17.4	19
7. No. 3 Helper	15	7.5	12	1.2	9	2.7	7	.7	12.1	10
8. No. 4 Helper	17	8.5	14	1.4	14	4.2	9	.9	15.0	15
9. Feederman Load	25	12.5	25	2.5	25	7.5	12	1.2	23.7	25
10. Feederman Unload	24	12.0	1	.1	22	6.6	11	1.1	19.8	22
11. Tankman	14	7.0	19	1.9	15	4.5	5	.5	13.9	14
12. Fork Lift Opr.	10	5.0	16	1.6	10	3.0	16	1.6	11.2	9
13. Helper, Fork Lft	27	13.5	23	2.3	24	7.2	18	1.8	24.8	26
14. Janitor	28	14.0	24	2.4	28	8.4	23	2.3	27.1	28
15. Fork Lift Opr.(N)	11	5.5	17	1.7	11	3.3	17	1.7	12.2	11
16. Balerman	21	10.5	2	.2	23	6.9	15	1.5	19.1	21
17. No. 1 Winderman	7	3.5	15	1.5	8	2.4	21	2.1	9.5	8
18. No. 2 Winderman	4	2.0	3	.3	4	1.2	19	1.9	5.4	4
19. No. 3 Winderman	8	4.0	4	.4	6	1.8	22	2.2	8.4	7
20. No. 3 " Hlpr.	19	9.5	5	.5	16	4.8	20	2.0	16.8	17
21. Sheeterman	6	3.0	6	.6	7	2.1	13	1.3	7.0	6
22. Sheeterman's Hlpr	20	10.0	7	.7	19	5.7	14	1.4	17.8	20
23. Wrapper & Tier	13	6.5	18	1.8	21	6.3	28	2.8	17.4	18
24. Elevator Operator	23	11.5	28	2.8	20	6.0	25	2.5	22.8	24
25. Coreman	22	11.0	20	2.0	26	7.8	10	1.0	21.8	23
26. Shipping Laborer	26	13.0	21	2.1	27	8.1	24	2.4	25.6	27
27. Truck Driver	9	4.5	27	2.7	12	3.6	27	2.7	13.5	13
28. Elec.Truck Opr.	12	6.0	26	2.6	17	5.1	26	2.6	16.3	16

NOTE: Weights used are same as those used in evaluation by Point System.

this method adds considerable accuracy to job rankings, while not complicating the method to any great extent.

In organizations of any great size it is often difficult to find any one person familiar enough with all jobs to be able to rank the entire job range. This necessitates the combining of ratings of two or more raters who have only rated a portion of the jobs. The rankings of each rater are translated into a rating on a linear scale and these ratings are averaged, giving a new ranking representing the combined efforts of all raters. Such a method is described by Otis and Leukart.[2] The mere averaging of the ranks of the different raters can also be used to combine rankings.[3]

It is well to review again the advantages of ranking as a job evaluation method.

1. It is the simplest and fastest method to install. The costs of applying it are low.
2. It is easy to explain and apply.
3. It helps to eliminate the effects of personalities in the setting of job rates.

The jobs in the Waterproof Department were analyzed* and the Job Descriptions (Appendix I) and the Job Specifications (Appendix II)

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2. Otis and Leukart, op. cit., p. 59, quoting Clark L. Hull, Aptitude Testing, p.p. 386-390.

3. Ibid. Quoting H. E. Garrett, "An Empirical Study of Various Methods of Combining Incomplete Order of Merit Ratings". Journal of Educational Psychology, 1924, Vol. 15, pages 157-172.

* NOTE: The Job Descriptions and Job Specifications as shown in Appendix I and Appendix II, in their final form, represent the Descriptions and Specifications written especially for the use in applying the point system. The only difference in the Descriptions and Specifications written for use in ranking or in point rating is that in the latter case certain additional information is required. The descriptions and specifications for use in applying the point system were written so as to supply the information required to fill out the Job Analysis Data Sheets (See Appendix IV).

were written. From this information the jobs were then ranked by a committee consisting of the mill superintendent, the assistant superintendent, a day foreman, and the writer, using the paired-comparison method of ranking. Figure 3 shows the results of this ranking. Table 1 shows the same jobs ranked by averaging the rankings of four job components. Since the results obtained from the ranking-by-job-component method are believed by the writer to be more accurate than those obtained by paired-comparison, only the former will be considered in comparing the ranking and point methods.

Wage Administration

All jobs were listed in order of rank according to the results as obtained by the ranking-by-job-component method. Jobs were divided into classifications and sub-classifications as shown in Table 2. The jobs as ranked in Table 2 lend themselves readily to a division into three classifications. The first is composed entirely of machine operators, which includes all of the more highly skilled jobs. The second is composed of semi-skilled jobs and this class is easily separated from the unskilled class because of the responsibility for equipment or machinery, as well as the increase in skill required in the semi-skilled class.

The jobs in each class were divided into sub-classes in such a manner that wages could be assigned in a consistent manner from the lowest to the highest ranked job.

TABLE 2

WAGE CLASSIFICATION FOR THE SHIPPING INDUSTRY

Class of Operation	Sub-Class.	Rank	Job Title	Present Wage	Proposed Wage
Skilled	Class A	1	No. 3 Operator	1.16	1.16½
" "	"	2	No. 1 Operator	1.16	1.16½
" "	D	3	No. 4 Operator	1.31½	1.30½
" "	"	4	No. 2 Lineberman	1.31½	1.30½
" "	C	5	No. 2 Operator	1.16	1.30½
" "	"	6	Shoeberman	1.24	1.30½
" "	D	7	No. 3 Lineberman	1.19	1.29½
" "	"	8	No. 1 Lineberman	1.31½	1.32½
Semi-Skilled	Class A	9	Fork: 14/6 Op.	1.10½	1.15½
" "	"	10	No. 3 Helper	1.10	1.15½
" "	"	11	Fork: 14/6 Op. (2)	1.13½	1.15½
" "	B	12	No. 1 Helper	1.10	1.13½
" "	"	13	Crane: Driver	1.10½	1.13½
" "	"	14	Bosman	1.10½	1.13½
" "	C	15	No. 4 Helper	1.10	1.11½
" "	"	16	Elect. Crane Op.	1.10½	1.11½
" "	"	17	No. 2 Mixt. Helper	1.10	1.11½
" "	D	18	Temp or A Mate	1.07½	1.09½
" "	"	19	No. 2 Helper	1.10	1.09½
" "	"	20	Shoeberman Helper	1.10	1.09½
" "	"	21	Deckman	1.07½	1.09½
Unskilled	Class A	22	Pool., unload	1.07½	1.07½
" "	"	23	Conveyor	1.13½	1.07½
" "	"	24	Elevator Op.	1.07½	1.07½
" "	"	25	Pool., load	1.07½	1.07½
" "	"	26	Help Fk. Fork: 14/6	1.07½	1.07½
" "	"	27	Ship Ing Gang	1.07½	1.07½
" "	"	28	Janitor	1.07½	1.07½

NOTE: This table was drawn to explain the method of grading wages by the existing system, and is not intended as a proposed wage scale.

CHAPTER IV

EVALUATION BY THE POINT SYSTEM

After making a preliminary survey of the jobs in the Waterproof Department, a list of the titles of all jobs was compiled. An analysis of these jobs was then conducted to obtain the information necessary to write the job descriptions. This analysis was carried out by interviewing the foreman, the supervisors, and the workers, and by observing the workers on the job. Jobs were compared with similar jobs listed in the Dictionary of Occupational Titles, to obtain additional information.[1] Then, job descriptions were written from the information obtained in the job analysis.

The job descriptions as written for the Waterproof Department (See Appendix I) consist of three parts:

1. Job Title, for identification of the job.
2. Job Summary, to describe the content and scope of the job.
3. Work Performed, to give a detailed description of the job.

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1. Dictionary of Occupational Titles, Part I and II, U. S. Department of Labor, Bureau of Employment Security, Jan. 1950.

After the jobs have been analyzed and the job descriptions written, it is possible to select the factors on which the jobs will be rated. Factors were selected under the general classification of skill demands, effort, responsibilities, working conditions, and hazards. The following factors were chosen as being applicable to the range of jobs that were to be classified:

Skill Demands

- Training time required
- Education
- Complexity of the job

Effort

- Endurance
- Strength

Responsibility

- For Equipment
- For Materials or Product
- For Safety of Others
- For Work of Others

Job Conditions

- Working Conditions
- Hazards

A major consideration in the selection of factors is the choosing of those factors which can be most nearly rated in an objective manner. The two factors, Responsibility for Equipment, and Responsibility for Product or Material, can be used for the purpose of illustration. Table 3 shows how the ratings for each job on these two factors were computed. When factors such as these are used, the point system can be made to nearly approach objectivity in rating jobs.

TABLE 3

DETERMINATION OF PRODUCT, MATERIAL & EQUIPMENT VALUES

JOB	RESPONSIBILITY FOR PRODUCT OR MATERIAL PRODUCTION X SALE PRICE = VALUE OF PRODUCT	RESPONSIBILITY FOR EQUIPMENT EQUIPMENT	VALUE
1. No. 1 (Asphalt) Machine Operator	28,969 lb. shift x 9½ lb. = $2,679 shift	Motor, Control & Combining Rolls	$2000
2. No. 2 (Wax) Machine Operator	13,153 lb. shift x 11¢ = $1,447 shift	Motor & Control	$1000
3. No. 3 (Asphalt) Machine Operator	43,654 lb. shift x 9 = $3,929 shift	Drive and Coating Rolls	$4500
4. No. 4 (Asphalt) Machine Operator	25,663 lb. shift x 9½ lb. = $2,374 shift	Motor, Control & Combining Rolls	$2000
5. No. 1 Helper *	50% x $2679 = $1340	50% x $2000 =	$1000
6. No. 2 Helper *	50% x $1447 = $724	50% x $1250 =	$ 500
7. No. 3 Helper *	50% x 3929 = $1965	50% x $4500 =	$2250
8 No. 4 Helper *	50% x $2374 = $1187	50% x $2000 =	$1000
9. Feederman (load)	May damage up to $100 paper	Wrenches, Collars & Shafts	$ 100
10. Feederman (unload)	May damage up to $100 paper	Hand Truck	$ 150
11. Tankman	Waxes and Asphalt $1200	Steam Pump & Controls	$1000
12. Fork Lift Operator	May damage up to $180 paper	Fork Lift Truck	$2400
13. Helper, Lift Truck	May damage up to $100 paper	Run rolls into Steam Pipes	$ 150
14. Janitor	May damage $100 of Product	Brooms, mops, scrappers	$ 25
15. Fork Lift Operator (n)	May damage up to $180 paper	Fork Lift Truck	$2400
16. Baleman	Improperly tied bales $50	Keep Gears Clean	$ 200

TABLE 3 - Continued

JOB	RESPONSIBILITY FOR PRODUCT OR MATERIAL PRODUCTION X SALE PRICE = VALUE OF PRODUCT	RESPONSIBILITY FOR EQUIPMENT EQUIPMENT	VALUE
17. No. 1 Winderman	14,000 lb. shift x 10¢ = $1,400	Drive, Variable & Slitters	$ 500
18. No. 2 Winderman	22,060 lbs. shift x 10¢ lb. = $2,206	DC drive, shift, & Slitters	$1500
19. No. 3 Winderman	21,726 lbs. shift x 9 3/4¢ lb. - $2118	Motor, Clutch & Slitters	$ 300
20. No. 2 Winderman's Helper *	50% x $2206 = $1103	50% x $1500 =	$ 750
21. Sheeterman	12,000 lbs. shift x 9½¢ lb. = $1140	Motor, Gears, knives	$1200
22. Sheeterman's Helper *	50% x $1140 = $570	50% x $1200	$ 600
23. Wrapper and Tyer	Improper Wrapping of Rolls $200	Tape & Strap Machine	$ 75
24. Elevator Operator	May damage $100 paper	Motor and Cage	$ 300
25. Coreman	May damage $50 cores	Core Saw	$ 150
26. Shipping Gang Laborer	May damage $100 paper	Wrench, Saw, Hammer	$ 50
27. Truck Driver	May damage $150 paper	Motor Truck	$2000
28. Electric Truck Operator	May damage $150 paper	Electric Truck	$1200

* Helper's responsibility set at 50% of Operator's in each case.

The next step is the selection of the degrees to be used to evaluate the jobs on each factor. This is done prior to assigning values or weights to the factors because it is easier to determine the value of each factor after the degrees have been established. Degrees were selected to differentiate adequately between all jobs, and to cover the range of jobs to be rated. All degrees and factors are defined in the Job Evaluation Manual (Appendix III).

After selecting the factors and degrees it is necessary to determine the relative values of the factors. The need for the weighing of factors becomes obvious when the jobs are rated by factors bearing equal rates. Jobs receiving high ratings on factors such as endurance, strength, or working conditions could receive total ratings equal or higher than the ratings for jobs requring high skill or responsibility. This actually occurred when the jobs in the Waterproof Department were ranked in a similar manner as that shown on Table 1, Chapter III, without the use of weighted factors, and several of the lower skilled jobs ended with rankings that were obviously out of line.

There are two methods of determining the relative values of factors, the most commonly used being that described by Otis and Leukart as follows:[2]

1. "One or more juries are selected to judge the relative values of the factors.

2. "These juries are instructed to study the job evaluation manual carefully, especially the factor definitions and degree definitions.

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2. Otis and Leukart, op. cit., 230.

3. "Each member of the jury is asked to rank the factors in order from the one which contributes most to the total value of the jobs, to the one which contributes least.

4. "Instructions are then issued to members of the jury: 'Assuming that the relative values when totaled should equal 100 per cent, distribute this 100 per cent among the factors according to your judgment of their relative values. Make sure that the values assigned total 100 per cent.'

5. "The relative values so obtained are averaged."

A second method is described by Harrington and consists essentially of the following steps:[3]

1. Key jobs are selected whose wages are judged to be correct or nearly so.

2. The jobs are ranked by job components such as skill, effort, responsibility, and conditions, which correspond to the general classification of factors on which the jobs are to be finally ranked.

3. Trial wage curves are drawn, using various weights for the job components until the curve showing the minimum deviation is determined. This is illustrated in Charts 1 and 2.

The validity of this method is dependent upon the selection of proper key jobs. As to which of the two methods is best, it is hard to say, but in the writer's opinion both methods, when backed by sound judgment, will give satisfactory results. If the selected weights for a given evaluation result in point ratings that are obviously incorrect, then the weights must be altered to correct this. Ratings

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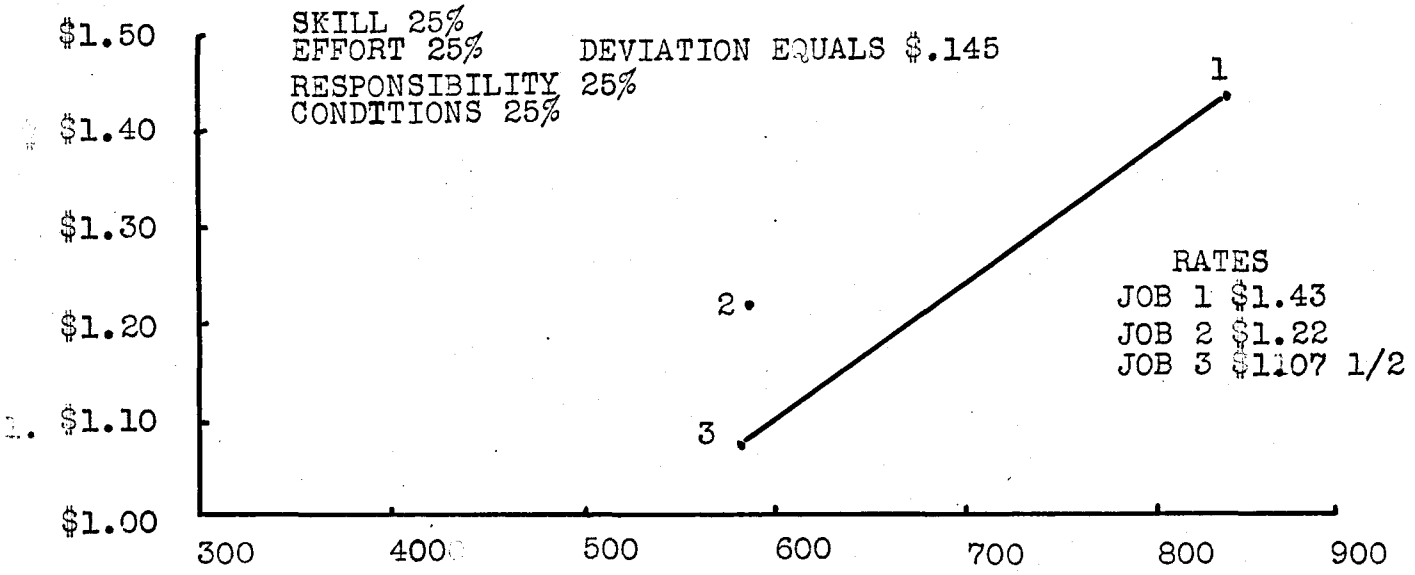
3. Carl C. Harrington, Job Evaluation and Wage Incentives, quoting Merle D. Schmid, "Weighting of Factors by Using Bench Mark Ratings", 21.

CHART #1

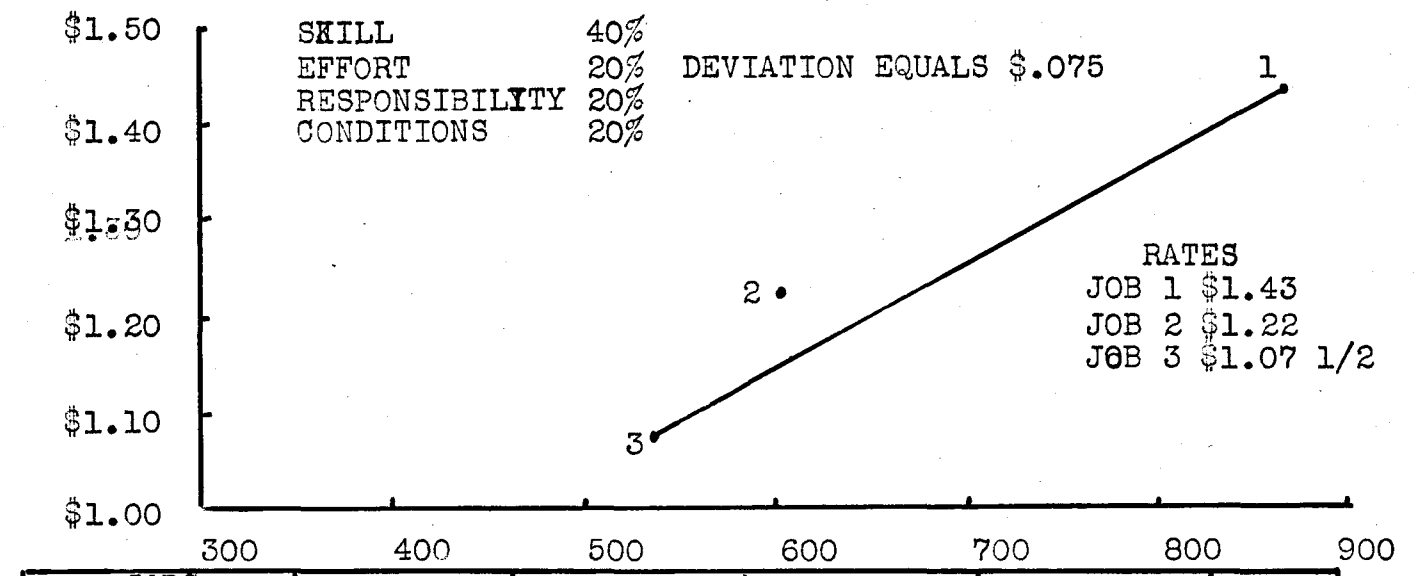
DETERMINATION OF FACTOR WEIGHTS

TRIAL 1



JOBS	SKILL 250		EFFORT 250		RESP. 250		CONDIT. 250		TOTAL
	RANK	POINTS	RANK	POINTS	RANK	POINTS	RANK	POINTS	POINTS
NO 1 OPERATOR	1	250	3	84	1	250	1	250	834
NO 3 WINDERMAN	2	167	2	167	3	84	3	84	585
S.G. LABORER	3	84	1	250	2	167	2	167	585

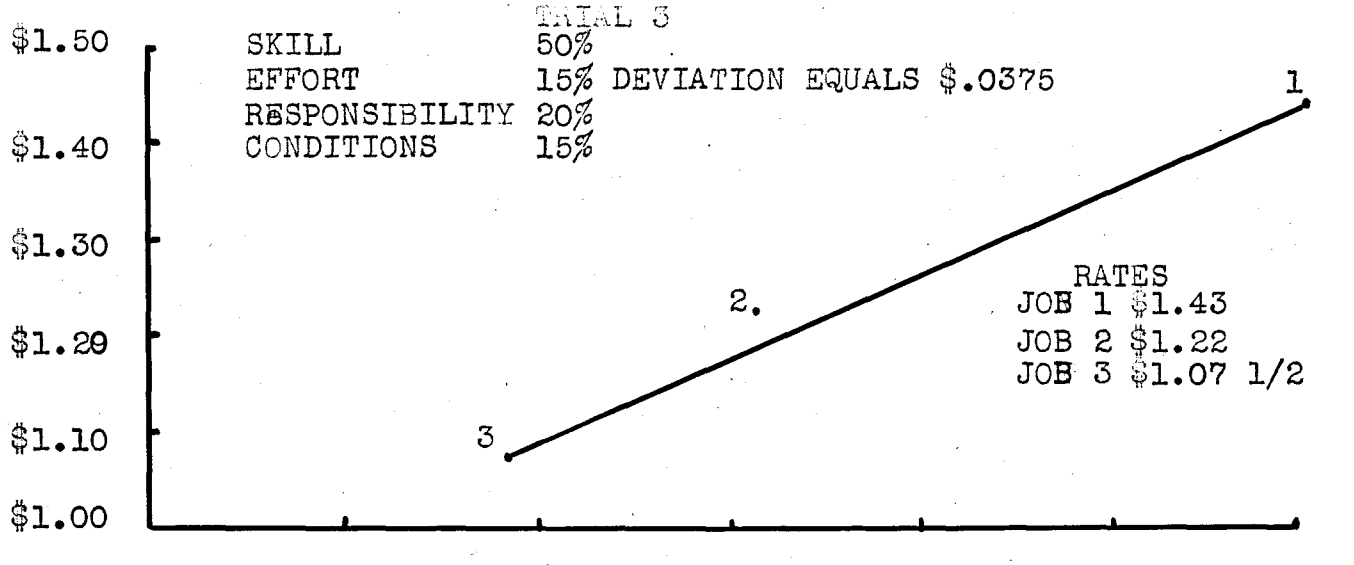
TRIAL 2



JOBS	SKILL 400		EFFORT 200		RESP. 200		CONDIT. 200		TOTAL
	RANK	POINTS	RANK	POINTS	RANK	POINTS	RANK	POINTS	POINTS
NO 1 OPERATOR	1	400	3	267	1	200	1	200	867
NO 3 WINDERMAN	2	267	2	133	2	133	3	67	600
S.G. LABORER	3	133	1	200	3	67	2	133	532

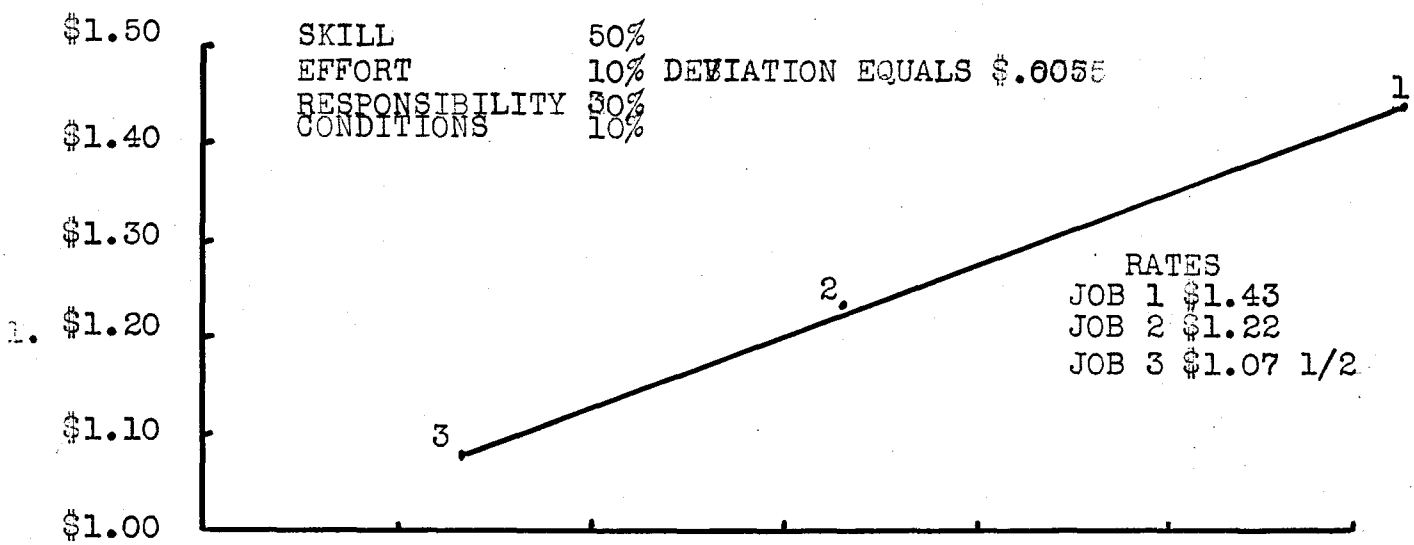
DETERMINATION OF FACTOR WEIGHTS (CONTINUED)

TRIAL 3



JOBS	SKILL 500		EFFORT 150		RESP. 200		CONDIT. 100		TOTAL
	RANK	POINTS	RANK	POINTS	RANK	POINTS	RANK	POINTS	POINTS
NO 1 OPERATOR	1	500	3	50	1	200	1	150	900
NO 3 WINDERMAN	2	333	2	100	2	133	3	50	616
S.G. LABORER	3	167	1	150	3	67	2	100	484

TRIAL 4 (ACCEPTED)



JOBS	SKILL 500		EFFORT 100		RESP. 300		CONDIT. 100		TOTAL
	RANK	POINTS	RANK	POINTS	RANK	POINTS	RANK	POINTS	POINTS
NO 1 OPERATOR	1	500	1	33	3	300	1	100	933
NO 3 WINDERMAN	2	333	2	67	2	200	3	33	633
S.G. LABORER	3	167	3	100	1	100	2	67	434

can be verified by a simple ranking of the jobs and comparison of the point scores and the rankings. In the absence of a satisfactory committee to judge the weighing of factors, the second method was used, as shown in Charts 1 and 2 to determine the relative values of the general classes of factors for the jobs in the Waterproof Department. These weights were then divided among the factors under each general class according to the judged importance of the factor.

Arithmetical vs. Geometrical Progression

As previously stated, the use of a geometrical progression in assigning point values is endorsed by many on the basis that levels of factors such as skill and responsibility, grow by increasingly greater amounts as the higher classifications of jobs are approached. This can be shown by an examination of the structure of executive jobs in an organization where the value of the jobs usually increases manifold on the upper levels. By using an arithmetical progression, degree levels are assumed to advance by equal steps.

The jobs in the Waterproof Department were rated by both an arithmetical and geometrical scale in an effort to determine the more advantageous of the two. A wage curve drawn from the resulting ratings showed very little deviation one from the other. This may have been due to the fact that the simplicity of the jobs rated was such that only a relatively few degree levels were necessary to rate them. If the jobs had covered a wider range of skills, effort, responsibilities and conditions, then possibly six or eight degree levels would have been

required. A wage curve drawn from the ratings by both methods would undoubtedly show a difference in this case. For simplicity, the arithmetical progression was used in the program under discussion. Point values were assigned to the degree levels, using an arithmetical progression in the following manner:[4]

Table 4 - Assignment of Point Values by Arithmetical Progression

FACTOR	DEGREES			
	I	II	III	IV
1. Training Time	200	110	20	
2. Education	150	83	15	
3. Complexity of Job	150	83	15	
4. Endurance	50	28	5	
5. Strength	50	28	5	
6. Responsibility for Equipment	90	63	36	9
7. Responsibility for Material or Product	90	63	36	9
8. Responsibility for Safety of Others	90	63	36	9
9. Responsibility for Work of Others	30	3		
10. Working Conditions	50	28	5	
11. Hazards	50	35	20	5

1. The factors were listed with the corresponding degree levels from high to low as in Table 4, Degree I being the highest level. The percentage values of the factors were assigned to all lowest levels, making a total of 100 possible points. To retain a relative value for

4. Otis and Leukart, op. cit., 112.

the highest levels, values were assigned by multiplying the lowest values by 10. Total value for all Degree I levels equals 1000.

2. The lowest degree level was subtracted from that of the highest. Using the factor, Hazards, as an example.

$$50 - 5 = 45$$

3. The difference is then divided by the total number of degrees minus one.

$$45 \div 3 = 15$$

4. Add the common difference so obtained to the lowest degree level to obtain the value of the next highest level.

$$5 + 15 = 20, \text{ value of level III}$$

$$20 + 15 = 35, \text{ value of level II}$$

Verification of Results of the Job Rating

After all jobs had been rated and the points totaled, an effort was made to verify the results. The jobs were listed in order of point rankings from highest to lowest and this list was examined for any discrepancies, that is to say, any jobs which obviously were out of place. When a questionable ranking was noted, the accuracy of the rating was checked in the following manner:

The Job Analysis Data Sheet (Appendix IV) of the questionable job was laid side by side on a table with those of the next highest and next two lowest rated jobs. Then the ratings of all five jobs were compared factor by factor to insure a consistent rating. By comparison with the next highest and lowest jobs a more accurate rating is obtained.

A further verification of the point ratings was made by comparing the point values of all similar jobs, factor by factor. The Job Analysis Data Sheets were sorted into groups of similar jobs such as machine operators, machine helpers, windermen, etc. The sheets of each group, one group at a time, were arranged on a table in such a manner that they could be compared factor by factor. This comparison helps the rater render a more consistent judgment in valuing the job.

The Wage Curve

A survey of the wages in thirteen plants in the vicinity of the Waterproof Department was made to determine the average community rate. Since it was nearly impossible to find jobs of a nature equivalent to those in question, only the common labor rates were used. It was found that the average wage for common labor in the community was $.92 as against $1.07½ paid in the Waterproof Department. On the assumption that the base rate now in effect was in line with community rates, it was only necessary to establish a proper relationship between the common labor rates and the rates for the jobs of higher value. This was accomplished by drawing a wage curve as shown in Chart 3.

After all jobs had been pin-pointed on Chart 3, an average curve was drawn, using the method of least squares.[5] Wage rates were calculated from the formula,

$$y = a + bx$$

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5. Ibid, 355
Brumbaugh and Kellogg, Business Statistics, 1946, 571.

where x equals the point value of the job, y equals the hourly rate, a equals the value of y when x equals 0 and b is the slope of the wage curve.

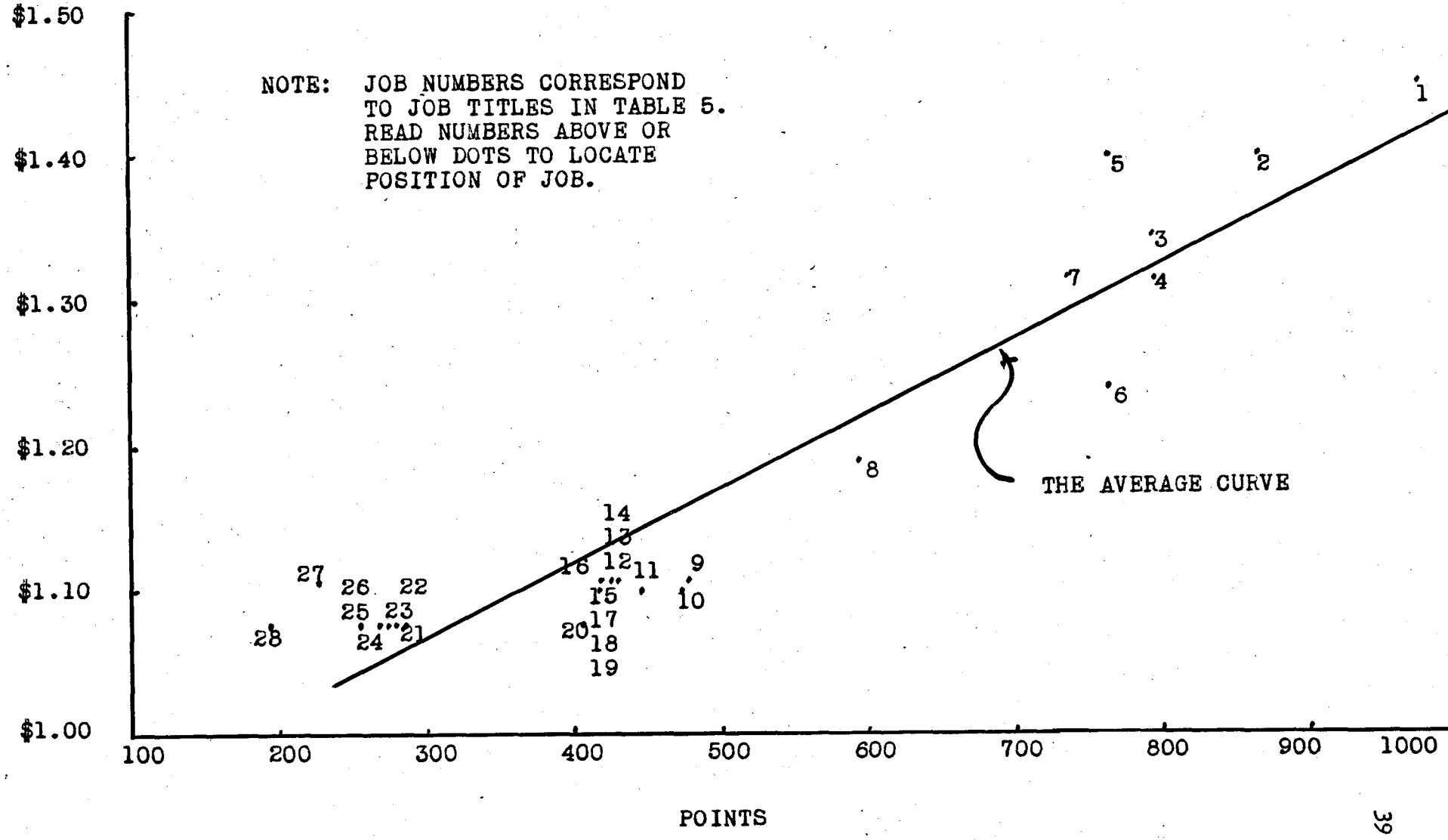
An examination of the pattern made when the jobs are plotted on the Wage Curve (Chart 3) shows that three separate and rather distinct groups of points were formed. These groups do not lie in a straight line but rather in the shape of a curve or parabola. This occurs frequently in plotting wages and is usually the result of the common labor rates being higher in proportion to the job value, than the rates for the other grades. This has come about as the result of legislation such as the minimum wage laws, the efforts of organized labor to raise the standards of the working man, and the recognition by management that certain minimum wages are necessary to provide a satisfactory standard of living. As a result, all the common labor jobs on Chart 3 are in a position above the average wage curve.

In order to maintain all pay rates in proportion to the value of the job in such a case, it becomes necessary to raise the pay of the other jobs to maintain a consistent relationship. In most cases the increased payroll necessary to accomplish this would place a serious burden on the plant operation. There are several ways of maintaining a definite wage pattern and eliminating the need for a large increase in the payroll.

One method of doing this is by drawing an average parabola through the wage pattern and adjusting the wages to this curve. The

CHART 3

THE WAGE CURVE



determination of the parabola representing the average wage curve is a somewhat complicated procedure and it is questionable as to whether labor and its representatives would be willing to agree to its use. The parabola, while eliminating the need for large wage increases in the middle of the curve, has a tendency to make up for this by requiring large increases for the higher skilled jobs whose point values lie on the upper or steep portion of the parabola.

A simpler method of setting the wages is to use the straight line wage curve, but discontinue the curve at the point it crosses the value of the common labor rate. Since payment for all jobs lying below this point will be at the same rate, there is no need to continue the curve beyond the common labor rate. This is illustrated in Chart 4 where the slope and position of the wage curve has been adjusted from that of the average curve as was indicated in Chart 3, so as to give a more reasonable and workable wage pattern. This method eliminates any unbalancing influence the common labor rate may have on the rest of the wage rates.

Using the new curve, wage grades covering various spans of point values were tried by trial and error until a satisfactory series of wage grades were developed. These grades, with the rates for each, are indicated by the steps in Chart 4. Table 5 shows the wage pattern resulting from the use of this Chart.

CHART 4

THE WAGE CURVE ADJUSTED FOR WAGE ADMINISTRATION

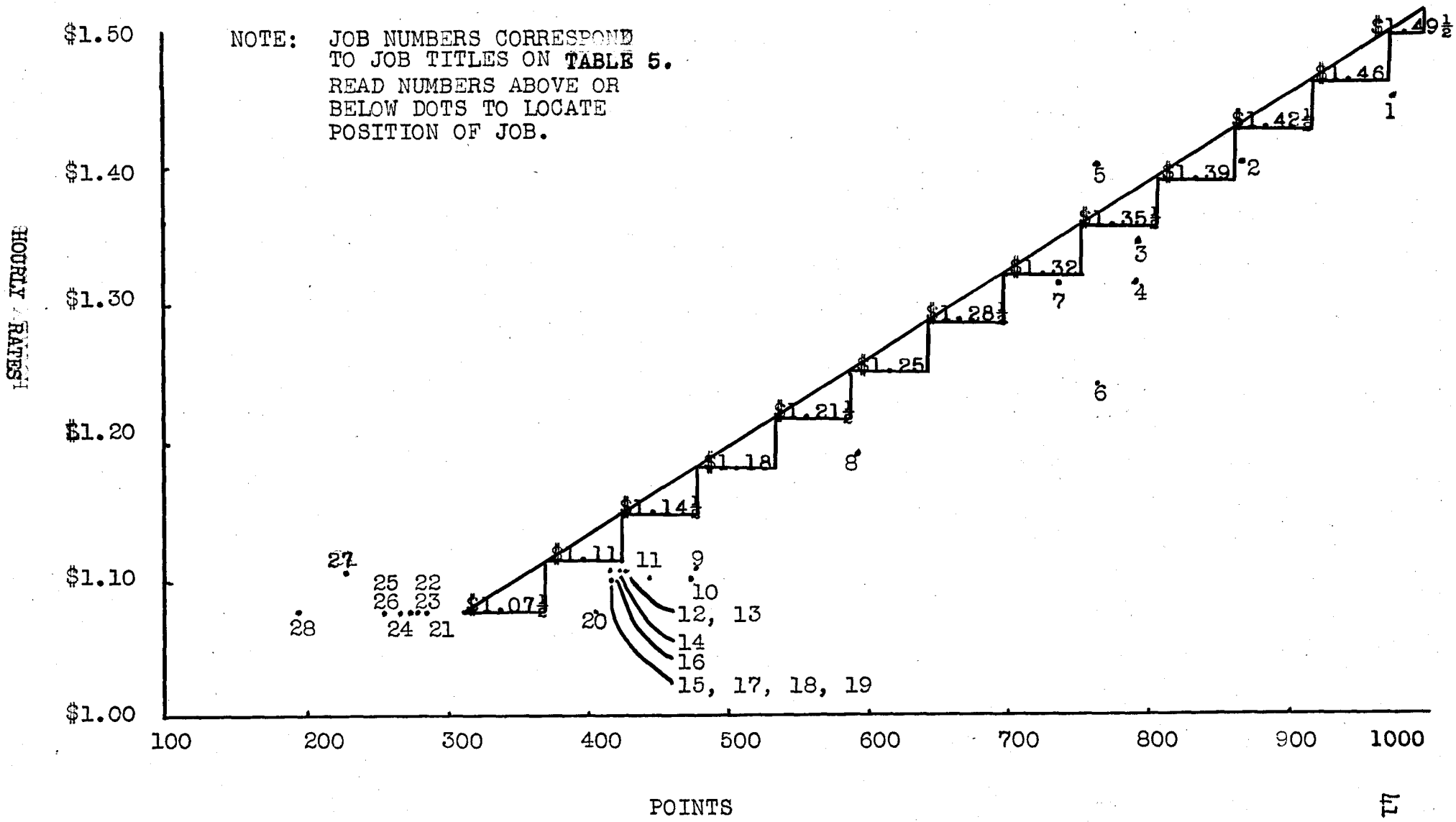


TABLE 5

Wages As Determined By the Point Method

Job Title	Point Values	Present Wage	Proposed Wages
1. No. 3 Operator	978	1.45	1.49½
2. No. 1 Operator	869	1.40	1.42½
3. No. 4 Operator	792	1.34½	1.35½
4. No. 2 Winderman	792	1.31½	1.35½
5. No. 2 Operator	765	1.40	1.35½
6. Sheeterman	765	1.24	1.35½
7. No. 1 Winderman	738	1.31½	1.32
8. No. 3 Winderman	594	1.19	1.25
9. Truck Driver	477	1.10½	1.14½
10. No. 3 Helper	473	1.10	1.14½
11. No. 1 Helper	446	1.10	1.14½
12. Fork Lift Operator	424	1.10½	1.11
13. Fork Lift Operator (night)	424	1.10½	1.11
14. Electric Truck Operator	423	1.10½	1.11
15. No. 4 Helper	419	1.10	1.11
16. Tankman	419	1.10½	1.11
17. No. 2 Helper	419	1.10	1.11
18. No. 2 Winderman's Helper	419	1.10	1.11
19. Sheeterman's Helper	419	1.10	1.11
20. Balerman	406	1.07½	1.11
21. Wrapper and Tyer	285	1.07½	1.07½

TABLE 5 - Continued

Wages As Determined By the Point Method

Job Title	Point Values	Present Wage	Proposed Wages
22. Feederman, unload	277	1.07½	1.07½
23. Helper Fork Lift Truck	275	1.07½	1.07½
24. Elevator Operator	269	1.07½	1.07½
25. Feederman, load	255	1.07½	1.07½
26. Shipping Gang Laborer	255	1.07½	1.07½
27. Coreman	228	1.10½	1.07½
28. Janitor	191	1.07½	1.07½

NOTE - This Table was drawn to explain the method of setting wages by the Point system and is not intended as a proposed wage scale.

CHAPTER V

COMPARISON OF RESULTS OBTAINED BY RANKING AND POINT METHODS OF EVALUATION

Tables 6 and 7 show a comparison of the results obtained by the point and ranking methods of evaluation. Since the results obtained by the ranking-by-job-component method are considered more accurate than those obtained by factor-comparison, only the results of the former method will be considered in this chapter.

An examination of the results obtained by ranking as indicated in Table 6 show that thirteen jobs were placed in the same relative ranks, and seven were placed within one rank of these in the point method. Of the remaining ranks, four jobs were rated two ranks off, two jobs three ranks off, and two jobs four ranks off. A review of the two methods of evaluation will show the reason for these differences. In ranking jobs, as has been stated before, some standard or quality that is common to all jobs must be used for the comparison. Since it is difficult to compare a job containing a high skill ranking and low responsibility ranking with one which is ranked the reverse on these two job components, the method of ranking by weighted components has been suggested in this paper to overcome this difficulty. When the jobs were ranked by job component, some definition of each

TABLE 6

Comparison of Results of Evaluation by Point Rating and by Ranking

	Point Rating	Ranking
1.	No. 3 Operator	No. 3 Operator
2.	No. 1 Operator	No. 1 Operator
3.	No. 4 Operator	No. 4 Operator
4.	No. 2 Winderman	No. 2 Winderman
5.	No. 2 Operator	No. 2 Operator
6.	Sheeterman	Sheeterman
7.	No. 1 Winderman	No. 3 Winderman
8.	No. 3 Winderman	No. 1 Winderman
9.	Truck Driver	Fork Lift Operator
10.	No. 3 Helper	No. 3 Helper
11.	No. 1 Helper	Fork Lift Operator (Night)
12.	Fork Lift Operator	No. 1 Helper
13.	Fork Lift Operator (Night)	Truck Driver
14.	Electric Truck Operator	Tankman
15.	No. 4 Helper	No. 4 Helper
16.	Tankman	Electric Truck Operator
17.	No. 2 Helper	No. 2 Winderman's Helper
18.	No. 2 Winderman Helper	Wrapper and Tyer
19.	Sheeterman's Helper	No. 2 Helper
20.	Balerman	Sheeterman's Helper
21.	Wrapper and Tyer	Balerman
22.	Feederman, unload	Feederman, unload
23.	Helper Fork Lift Truck	Coreman
24.	Elevator Operator	Elevator Operator
25.	Feederman, load	Feederman, load
26.	Shipping Gang Laborer	Helper, Fork Lift Truck
27.	Coreman	Shipping Gang Laborer
28.	Janitor	Janitor

TABLE 7

WAGES AS DETERMINED BY BOTH METHODS

Job Title	Present Wage	Wages By Point System	Wages By Ranking System
No. 3 Operator	$1.45	$1.40½	$1.46½
No. 1 Operator	1.40	1.40½	1.46½
No. 4 Operator	1.34½	1.35½	1.30½
No. 2 Windsman	1.31½	1.35½	1.30½
No. 2 Operator	1.40	1.35½	1.30½
Shooterman	1.24	1.35½	1.30½
No. 1 Windsman	1.31½	1.32	1.22½
No. 3 Windsman	1.19	1.25	1.22½
Truck Driver	1.10½	1.14½	1.13½
No. 3 Helper	1.10	1.14½	1.15½
No. 1 Helper	1.10	1.14½	1.13½
Fork Lift Operator	1.10½	1.11	1.15½
Fork Lift Operator (II)	1.10½	1.11	1.15½
Elec. Truck Operator	1.10½	1.11	1.11½
No. 4 Helper	1.10	1.11	1.11½
Tankman	1.10½	1.11	1.13½
No. 2 Helper	1.10	1.11	1.09½
No. 2 Wind. Helper	1.10	1.11	1.11½
Shooterman's Helper	1.10	1.11	1.09½
Baleman	1.07½	1.11	1.09½
Chopper & Tier	1.07½	1.07½	1.09½
Dockman, unload	1.07½	1.07½	1.07½
Fork Lift Truck Helper	1.07½	1.07½	1.07½
Elevator Operator	1.07½	1.07½	1.07½
Dockman, load	1.07½	1.07½	1.07½
Shipping Gang Laborer	1.07½	1.07½	1.07½
Carman	1.10	1.07½	1.07½
Janitor	1.07½	1.07½	1.07½

Jobs are listed in order according to the results indicated by the POINT System.

component was necessary to rank the jobs in a consistent manner. Figure 4 compares the definitions used in ranking to those used in the point rating of the jobs.

Figure 4 - Comparison of Standards Used for Ranking With Those Used for Point Rating

RANKING	POINT RATING
Skill- The order of difficulty experienced in replacing the worker on each job	Skill 1. Training Time 2. Education 3. Complexity of the Job
Effort- An estimate of the combined strength and endurance required	Effort 1. Endurance 2. Strength
Responsibility- A total of the estimated value of responsibility for equipment and for material or product	Responsibility 1. For Equipment 2. For Materials or Product 3. For Safety of Others 4. For Work of Others
Job Conditions - Conditions such as noise, light, ventilation, and temperature in the working area	Job Conditions 1. Working Conditions 2. Hazards

The job components as defined for ranking are somewhat simplified in comparison to those used for point rating. This is necessary because of the nature of the judgment required in ranking jobs. For instance, a rater simply could not rank jobs on skill in a consistent manner if he had to consider training time, education and complexity of the job as a definition of skill. Any attempt to do so would leave the ranking open to the same type of criticism as that for ranking by com-

sideration of whole jobs, which is what we are trying to avoid.

An examination of Table 7 will show the differences in wages as determined by the two methods. The differences in wage rates for individual jobs as determined by each of the two methods is due to a certain extent to the inability to measure the span of differences between jobs when using the ranking system. The point system clearly indicates the differences in job values, whereas in ranking, there is no alternative but to rank one job ahead of the other, not knowing how much difference there is between the values of any two jobs, and assigning wage rates according to the ranks. This is one of the primary weaknesses of the ranking system.

So, it is due to the difference in the concept of the job components, together with the inability of the ranking system to measure the span between job values, that causes the differences in rates as determined by each system. In either case the results of the classification of jobs as applied in actual practice would be open to adjustment, and the final classification would have to be established in much the same manner as a new law is tested and interpreted in a court.

The Point System vs Ranking

Of the two systems, ranking is by far the simplest to install and administer. In the small plants using a one-man personnel department, it can be installed by the personnel manager with the help of the foremen and labor representatives at very little cost. The program could, in many cases be administered without any additional costs other than those for such

expenses as office supplies and the printing of job evaluation manuals. Therefore, ranking offers a means of establishing a workable wage program in the small plant operating on a limited budget.

Most of the disadvantages of the ranking method can be overcome or minimized, as has been previously discussed in Chapter III. The big disadvantage of not being able to measure the span of differences between job values does not always present too much of a problem. Where the number of jobs is small, as in the case of the Waterproof Department, relative rates can be set by the job evaluation committee. Such a procedure leaves the results open to haggling, but in most cases this is not serious.

In the larger plants the ranking method is at a disadvantage, for several reasons. First, it may be impossible to obtain raters who are familiar with all jobs, and the process of combining ratings can get so involved in a large organization as to render the results useless. The point method is also preferred when the plant has branches in different geographical locations. It is often desirable to set equitable rates in all branches and point rating offers a proven method of doing this. Ranking is easy to control in evaluating up to thirty jobs, but if the number of jobs exceeds thirty by any appreciable margin, the value of point rating becomes apparent. Difficulty in obtaining suitable raters and the difficulty in determining the rates for a large number of jobs by the use of a committee are two of the drawbacks of ranking in the large firm.

Point rating when properly used undoubtedly is the most accurate of the two methods. In evaluating jobs by the use of a point

rating scale, a more accurate determination of the value of the job is made, because the job can be judged on the basis of all its important characteristics. This is better than the type of judgment required for ranking jobs, in which case only a few of the job characteristics can be considered.

By the proper selection of factors, the point system can be made to approach objectivity in rating jobs. It is sometimes possible to select only factors that can be evaluated in a completely accurate manner. Some examples of these factors are noise, heat, light, value of equipment and product and responsibility for work of others, all of which can be accurately measured. When it is possible to use only such factors as these, the resulting evaluation can be assumed to be sound indeed.

The simplification of the point method by the reduction of the number of factors was discussed in Chapter II. The proper selection of the three or four factors for the simplified system can best be done by first evaluating the jobs, using any number of factors as may seem necessary, and then analysing the job ratings on each separate factor, to determine the ones that most nearly reflect the value of the job as indicated by the total point scores. When this is done and the results indicate that only three or four objective factors are necessary, the point method can be simplified considerably.

Before inaugurating a point evaluation program it is well for the management to make a complete study of the costs of installation and administration. It may be necessary to solicit the services of a

consultant to initiate and install a plan. This helps to speed the installation of the plan and adds authority to the job, while at the same time profiting from the experience of the consultant in this field. Even without the services of the consultant, the clerical detail required in accumulating and analyzing data is expensive. In the large plant, the volume of data may reach such proportions as to require the use of punch-card tabulating equipment.

SUMMARY OF CONCLUSIONS REGARDING POINT RATING VS RANKING

1. The ranking system can give completely satisfactory results in the small plant when the number of jobs is less than thirty.

2. Due to its simplicity and the ease with which it can be installed, the ranking method makes job evaluation available to the small plant operating on a limited budget.

3. The disadvantages inherent in the ranking method can be minimized by the use of the proper techniques, as has been discussed in this paper.

4. The point system is preferred and in many cases may be required in the larger plants, to produce satisfactory results.

5. The point system gives the more accurate evaluation, of the two methods.

6. Point rating more nearly approaches objectivity in evaluating jobs.

APPENDIX I

JOB DESCRIPTIONS

JOB DESCRIPTIONS

Job No. 1 May 1, 1951

Job Title - No. 1 (Asphalt) Machine Operator

Summary - Runs laminating machine with aid of helper, and is responsible for feeding rolls of paper to machine, threading machine, controlling basis weight of film applied to paper, making minor repairs and adjustments, and maintaining standards of quality and quantity of production.

Work Performed - Combines two continuous sheets of kraft paper with asphalt by means of a laminating machine to form a waterproof multi-ply paper product. Directs positioning of rolls of paper in machine using overhead hoists, and the threading and aligning of paper through the machine. Tends to machine by manipulating controls to maintain correct tension on web, proper temperature, and steam pressure on rollers, and proper machine speed. Maintains continuous supply of paper to machine.

Runs rolls up to 72" in width. Controls basis weight and maintains standards of quantity and quality of production. Fills out production report at end of shift. Reads and interprets mill orders, and must meet specifications on products manufactured.

JOB DESCRIPTIONS

Job No. 2 May 1, 1951

Job Title - No. 2 (Wax) Machine Operator

Summary - Runs wax coating machine with one helper, and is responsible for feeding rolls of paper to machine, threading machine, controlling basis weight of applied film, making minor repairs and adjustments, and maintaining standards of quantity and quality of production.

Work Performed - Glazes or impregnates paper with liquid wax. Loads paper rolls on feed racks using hoists, and threads paper through rollers. Opens valve to admit wax into machine pan. Starts machine and adjusts tension of paper and steam pressure on rollers to control weight of applied film. Regulates temperature of drying rollers and observes paper for defects such as wrinkles or breaks. Makes adjustments and minor repairs. Fills out production reports at end of shift. Reads and interprets mill orders and must meet specifications on products manufactured.

JOB DESCRIPTIONS

Job No. 3 May 1, 1951

Job Title - No. 3 (Asphalt) Machine Operator

Summary - Runs machine consisting of two separate coating sections suitable for laminating three sheets of paper at one time. Is aided by one helper and is responsible for feeding rolls of paper to machine, threading, controlling basis weight of film applied to paper, making minor repairs and adjustments, and maintaining standards of quantity and quality of production.

Work Performed - Combines two or three sheets of kraft paper with asphalt by means of a laminating machine to form a waterproof multi-ply paper product. Directs positioning of rolls of paper on machine using overhead hoists, and the threading and aligning of the paper through the rollers of the machine. Tends to machine by manipulating controls to maintain correct tension on web, proper temperature and steam pressure on rollers, and proper machine speed. Maintains continuous supply of paper to machine. Controls basis weight of paper and maintains standards of quality and quantity of production.

Machine has two coating sections which must be synchronized during their operation. The machine is about one and one half times larger than either of the other two asphalt machines on this floor.

JOB DESCRIPTIONS

Job No. 3 (Continued) May 1, 1951

Job Title - No. 3 (Asphalt) Machine Operator

Fills out production reports at end of shift. Reads and interprets mill orders and must meet specifications on products manufactured.

JOB DESCRIPTIONS

Job No. 4 May 1, 1951

Job Title - No. 4 (Asphalt) Machine Operator

Summary and Work Performed - Same as No. 1 Asphalt Machine except machine can only run rolls up to 43" in width. No. 1 and No. 4 machine operators can be interchanged without additional training.

JOB DESCRIPTIONS

Job No. 5 May 1, 1951

Job Title - No. 1 (Asphalt) Machine Helper

Summary - Helps machine operator clean and rethread machine after breaks, loads new rolls of paper on machine, and watches winder end of machine for flaws in quality of paper.

Work Performed - Helps machine operator clean the asphalt machine and rethread after breaks. Also, helps in the loading of new rolls, making machine adjustments such as proper belt adjustment, and keeps the working area clean. Is also responsible for cutting up butt rolls of paper that are left after running a large roll. Places all broke into boxes to be hauled to baler. Helps operator unload finished roll from machine and start new roll. While the machine is running he watches the winder section and notifies the operator of any troubles such as flaws in the paper that would make the rewinding of the roll necessary. Plugs and stencils finished rolls.

JOB DESCRIPTIONS

Job No. 6 May 1, 1951

Job Title - No. 2 (Wax) Machine Helper

Summary - Helps operator run wax machine. Performs such duties as cleaning and threading the machine, and the loading of new paper rolls on machine.

Work Performed - Helps clean and rethread machine when the paper breaks. Cuts up butt rolls of left-over paper to send back to paper machine for reprocessing. Also, is responsible for watching paper web at winder end of machine for flaws in quality. Plugs and stencils finished rolls. When new roll is loaded on machine, helper and operator place the shaft from the old roll into a new roll of paper in preparation for placing it on machine. After machine is started and running smoothly the helper tightens shaft to core in preparation to running next roll. Rolls run approximately 50 minutes, during which time helper cleans machine area and watches winder end for breaks. Working area is considerably cleaner than that of asphalt machine.

JOB DESCRIPTIONS

Job No. 7 May 1, 1951

Job Title - No. 3 (Asphalt) Machine Helper

Summary and Work Performed - Same as No. 1 Asphalt Machine Helper.

JOB DESCRIPTIONS

Job No. 8 May 1, 1951

Job Title - No. 4 (Asphalt) Machine Helper

Summary and Work Performed - Same as No. 1 Asphalt Machine Helper.

JOB DESCRIPTIONS

Job No. 9 May 1, 1951

Job Title - Feederman (Load)

Summary - Feeds rolls to asphalt machines, attaches shaft to cores in proper manner so that rolls are ready for loading on machine, and keeps machine area clean.

Work Performed - Responsible for feeding rolls to three asphalt machines. Places shafts (150 lb. each) into rolls with help of other feederman. He then tightens collars to make shaft fast to paper rolls. Responsible for placing proper size and basis weight roll on each machine. Also picks up broke and loads into boxes. Helps push boxes to baler and helps bring empty boxes from boiler. Does not feed rolls to wax machine.

JOB DESCRIPTIONS

Job No. 10 May 1, 1951

Job Title - Feederman (Unload)

Summary - Pulls skid loads of paper away from all four machines to the proper areas for finishing or shipping.

Work Performed - Helps loaderman place shafts in rolls. Pulls skid loads of paper (1000 to 2700 lbs.) away from all four machines to third floor for winding, or to first or fourth floors for shipping. Average number of trips per shifts is approximately 38, or one every thirteen minutes. May help roll man push boxes to and from baler. Job requires almost constant effort in moving paper to elevator and returning with hand truck in time to pick up next load of paper.

JOB DESCRIPTIONS

Job No. 11 May 1, 1951

Job Title - Asphalt and Wax Tankman

Summary - Unloads tank cars and tank truck loads of asphalt and waxes, pumping them to proper storage tanks. Pumps asphalt and waxes from storage tanks to proper preheating tanks and makes accurate mixtures for various products.

Work Performed - Unloads tank truck-loads of asphalt, usually one a day, and pumps to storage tank. Also, unloads wax cars, about one or two a month, and pumps into tanks for storage. Prepares mixtures of asphalt, oils and waxes in tanks for running special orders. Checks all valves, lines and pumps and the automatic equipment running these pumps daily for proper operation. Spends about one half to one third of time as janitor cleaning certain assigned portions of the mill.

JOB DESCRIPTIONS

Job No. 12 May 1, 1951

Job Title - Fork Lift Operator (day)

Summary - Operates lift truck in loading and stacking paper in proper areas in preparation for running on asphalt machine. Unstacks rolls as needed and positions them for use on each asphalt or wax machine daily.

Work Performed - Operates 2000 lb. capacity fork lift truck. Helps to unload rolls from motor truck, places them on elevator and sends to proper storage areas, keeping proper sizes and basis weights of paper together. At proper time breaks stacks of rolls and lines rolls on floor so as to be easily accessible to feedermen for placement on proper machine. He is aided in this by the help of one other man.

JOB DESCRIPTIONS

Job No. 13 May 1, 1951

Job Title - Helper, Fork Lift Truck

Summary - Helps fork lift truck operator in handling rolls of paper and stacking like sizes and basis weights together.

Work Performed - Helps fork lift truck operator move rolls on and off elevator. Handles rolls by hand, rolling them to proper areas in preparation for stacking and storage. Helps fork lift truck operator keep track of roll sizes and weights. Whenever possible, fork lift operator trains helper in use of lift truck so he will be able to operate truck if necessary and advance to the job of lift truck operator.

JOB DESCRIPTIONS

Job No. 14 May 1, 1951

Job Title - Janitor

Summary - Sweeps, cleans and scrubs certain assigned areas of the mill. Also pushes broke boxes from the first and third floors to the baler.

Work Performed - Sweeps and cleans certain assigned areas of mill, such as the third and first floors, the stairway, and the bottom of the elevator shaft. Spends certain amount of time cleaning asphalt oils and waxes off of floor. Pushes baling boxes from first and third floors to baler twice a day.

JOB DESCRIPTIONS

Job No. 15 May 1, 1951

Job Title - Fork Lift Operator (night)

Summary - Works on night shift only, operating fork lift truck, helping on baler, wrapping and capping rolls, and substituting as winderman's helper or machine helper if necessary.

Work Performed - Works on night shift only. Spends about half of time operating fork lift truck carrying paper to machines and storing and unloading trailer trucks if necessary. Spends rest of shift helping on the balerman, wrapping and capping rolls, or substituting as winderman's helper or asphalt machine operator's helper, as may be necessary.

JOB DESCRIPTIONS

Job No. 16 May 1, 1951

Job Title - Balerman

Summary - Sorts paper broke into unusable and usable broke. Broke is then baled, weighed and stacked in preparation for return to paper machine or shipment to dump.

Work Performed - Sorts paper broke into good broke for return to paper mill for reprocessing, and into unusable broke which is sold as scrap or sent to dump. It is necessary to make a careful separation because of the damage asphalt and wax will do to the paper-making process. Bundles of broke are baled into bales averaging approximately 125 lbs. apiece. The bales are weighed and stacked two or three high in preparation for shipment. A written report is prepared on the number of bales usable and unusable broke baled during each shift.

JOB DESCRIPTIONS

Job No. 17 May 1, 1951

Job Title - No. 1 Winder Operator

Summary - Operates 84" Moore and White Winder, powered by conventional A. C. clutch operated drive, with aid of one helper. Performs normal rewinding duties.

Work Performed - Slits rolls of paper and rewinds to obtain compact rolls of desired size, using slitting and rewinding machine. Measures distance between rotary type slitters, using steel rule and sets slitters to obtain desired width. Positions rolls of specified type and weight of material in supports of machine. Threads material through tension guide rolls, and slitters of machine, and engages ends on rewinding cores. Starts machine and constantly controls tension and speed of machine by means of a hand-wheel to insure even winding and slitting.

Examines material during rewind process for defects such as wrinkles and slime holes. Tears out defective material and splices strips. Removes roll when specified diameter is obtained. May set slitters to trim rough edges. Fills out production reports describing sizes, weights and amounts of production during shift. Is aided in the operation of the rewinder by one helper.

This winder does not run full time and operator may spend all or part of day finishing rolls, pulling stock to shipping floors, or helping to operate other machinery such as the asphalt and wax machines.

JOB DESCRIPTIONS

Job No. 18 May 1, 1951

Job Title - No. 2 Winder Operator

Summary - Slits and rewinds rolls of asphalt, wax, and plain paper as a salvage operation or to obtain rolls of desired width and length, operating a 72" Langston rewinder powered by a D. C. drive.

Work Performed - Slits rolls of paper and rewinds to obtain compact rolls of desired size, using slitting and rewinding machine. Measures distance between rotary type slitters, using steel rule, and sets slitters to obtain desired width. Positions rolls of specified type and weight of material in supports of machine. Threads material through tension guide rolls, and slitters of machine, and engages ends on rewinding cores. Starts machine and constantly controls tension and speed of machine by means of a hand-wheel to insure even winding and slitting.

Examines material during rewind process for defects such as wrinkles and slime holes. Tears out defective material and splices strips. Removes roll when specified diameter is obtained. May set slitters to trim rough edges. Fills out production reports describing sizes, weights and amounts of production during shift. Is aided in the operation of the rewinder by one helper.

JOB DESCRIPTIONS

Job No. 19 May 1, 1951

Job Title - No. 3 Winder Operator

Summary - Operates 60" Langston winder powered by A. C. clutch operated drive to run rolls up to 24" in diameter. Does not have helper.

Work Performed - Same as No. 1 rewinder operator except machine is smaller and does not have helper. Operator of this winder is also used to pull skids of paper by hand truck to proper floor for shipping, or as helper on asphalt or wax machine. This job is also used as a training stage in preparation for training a man to operate the asphalt or wax machines.

JOB DESCRIPTIONS

Job No. 20 May 1, 1951

Job Title - No. 2 Winderman's Helper

Summary - Helps winderman perform his duties such as loading rolls, unloading, setting slitter knives, and preparing paper to be run on the winder.

Work Performed - Helps winderman perform all duties such as loading rolls, unloading, setting slitter knives, placing shafts (150 lbs.) in rolls and watching for defective material while paper is being run. Helps tape loose ends, plugs, stencils finished rolls and loads on skids. He may be sent with hand truck to various parts of mill to get paper to be rewound.

JOB DESCRIPTIONS

Job No. 21 May 1, 1951

Job Title - Sheeter Operator

Summary - Cuts rolls of paper into sheets, sometimes trimming edges with regular winder knives and running as many as four rolls at one time. Sheeter is not operated as a duplex sheeter.

Work Performed - Loads asphalt, wax or plain paper rolls on sheeter, sometimes running as many as four rolls at one time. Is required to slit rolls, making different size sheets, and also may be required to slit off rough edges. Changes gears and adjusts lay-boy so as to run different size sheets. Normally, uses one helper, but when trimming off rough edges, uses second helper to clean up trimmings, and to carry to baler. Must make delicate adjustment of cutting blades so as to get a square, sharp cutting action of the desired length. Sheets must be controlled to within 1/8" accuracy. Fills out production report showing quantity of paper run during shift. Works day shift only.

JOB DESCRIPTIONS

Job No. 22 May 1, 1951

Job Title - Sheeterman's Helper

Summary - Helps sheeter operator perform duties such as loading machine and making adjustments for proper length sheets, and also slitter adjustments.

Work Performed - Helps operator in all duties required in running sheeter, picks up shafts with help of operator, places them in rolls and tightens collars to fasten shafts firmly to rolls. Helps sheeter operator load rolls on roll stands with aid of electric hoists. During normal operation of sheeter, stands at lay-boy end of machine and inspects sheets as they are being cut, pulling out defective sheets and throwing in broke box. Adjusts lay-boy to proper height as it fills with sheets.

JOB DESCRIPTIONS

Job No. 23 May 1, 1951

Job Title - Roll Wrapper

Summary - Wraps and caps rolls of paper, and also wraps and ties bundles of paper sheets.

Work Performed - Wraps and caps rolls of paper weighing up to approximately 150 lbs. Heavy paper wrapper is rolled around roll and the ends are pasted and capped. Also wraps bundles of sheets weighing up to approximately 150 pounds, tying these bundles with string. Cuts own wrappers to size and prepares his own work. Loads finished rolls and bundles on skids in orderly manner.

JOB DESCRIPTIONS

Job No. 24 May 1, 1951

Job Title - Elevator Operator

Summary - Operates elevator during day shift only, carrying rolls to storage area and also carrying finished rolls to proper floor for shipping or rewinding.

Work Performed - Helps load and unload paper on elevator. Must plan work so that elevator carries load when going up as well as down, so as to make full use of elevator capacity. Is under pressure to keep paper moving to proper floors.

JOB DESCRIPTIONS

Job No. 25 May 1, 1951

Job Title - Coreman

Summary - Keeps winder, asphalt, and wax machines supplied with cores sawed to proper length.

Work Performed - Saws cores proper length as required by winder, asphalt, and wax machines. Delivers cores to machine as needed. Uses power saw to cut cores to proper length, salvaging used cores to get maximum use and to eliminate waste. Keeps area around saw clean, and bales waste cores to be sold as scrap. May help tank man unload carloads of wax.

JOB DESCRIPTIONS

Job No. 26 May 1, 1951

Job Title - Shipping Gang Laborer

Summary - Works in gang of three to six men, loading and unloading cars and bracing cars for shipment.

Work Performed - Unloads and loads rolls of paper, with help of three to six other members of the shipping gang. Is aided by electric or gas truck but must turn rolls and place them in proper position, being careful not to damage and cause excessive waste. May have to handle rolls weighing up to 2700 pounds, with help of other laborers.

JOB DESCRIPTIONS

Job No. 27 May 1, 1951

Job Title - Truck Driver

Summary - Drives company-owned truck in making local deliveries of paper.

Work Performed - Must have truck driver's license. Delivers paper to various local jobbing houses, as may be required. When not driving truck, helps shipping gang loading and unloading paper. Spends good part of time working with other departments in shipping paper. Must have knowledge of various sections of city for delivering paper.

JOB DESCRIPTIONS

Job No. 28 May 1, 1951

Job Title - Electric Truck Operator

Summary - Operates electric platform truck in transporting paper to various locations.

Work Performed - Operates electric platform truck in carrying finished paper to be loaded in cars, and paper that is being received in cars to be unloaded and stored in mill. Must be able to operate truck in close quarters and in extremely safe manner, as truck is often used in conjunction with hand labor to place rolls in proper position in cars. Is responsible for general maintenance of truck and battery, and placing of battery in charger at night in preparation for charging.

APPENDIX II

JOB SPECIFICATIONS

JOB SPECIFICATIONS

Job No. 1 May 20, 1951

Job Title - No. 1 (Asphalt)
Machine Operator

1. Training Time

Requires 30 to 60 days training on job to be able to operate in a proficient manner.

2. Education

Must be able to read, write, do simple arithmetic problems and fill out reports.

3. Complexity of Job

Must be able to synchronize speed of coating, drier and winder sections of machine by adjustment of cone pulleys, slip belts and variable speed drives. Previous experience with farm machinery helpful.

Must develop skill in applying correct amount of asphalt by use of correct temperatures, proper web tension and proper machine speed.

4. Endurance

Works at accelerated rate when machine is down, but is seated for about 15 to 20 minutes while roll is being run.

5. Strength

Must be able to lift about 100 lbs. Handles 900 lb. rolls with aid of helper and chain hoist.

6. Responsibility for Equipment

Negligence may cause up to $2000 damage to motor, controls, and combining rolls.

7. Responsibility for Materials or Product

Negligence may cause serious damage to $2,679 worth of paper product in one 8 hour shift.

8. Safety of Others

Carelessness may result in loss of limb or other permanent disability to helper or to feedermen in loading, threading, cleaning and running machine.

9. Work of Others

Is responsible for work of one helper.

10. Working Conditions

Working area is noisy, dirty, oily and contains slight amount of smoke. Must work at elevated temperatures during summer.

11. Hazards

Carelessness may result in loss of limbs or other permanent disability in loading, threading, adjusting, and running machine.

JOB SPECIFICATIONS

Job No. 2 May 20, 1951

Job Title - No. 2 (Wax) Machine Operator

1. Training Time

Requires 30 days training on job to be able to operate in a proficient manner.

2. Education

Must be able to read, write, do simple arithmetic problems and fill out reports.

3. Complexity of Job

Must be able to synchronize speed of coating, drier, and winder sections of machine by adjustment of cone pulleys, slip belts and variable speed drives. Previous experience with farm machinery helpful.

Must develop skill in applying correct amount of wax by use of correct temperatures, proper web tension and proper machine speed.

4. Endurance

Works at accelerated rate to load machine. Cleaning up after breaks is considerably less trouble than on asphalt machine.

5. Strength

Must be able to lift about 100 lbs. Handles 150 lb. shafts with aid of helper and 1700 lb. rolls with aid of helper and electric hoist.

6. Responsibility for Equipment

Negligence may cause $1000 damage to motor and controls in one 8 hour shift.

7. Responsibility for Materials or Product

Negligence may cause serious damage to $1447 worth of paper product in one shift.

8. Safety of Others

Carelessness may result in loss of limb or other permanent disability to helper or to feedermen in loading, threading, cleaning and running machine.

9. Work of Others

Is responsible for work of one helper.

10. Working Conditions

Working area is noisy, dirty, oily and contains slight amount of smoke. Must work at elevated temperatures during the summer.

11. Hazards

Carelessness may result in loss of limbs or other permanent disability in loading, threading, adjusting, and running machine.

JOB SPECIFICATIONS

Job No. 3

May 20, 1951

Job Title - No. 3 (Asphalt) Machine Operator

1. Training Time

Requires over 3 months training on job to become efficient enough to operate machine.

2. Education

Must be able to read, write, do simple arithmetic problems and fill out reports.

3. Complexity of Job

Must be able to synchronize speed of coating, drier, and winder sections of machine by adjustment of cone pulleys, slip belts and variable speed drives. Previous experience with farm machinery helpful.

Must develop skill in applying correct amount of asphalt by use of correct temperatures, proper web tension and proper machine speed. Runs two coating sections at times, laminating three sheets of paper.

4. Endurance

Works at accelerated rate when machine is down, but is seated for about 15 to 20 minutes while roll is being run.

5. Strength

Must be able to lift 100 lbs. Handles 2,500 lb. rolls with aid of chain hoist and helper.

6. Responsibility for Equipment

Negligence may cause $4,500 damage to machine drive, controls, and coating and combining rolls.

7. Responsibility for Materials or Product

Negligence may cause damage to $3929 worth of paper product in one shift.

8. Safety of Others

Carelessness may result in fatal accident to helper or feedermen while loading, threading, cleaning and adjusting machine.

9. Work of Others

Is responsible for work of one helper.

10. Working Conditions

Working area is noisy, dirty, oily and contains slight amount of smoke. Must work at elevated temperatures during the summer.

11. Hazards

Job is more dangerous than other asphalt machines, due to flying asphalt and the existence of exposed nip in the combining rolls.

JOB SPECIFICATIONS

Job No. 4 May 20, 1951

Job Title - No. 4 (Asphalt) Machine Operator

1. Training Time

Requires 30 to 60 days training on job to be able to operate in a proficient manner.

2. Education

Must be able to read, write, do simple arithmetic problems and fill out reports.

3. Complexity of Job

Must be able to synchronize speed of coating, drier, and winder sections of machine by adjustment of cone pulleys, slip belts and variable speed drives. Previous experience with farm machinery helpful.

Must develop skill in applying correct amount of asphalt by use of correct temperatures, proper web tension and proper machine speed.

4. Endurance

Works at accelerated rate when machine is down, but is seated for about 15 to 20 minutes while roll is being run.

5. Strength

Must be able to lift about 100 lbs. Handles 900 lb. rolls with aid of helper and chain hoist.

6. Responsibility for Equipment

Negligence may cause $2000 damage to machine drive, controls, and coating and combining rolls.

7. Responsibility for Materials or Product

Negligence may cause damage to $2374 worth of paper product in one shift.

8. Safety of Others

Carelessness may result in loss of limb or other permanent disability to helper or to feedermen in loading, threading, cleaning and running machine.

9. Work of Others

Is responsible for work of one helper.

10. Working Conditions

Working area is noisy, dirty, oily, and contains slight amount of smoke. Must work at elevated temperatures during the summer.

11. Hazards

Carelessness may result in loss of limbs or other permanent disability in loading, threading, adjusting, and running machine.

JOB SPECIFICATIONS

Job No. 5 May 20, 1951

Job Title - No. 1 (Asphalt)
Machine Helper

1. Training Time

Requires less than 30 days training time to become proficient on job. Can usually perform job without help after one day of experience.

2. Education

Must be able to read and write.

3. Complexity of Job

Job requires definite mental alertness. Must be able to watch machine in a responsible manner during short absences of the operator.

4. Endurance

Works at accelerated rate when machine is down, but is seated for about 15 to 20 minutes while roll is being run.

5. Strength

Must be able to lift about 100 lbs. Handles 900 lb. rolls with aid of operator.

6. Responsibility for equipment

Negligence may cause up to $1000 damage to motor, control and combining rolls.

7. Responsibility for Materials or Product

Negligence may cause damage to $1340 worth of paper product in one shift.

8. Safety of Others

Carelessness may result in loss of limb or other permanent disability to operator or feedermen in loading, cleaning, adjusting and running machine.

9. Work of Others

Not responsible for work of others.

10. Working Conditions

Working area is noisy, dirty, oily, and contains slight amount of smoke. Must work at elevated temperatures during the summer.

11. Hazards

Carelessness may result in loss of limbs or other permanent disability in loading, threading, adjusting, and running machine.

JOB SPECIFICATIONS

Job No. 6 May 20, 1951

Title - No. 2 (Wax) Machine Helper

1. Training Time

Requires less than 30 days training time to become proficient on job. Can usually perform job after one day of instruction by experienced man.

2. Education

Must be able to read and write.

3. Complexity of Job.

Job requires definite mental alertness. Must be able to watch machine in a responsible manner during short absences of the operator.

4. Endurance

Works at accelerated rate while machine is down, but can sit for periods of 30 to 40 minutes while machine is running.

5. Strength

Must be able to lift about 100 lbs. Handles 150 lb. shafts with aid of operator and 1700 lb. rolls with aid of operator and electric hoist.

6. Responsibility for Equipment

Negligence may cause up to $500 damage to motor and controls.

7. Responsibility for Materials or Product

Negligence may cause serious damage to $72h worth of paper product in one shift.

8. Safety of Others

Carelessness may result in loss of limb or other permanent disability to operator in loading, cleaning, adjusting and running machine.

9. Work of Others

Not responsible for work of others.

10. Working Conditions

Working area is noisy, dirty, oily, and contains slight amount of smoke. Must work at elevated temperatures during the summer.

11. Hazards

Carelessness may result in loss of limbs or other permanent disability in loading, threading, adjusting, and running machine.

JOB SPECIFICATIONS

Job No. 7 May 20, 1951

Title - No. 3 (Asphalt) Machine Helper

1. Training Time

Requires less than thirty days training time to become proficient on job. Can usually perform job after one day of instruction by experienced man.

2. Education

Must be able to read and write.

3. Complexity of Job

Job requires definite mental alertness. Must be able to watch machine in a responsible manner during short absences of the operator.

4. Endurance

Works at accelerated rate while machine is down, but can sit while machine is running, for periods of 5 to 15 minutes.

5. Strength

Must be able to lift about 100 lbs. Handles 2500 lb. rolls with aid of chain hoists and operator.

6. Responsibility for Equipment

Negligence may cause up to $2,250 damage to drive, coating rolls and combining rolls.

7. Responsibility for Materials or Product

Negligence may cause damage to $1,965 worth of paper production one shift.

8. Safety of Others

Carelessness may result in loss of limbs or other permanent disability to operator or feedermen.

9. Work of Others

Not responsible for work of Others.

10. Working Conditions

Working area is noisy, dirty, oily, and contains slight amount of smoke. Must work at elevated temperature during the summer.

11. Hazards

Carelessness may result in loss of limbs or other permanent disability in loading, threading, adjusting and running machine

JOB SPECIFICATIONS

Job No. 8 May 20, 1951

Job Title No. 4 (Asphalt) Machine Helper

1. Training Time

Requires less than 30 days training time to become proficient on job. Can usually perform job after one day of instruction by experienced man.

2. Education

Must be able to read and write.

3. Complexity of Job

Job requires definite mental alertness. Must be able to watch machine in a responsible manner during short absences of the operator.

4. Endurance

Works at accelerated rate while machine is down, but can sit while machine is running for periods of 15 to 20 minutes.

5. Strength

Must be able to lift about 100 lbs. Handles 900 lb. rolls with aid of operator.

6. Responsibility for Equipment

Neglect may cause up to $1000 damage to motor, controls or combining rolls.

7. Responsibility for Material or Product

Negligence may cause serious damage to $1187 worth of paper product in one 8 hour shift.

8. Safety of Others

Carelessness may result in loss of limb or other permanent disability to operator or feedermen in loading, threading, cleaning and running machine.

9. Work of Others

Not responsible for work of others.

10. Working Conditions

Working area is noisy, dirty, oily, and contains slight amount of smoke. Must work at elevated temperature during summer.

11. Hazards

Carelessness may result in loss of limb or other permanent disability in loading, threading, adjusting and running machine.

JOB SPECIFICATIONS

Job No. 9 May 20, 1951

Job Title - Feederman, load

1. Training Time

Requires less than 30 days training on job to become fully proficient. Can usually perform job without help after several hours instruction.

2. Education

Must be able to read and write.

3. Complexity of Job

Uses simple tools such as wrench and hammer. Must feed correct size and basis weight paper to each asphalt machine.

4. Endurance

Works at steady pace, but has opportunity for several rest periods during day.

5. Strength

Must be able to lift 100 lbs. plus. Moves 2000 lb. rolls of paper over cement floors, using a dolly.

6. Responsibility for Equipment

Negligence may cause up to $200 damage to collars, and shafts.

7. Responsibility for Materials or Product

Negligence may cause damage to $100 worth of paper in one shift.

8. Safety of Others

Carelessness may result in accident, involving several weeks loss time to machine operators, helpers, or the unload feederman.

9. Work of Others

Not responsible for work of others.

10. Working Conditions

Normally works under average conditions. Is exposed to heat and dirty conditions for short periods when working around machines.

11. Hazards

May lose several weeks time through careless accident while handling paper.

JOB SPECIFICATIONS

Job. No. 10 May 20, 1951

Job Title - Feederman, Unload

1. Training Time

Requires less than 30 days training time on job to become fully proficient. Can usually perform job without help after several hours instruction.

2. Education

Must be able to read and write.

3. Complexity of Job

Uses hand lift truck to carry paper.

4. Endurance

Works at constant pace. Is under considerable pressure to carry paper away from all machines as it is finished.

5. Strength

Must be able to lift 100 lbs plus. Moves up to 2,700 lbs. paper on hand truck to various floors for shipping and winding.

6. Responsibility for Equipment

Negligence may cause up to $150 damage to hand lift truck.

7. Responsibility for Materials or Product.

Negligence may cause damage to $100 worth paper.

8. Safety of Others

Carelessness may result in accident involving several weeks lost time to machine operators, helpers, or the load feederman.

9. Work of Others

Not responsible for work of others.

10. Working Conditions

Normally works under average conditions, but is exposed to heat and dirt around machines for short periods of time.

11. Hazards

May lose several weeks time through careless accident while handling paper.

JOB SPECIFICATIONS

Job No. 11 May 20, 1951

Job Title - Tankman

1. Training Time

Requires less than 30 days training time to become proficient on job. Requires several days of instruction to become familiarized with tanks and lines before performing the job alone.

2. Education

Must be able to read and write.

3. Complexity of Job

Must learn to operate steam pumps, dump tank cars of asphalt and waxes, and learn pipe lines for the various materials.

4. Endurance

Works at accelerated rate for short periods during day, but has long slack periods between.

5. Strength

Must be able to lift 100 lbs. Handles 500 lb. drums alone.

6. Responsibility for Equipment

Negligence may cause up to $1000 damage to pumps and controls.

7. Responsibility for Materials or Product.

Negligence may cause loss as much as $1200 worth of asphalt or waxes in one shift.

8. Safety of Others

Carelessness may result in accident causing several weeks lost time to other workers.

9. Work of Others

Not responsible for work of others.

10. Working Conditions

Works in oily, dirty, areas and is often exposed to overheated conditions and outside weather.

11. Hazards

May lose several weeks lost time from accident in handling materials.

JOB SPECIFICATIONS

Job No. 12 May 20, 1951

Job Title - Fork Lift Operator

1. Training Time

Requires less than 30 days training time to become proficient on job. Several weeks of instruction and practice required to learn job. Usually filled by advancing the fork lift helper.

2. Education

Must be able to read and write.

3. Complexity of Job

Must learn proper use of lift truck and the requirements for its proper maintenance.

4. Endurance

Ordinary endurance required. Must work at constant pace to keep paper inventory in order.

5. Strength

Must be able to lift 100 lbs. Handles 2000 lb. rolls with aid of helper and fork lift truck.

6. Responsibility for Equipment

Negligence in the care and operation of truck may damage it to the extent of $2400.

7. Responsibility for Material or Product

Negligence may cause up to $180 damage to paper in handling and stacking.

8. Safety of Others

Carelessness may cause accident to fork lift helper involving loss of limb or other permanent disability.

9. Work of Others

Not responsible for work of others.

10. Working Conditions

Works in all parts of mill with exception of machine working areas. Conditions are average.

11. Hazards

Carelessness in handling rolls may result in accident involving permanent disability.

JOB SPECIFICATIONS

Job No. 13 May 20, 1951

Title - Helper, Fork Lift Truck

1. Training Time

Requires less than 30 days training time to become fully proficient. Can perform job after several hours instruction. Trains in spare time for promotion to fork lift operator.

2. Education

Must be able to read and write.

3. Complexity of Job

Stacks rolls in proper place according to size and weight.

4. Endurance

Pace is steady, but effort required is not great.

5. Strength

Must be able to lift 100 lbs. Handles 2000 lb. rolls with aid of fork lift operator and truck.

6. Responsibility for Equipment

Negligence in handling rolls may result in up to $150 damage to steam pipes, broke boxes, and other equipment.

7. Responsibility for Materials or Product

Negligence in handling rolls may result in damage to $100 worth of paper in one shift.

8. Safety of Others

Carelessness may cause accident to fork lift operator, resulting in loss of limb or other permanent disability.

9. Work of Others

Not responsible for work of others.

10. Working Conditions

Works in all parts of mill except in machine working area. Conditions are average.

11. Hazards

Carelessness in handling rolls may result in accident involving permanent disability.

JOB SPECIFICATIONS

Job No. 14 May 20, 1951

Job Title - Janitor

1. Training Time

Requires less than one week on job to become proficient.

2. Education

Must be able to read and write.

3. Complexity of Job

Must learn assigned areas for cleaning.

4. Endurance

Pace is steady, but little effort is required.

5. Strength.

Must be able to lift about 30 lbs.

6. Responsibility for Equipment

Is responsible for about $25 worth of mops, brooms and scrapers.

7. Responsibility for Materials or Product

Carelessness in cleaning may damage up to $100 worth of paper or other materials.

8. Safety of Others

Carelessness may result in minor accident involving no loss of time, to other employees.

9. Work of Others

Not responsible for work of others.

10. Working Conditions

Is exposed to dirt and grease in cleaning mill. Working conditions are poor.

11. Hazards

Carelessness may result in minor accident causing little or no loss time.

JOB SPECIFICATIONS

Job No. 15 May 20, 1951

Job Title - Fork Lift Operator (night)

Specifications same as Job No. 12 - Fork Lift Operator (day)

JOB SPECIFICATIONS

Job No. 16 May 20, 1951

Job Title - Balerman

1. Training Time

Job requires several days of instruction on how to operate baler. Requires less than 30 days to reach proficiency.

2. Education

Must be able to read, write, and tally weigh sheets.

3. Complexity of Job

Job requires the operation of an automatic baling press.

4. Endurance

Pace is steady and constant effort is necessary to keep boxes clean of broke.

5. Strength

Must be able to handle bales of broke weighing up to 150 lbs.

6. Responsibility for Equipment

Negligence in operating baler, such as failure to keep gears clean, results in broken gear teeth and may cause $200 damage to baler.

7. Responsibility for Material or Product

Improperly tied broke bales may result in loss of up to $50 worth of broke in one shift.

8. For Safety of Others

Carelessness in handling boxes and bales of broke may result in minor accidents involving no loss time, to other workers.

9. For Work of Others

Not responsible for work of others.

10. Working Conditions

Area is dirty, due to collection of paper, asphalt and waxes. Working conditions are average of those in mill.

11. Hazards

Carelessness may result in serious accident involving permanent disability.

JOB SPECIFICATIONS

Job No. 17 May 20, 1951

Title - No. 1 Winder Operator

1. Training Time

Requires 30 to 60 days training time on the job to operate winder efficiently.

2. Education

Must be able to read, write, do simple arithmetic problems and fill out reports.

3. Complexity of the Job

Must learn to adjust friction controls governing tension on paper web, and change and adjust slitter knives.

4. Endurance

Pace is steady and winderman is required to reach quantitative standards of production.

5. Strength

Must be able to lift 100 lb. rolls. Handles rolls weighing up to 2000 lbs. with aid of helper and electric hoist.

6. Responsibility for Equipment

Negligence may cause up to $500 damage to motor, variable speed controls, and slitters.

7. Responsibility for Material or Product.

Negligence may damage $1,400 worth of paper product in one shift.

8. Safety of Others

Carelessness may result in serious accident such as loss of limbs to helper in loading and adjusting machine.

9. Work of Others

Not responsible for work of others. Helper is usually a "borrowed" operator from another machine and the winderman is not responsible for his work as is the case on the other machines using helpers.

10. Working Conditions

Working conditions are average. Working area is clean, but noisy.

11. Hazards

Carelessness may result in accident involving loss of limbs or other serious injury in loading, adjusting or running machine.

JOB SPECIFICATIONS

Job No. 18 May 20, 1951

Job Title - No. 2 Winder Operator

1. Training Time

Requires 30 to 60 days training time on the job to be able to operate winder efficiently.

2. Education

Must be able to read, write, and fill in reports.

3. Complexity of Job

Must learn to adjust friction controls governing tension on paper web, change and adjust slitter knives.

4. Endurance

Pace is steady and winderman is required to maintain quantitative standards of production.

5. Strength

Must be able to lift 100 lb. rolls. Handles rolls weighing up to 2000 lbs. with aid of helper and electric hoist.

6. Responsibility for Equipment

Negligence may cause up to $1500 damage to drive, vacumatic shift and slitters.

7. Responsibility for Material or Product

Negligence may cause damage to $2200 worth of paper product in one shift.

8. Safety of Others

Carelessness may result in serious accident such as loss of limbs to helper in loading and adjusting machine.

9. Work of Others

Is responsible for work of one helper.

10. Working Conditions

Working conditions are average. Working area is clean but noisy.

JOB SPECIFICATIONS

Job No. 19 May 20, 1951

Job Title - No. 3 Winder Operator

1. Training Time

Can learn to operate winder in 30 days or less.

2. Education

Must be able to read, write and fill out reports.

3. Complexity of Job

Must learn to adjust friction controls governing tension on paper web, and adjust slitter knives.

4. Endurance

Pace is steady. Winderman is required to maintain quantitative standards of production.

5. Strength

Must be able to lift 100 lbs rolls. Handles rolls weighing up to 1700 lbs. using electric hoist.

6. Responsibility for Equipment

Negligence may cause up to $300 damage to motor, clutch and slitters.

7. Responsibility for Material or Product

Negligence may cause damage to $2118 worth of paper product.

8. Safety of Others

Carelessness may result in minor accident to other workers.

9. Worth of Others

Not responsible for work of others.

10. Working Conditions

Working conditions are average. Working area is clean but noisy.

11. Hazards

Carelessness may result in permanent injury during feeding, loading, running and adjusting machine.

JOB SPECIFICATIONS

Job No. 20 May 20, 1951

Job Title - No. 2 Winderman's Helper

1. Training Time

Requires less than 30 days training to perform job in proficient manner. Can be instructed by winder operator.

2. Education

Must be able to read, write, and fill out reports.

3. Complexity of Job

Job requires definite mental alertness. Must coordinate motions with those of operator in loading and unloading winder, to maintain efficiency.

5. Strength

Must be able to lift 100 lb. rolls. Handles 2000 lb. rolls with aid of operator and chain hoist.

6. Responsibility for Equipment

Negligence may cause up to $750 damage to drive, shift and slitters on winder.

7. Responsibility for Material or Product

Negligence may cause damage to $1100 worth of paper.

8. Safety of Others

Carelessness may result in serious accident such as loss of limbs, to operator during loading, adjusting and running of winder.

9. Work of Others

Not responsible for work of others.

10. Working Conditions

Working conditions are average. Area is clean but noisy.

11. Hazards

Carelessness may result in serious injury such as loss of limbs, while loading, adjusting or running machine.

JOB SPECIFICATIONS

Job No. 21 May 20, 1951

Job Title - Sheeterman

1. Training Time

Requires 30 to 60 days training on job to run sheeter proficiently.

2. Education

Must be able to read, write, and fill out reports.

3. Complexity of Job

Must be able to set up sheeter to run various size sheets. Requires skill and ingenuity to cut asphalt paper into satisfactory sheets.

4. Endurance

Pace is steady. Must maintain quantitative standards of production.

5. Strength

Must be able to lift 100 lb. rolls. Handles rolls weighing up to 1700 lbs. with aid of helper and electric hoist.

6. Responsibility for Equipment

Negligence may result in $1200 damage to motor, knives, and gears.

7. Responsibility for Material or Product

Negligence in running sheeter may damage up to $1140 to paper product.

8. Safety of Others

Carelessness may result in accident involving loss of limb to helper while setting up, adjusting or running machine.

9. For Work of Others

Is responsible for the work of one helper. For certain orders a second helper is used but he is limited to carrying accumulated broke to balers.

10. Working Conditions

Area is relatively clean but noisy. Conditions are about average of those existing in mill.

11. Hazards

Carelessness may result in serious accident such as loss of limbs, in adjusting and operating cut-off blades and slitter knives.

JOB SPECIFICATIONS

Job No. 22 May 20, 1951

Job Title - Sheeterman's Helper

1. Training Time

Requires less than 30 days training time to become proficient on job. New man can start training under instruction of sheeterman.

2. Education

Must be able to read and write.

3. Complexity of Job

Job requires definite mental alertness. Must watch layboy end of machine in responsible manner and notify sheeterman of any trouble.

4. Endurance

Works at rapid pace to make necessary adjustments while machine is running.

5. Strength

Must be able to lift 100 lb. rolls of paper. Handles rolls weighing up to 1700 lbs. with aid of sheeterman and electric hoist.

6. Responsibility for Equipment

Negligence may result in up to $600 damage to motor, knives and gears.

7. Responsibility for Material or Product

Negligence may result in damage of up to $570 worth of paper product.

8. Safety of Others

Carelessness may result in accident involving loss of limb to sheeterman during the setting up, adjustment and operation of the sheeter.

9. Work of Others

Not responsible for work of others.

10. Working Conditions

Area is relatively clean but noisy. Conditions are average of those in the mill.

11. Hazards

Carelessness may result in serious accident such as loss of limbs during the adjustment and operation of the machine.

JOB SPECIFICATIONS

Job No. 23 May 20, 1951

Job Title - Wrapper and Tier

1. Training Time

Requires 2 to 3 weeks of training to become proficient on job.

2. Education

Must be able to read and write.

3. Complexity of Job

Uses only simple tools or equipment such as gum tape holder.

4. Endurance

Works at steady pace and must meet quantitative standards of production.

5. Strength

Must be able to lift 100 lb. rolls and stack on skid without help.

6. Responsibility for Equipment

Is responsible for about $75 worth of miscellaneous equipment such as gum tape holder and wrapping supplies.

7. Responsibility for Material or Product

Negligence in wrapping rolls may damage to $200 worth of paper product.

8. Safety of Others

Carelessness may cause minor accident to other workers.

9. Work of Others

Not responsible for work of others.

10. Working Conditions

Working conditions are best in the mill. Light, ventilation, and noise conditions are excellent.

11. Hazards

Carelessness in handling rolls may result in minor injury.

JOB SPECIFICATIONS

Job No. 24 May 20, 1951

Job Title - Elevator Operator

1. Training Time

Can perform job in a proficient manner after one week of experience. Can work alone after several hours instruction.

2. Education

Must be able to read and write.

3. Complexity of Job

Must learn to use elevator controls.

4. Endurance

Work is intermittent. Requires little physical effort.

5. Strength

Must be able to lift 30 lbs.

6. Responsibility for Equipment

Negligent operation may cause up to $300 damage to the motor and cage.

7. Responsibility for Material or Product

May damage up to $100 worth of paper in handling on and off elevator.

8. For Safety of Others

Carelessness in handling paper and operating elevator may cause fatal accident to other workers.

9. Work of Others

Not responsible for work of others.

10. Working Conditions

Conditions are average of those in mill.

11. Hazards

Carelessness may result in serious accident in operating elevator.

JOB SPECIFICATIONS

Job No. 25 May 20, 1951

Job Title - Foreman

1. Training Time

Can perform job in a proficient manner after one week of experience. Can work alone after several hours instruction.

2. Education

Must be able to read and write.

3. Complexity of Job

Must learn to use core saw.

4. Endurance

Works at steady pace, but effort is not great.

5. Strength

Must be able to lift 30 to 90 lbs. Pushes broke boxes alone to baler.

6. Responsibility for Equipment

Negligence may cause up to $150 damage to core saw.

7. Responsibility for Material or Product

Negligence may damage up to $50 worth of cores.

8. Safety of Others

Carelessness may result in minor accident to other workers.

9. Work of Others

Not responsible for work of others.

10. Working Conditions

Working area is dirty, smoky and hot.

11. Hazards

Carelessness may result in serious accident in operating core saw.

JOB SPECIFICATIONS

Job No. 26 May 20, 1951

Job Title - Shipping Gang Laborer

1. Training Time

Can perform job in proficient manner after one week of experience. Job can be performed alone after several hours of instruction.

2. Education

Must be able to read and write

3. Complexity of Job

Uses simple tools such as crowbar.

4. Endurance

Works at steady pace. Effort required to place rolls in car is great.

5. Strength

Must be able to lift 100 lbs. plus.

6. Responsibility for Equipment

Is responsible for about $50 worth of equipment such as wrench, saw and hammer.

7. Responsibility for Material or Product

Negligence may result in $100 damage to paper product in one shift.

8. Safety of Others

Carelessness may result in serious accident to other laborers in loading paper.

9. Work of Others

Not responsible for work of others.

10. Working Conditions.

Working conditions are average of those in mill. Is exposed to hot and cold temperatures for periods of time while working outside.

11. Hazards

Carelessness in loading rolls may result in serious accident.

JOB SPECIFICATIONS

Job No. 27 May 20, 1951

Job Title - Truck Driver

1. Training Time

Can perform job in proficient manner after two or three weeks experience. Must have truck driver's licence.

2. Education

Must be able to read, write, and tally weight sheets.

3. Complexity of Job

Must perform normal truck driving duties.

4. Endurance

Pace is intermittent. Requires great effort for short periods of time in loading and unloading truck.

5. Strength

Must be able to lift 100 lbs plus.

6. Responsibility for Equipment

Is responsible for proper care and operation of $2000 motor truck.

7. Responsibility for Material or Product.

Negligence may result in $100 damage to paper product in one shift.

8. For Safety of Others

Careless operation of truck may result in fatal accident.

9. For Work of Others

Not responsible for work of others.

10. Working Conditions

Conditions are average of those in the mill.

11. Hazards

Carelessness may result in serious accident while operating truck and loading paper.

JOB SPECIFICATIONS

Job No. 28 May 20, 1951

Job Title - Electric Truck Operator

1. Training Time

Less than 30 days training required to become proficient on job.

2. Education

Must be able to read and write.

3. Complexity of Job

Must be able to operate truck in proficient and safe manner.

4. Endurance

Place is steady, but no great effort required.

5. Strength

Must be able to lift 100 lb. roll of paper.

6. Responsibility for Equipment

Negligence may cause $1200 damage to electric truck.

7. Responsibility for Material or Product

Negligence may damage $150 worth of paper product in one shift.

8. Safety of Others

Carelessness may result in serious accident to laborers in loading paper.

9. Work of Others

Not responsible for work of others.

10. Working Conditions

Conditions are average of those in the mill.

11. Hazards

Carelessness in handling paper may result in serious accident.

APPENDIX XII

THE JOB EVALUATION MANUAL

THE JOB EVALUATION MANUAL

The management with the cooperation of the union has undertaken a new plan for setting wages of the hourly-paid employees, in an effort to assign wages in as fair and equitable manner as possible. A job evaluation committee, consisting of two members selected by the management, two by the union, and one member selected jointly, was chosen to study the problem and to choose the methods best suited for use in this organization.

Jobs have been studied by the committee in an effort to select job-components which are common to all. Each job was given point ratings on the job-components so selected, in a manner that will be described in more detail in a later section of this manual. The total point ratings so obtained were used to determine the relative values of all jobs. Only the jobs were measured, and there was no attempt to determine the merit ratings of the workers on the jobs.

The purpose of this manual is to define the methods used in rating the jobs. Only by standardization of the methods used in evaluation is it possible to obtain results that will be satisfactory to all concerned.

The Job Evaluation Committee

The following men were appointed members of the Job Evaluation Committee to study the methods to be used and to rate the jobs in the Waterproof Department:

John H. Smith, Superintendent - Management

William T. Jones, Asst. Supt. - Management

James T. Johnson, Shop Steward - Union

Herman W. James, Shop Steward - Union

Jack S. Thomas, Night Foreman - Joint

How Job Evaluation Works

All jobs in the Waterproof Department were listed by title, and the members of the Job Evaluation Committee compiled a written description of each of these jobs. These descriptions included the scope, purpose, and content of the jobs, together with a detailed description of the work performed. After studying the jobs and writing the above descriptions, the evaluation committee was then able to select factors or job characteristics which were to be used as a measuring scale for all jobs. Each factor was broken down into degree levels which effectively show the level of each factor required to fill the job in a satisfactory manner.

The point ratings assigned to each factor and degree are shown on the Job Analysis Data Sheet on the following page of this manual. From an examination of the list of factors chosen as a rating scale for the jobs, it is apparent that each does not share an equal value in making up the composition of the jobs. For that reason it is necessary to assign "weighted" point values to the factor and degree levels.

Title_____ Date_____

DEMANDS	Wts.	Rating
Training Time		
Less than 30 days	20	
1-3 months	110	
3-6 months	200	
Education		
Read & write	15	
Port & Total wt. sheets	83	
Fill out reports	150	
Complexity of Job		
Not complex (use simple tools)	15	
Semi-complex (requires definite mental alertness)	83	
Complex (must figure pulley speeds or synchronize machinery)	150	
Endurance		
Not sustained	5	
Ordinary	28	
Constant	50	
Strength		
5-30 lbs	5	
30-90 lbs	28	
90-150 lbs	50	
TOTAL		

RESPONSIBILITIES	Wts.	Rating
6. For Equipment		
Up to $200	9	
$200 to $1200	36	
$1200 to $2400	63	
$2400 to $5000	90	
7. For Materials or Product		
Up to $200	9	
$200 to $1200	36	
$1200 to $2400	63	
$2400 to $5000	90	
8. For Safety of Others		
Minor Accident (no loss time)	9	
Serious (several weeks loss time)	36	
Loss of limbs or other permanent disability	63	
Fatality	90	
9. For Work of Others		
None	3	
One or more	30	
JOB CONDITIONS		
10. Working Conditions		
Best	5	
Average	28	
Poorest	50	
11. Hazards		
Non hazardous	5	
Slightly hazardous	20	
Moderately "	28	
Hazardous	50	
TOTAL		

POINT RATING FOR THIS JOB
(Sum of both Rating Columns) .....

RATED BY_____ CHECKED BY_____

Key jobs were evaluated, using various combinations of weighted factors until the resulting evaluations were believed to be correct. The final weights so chosen are shown by the point values of the lowest degree under each factor, which indicate the percentage value assigned to that whole factor. Values of the highest degree levels were set by multiplying the values of the lowest by ten.

Definition of the Factors and Degrees Used

The following factors and degrees were chosen as the scale to be used in rating the jobs in the Waterproof Department:

1. Training Time - The time required to be able to produce 80% or more of the normal production for that job.

   a. Less than 30 days
   b. 1 to 3 months
   c. 3 to 6 months

2. Education - The schooling or ability required to perform the following:

   a. Read and write - the ability to read and write simple language.
   b. Post and total weight sheets - the ability to post the weights of paper rolls and total those weights accurately.
   c. Fill out reports - the ability to keep accurate written records of the sizes, basis weights and amounts of paper consumed and produced, together with any other necessary information concerning the operation of production machinery.

3. Complexity of Job - Degree of skill required to perform either of the following three classes of work:

a. Not complex - uses simple tools such as hammer, saw or crow-bar.
b. Semi-complex - requires definite mental alertness such as required in the operation of a baling press.
c. Complex - requires definite mechanical ability such as figuring pulley speeds, or the synchronization of various sections of machinery.

4. Endurance - The pace and effort required to perform the job in a satisfactory manner.

a. Not sustained - only normal effort required with at least 10% of working day not requiring expenditure of effort.
b. Ordinary - only normal effort required, but must be exerted constantly during working day.
c. Constant - above normal effort required for more than 50% of the working day.

5. Strength - The physical strength required to lift the specified weights and carry for short distances.

a. 5 to 30 lbs.
b. 30 to 90 lbs.
c. 90 to 150 lbs.

6. Responsibility for Equipment - The amount of damage that could occur to equipment as a result of negligence as distinguished from deliberate destruction, during one eight-hour shift.

a. Up to $200
b. $200 to $1200
c. $1200 to $2400
d. $2400 to $5000

7. Responsibility for Material or Product - The same as above with respect to material or product.

a. Up to $200
b. $200 to $1200
c. $1200 to $2400
d. $2400 to $5000

8. Responsibility for Safety of Others - The seriousness of the accident that carelessness in the performance of the job could cause to those other workers who are in close contact with the job.

a. Minor accident - no lost time
b. Serious accident - accident resulting in several weeks lost time
c. Loss of limb or other permanent disability
d. Fatality

9. Responsibility for Work of Others- The responsibility of one worker for the quality and quantity of the work performed by another.

a. None
b. One or more

10. Working Conditions - Defined with respect to the overall conditions in this mill only.

a. Best - adequate light and ventilation, normal room temperatures and lack of objectionable noise, as exemplified by the job of roll wrappers and tiers.

b. Average - the existence of at least one objectionable feature such as noise, extremes of temperature, poor ventilation or poor lighting conditions.
c. Poorest - the existence of more than one objectionable condition, such as noise, extremes of temperature, poor ventilation or bad light.

11. Hazards - The type of accident to which the worker on each job is exposed.

a. Non-hazardous - worker is exposed to minor accidents involving no lost time.
b. Slightly hazardous - worker is exposed to accidents that may result in several weeks lost time.
c. Moderately hazardous - worker is exposed to accident that may result in loss of limb or other permanent disability.
d. Hazardous - worker is exposed to possible fatal accident.

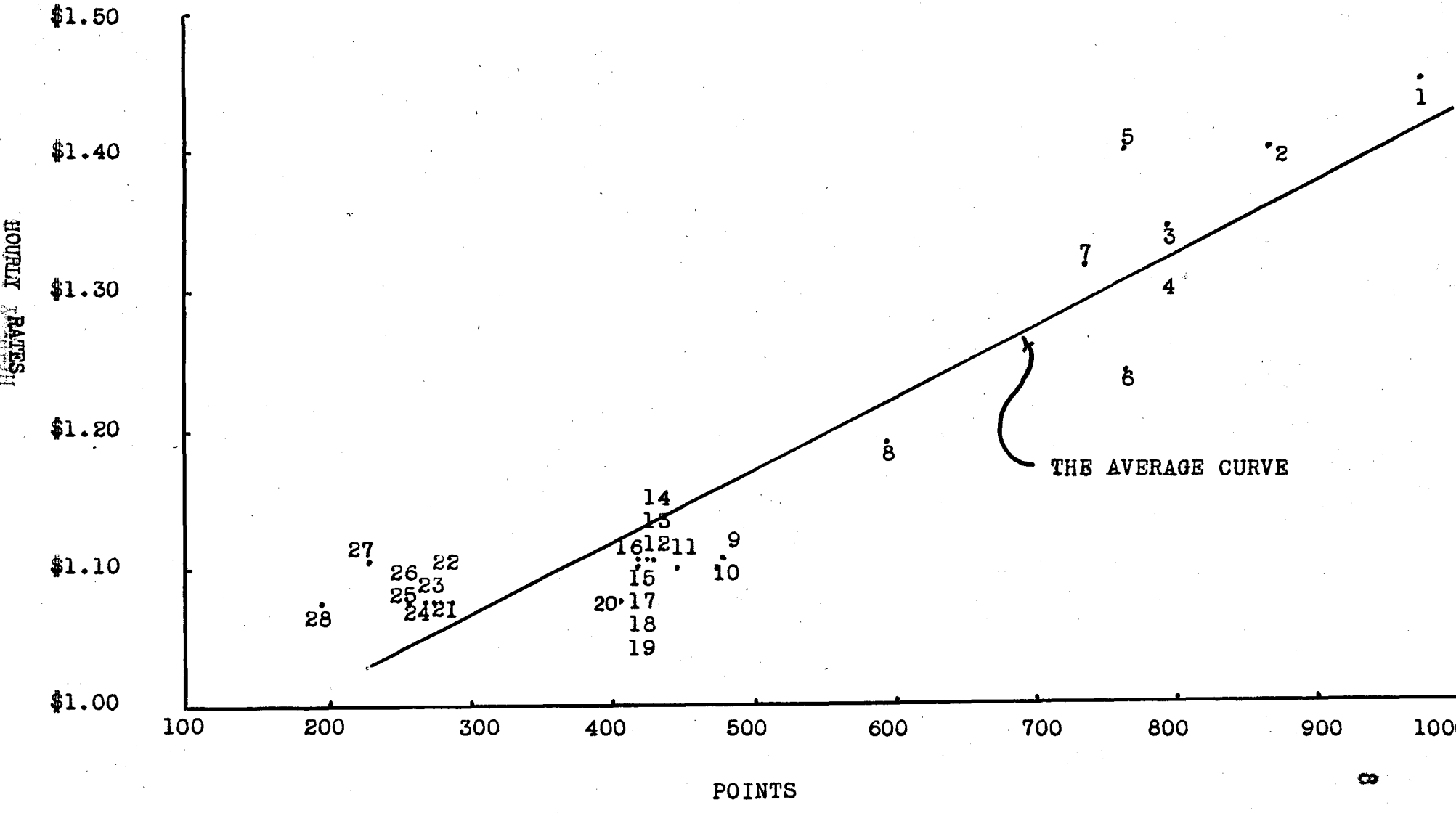
Conversion of Points to Money

After all jobs had been rated and a total point value determined for each, it was necessary to convert the point values to monetary ratings. This was accomplished by plotting the point values of each job against the hourly wages paid for that job. This resulted in a scattering of points over the graph in a rough pattern from which it is possible to calculate a line representing the average position of these points. Such a line is shown on the next page on the wage curve chart.

An examination of the chart shows that certain jobs have been overpaid and their rates must be lowered to bring them in line with the other jobs. In order to reduce the need for lowering individual rates to a minimum, the management has raised the general level of the curve in actual practice. Even with the new curve, a few job rates will have to be reduced to bring these jobs in line. It is the intention of the management to continue to pay the present rates as long as the present personnel are holding these jobs, but when it becomes necessary to replace these men, the new rate as indicated by the wage curve will go into effect.

It will be necessary from time to time to alter the procedures defined in this manual when job contents are changed or when new jobs are added. All employees are urged to consult with the members of the Job Evaluation Committee if the procedures explained in this manual are not clear or if any improvements can be recommended. It is the belief of the management and the union that the procedures outlined in this manual represent the fairest method of determining wage rates.

THE WAGE CURVE



APPENDIX IV

JOB ANALYSIS DATA SHEETS

JOB ANALYSIS DATA SHEET

Job Title No. 1 (Asphalt) Machine Operator Date June 20, 1951

SKILL DEMANDS	Wts	Rating
1. Training Time		
Less than 30 days	.20	
1-3 months	.110	110
3-6 months	.200	
2. Education		
Read & write	.15	
Post & Total wt. sheets	.63	
Fill out reports	.150	150
3. Complexity of Job		
Not complex (use simple tools)	.15	
Semi-complex (requires definite mental alertness)	.63	
Complex (must figure pulley speeds or synchronize machinery)	.150	150
EFFORT		
4. Endurance		
Not sustained	.5	
Ordinary	.28	28
Constant	.50	
5. Strength		
5-30 lbs	.5	
30-90 lbs	.28	
90-150 lbs	.50	50
TOTAL		488

RESPONSIBILITIES	Wts	Rating
6. For Equipment		
Up to $200	.9	
$200 to $1200	.36	
$1200 to $2400	.63	63
$2400 to $5000	.90	
7. For Materials or Product.		
Up to $200	.9	
$200 to $1200	.36	
$1200 to $2400	.63	
$2400 to $5000	.90	90
8. For Safety of Others		
Minor Accident (no loss time)	.9	
Serious (several weeks loss time)	.36	
Loss of limbs or other permanent disability	.63	63
Fatality	.90	
9. For Work of Others		
None	.3	
One or more	.30	30
JOB CONDITIONS		
10. Working Conditions		
Best	.5	
Average	.28	
Poorest	.50	50
11. Hazards		
Non hazardous	.5	
Slightly hazardous	.20	
Moderately "	.35	35
Hazardous	.80	
TOTAL		381

POINT RATING FOR THIS JOB
(Sum of both Rating Columns) 869

RATED BY _____ CHECKED BY _____

JOB ANALYSIS DATA SHEET

Job Title No. 2 (Wax) Machine Operator **Date** June 20, 1951

SKILL DEMANDS	Wtg.	Rating
1. Training Time		
Less than 30 days	.20	
1-3 months	.110	110
3-6 months	.200	
2. Education		
Read & write	.15	
Post & Total wt. sheets	.83	
Fill out reports	.150	150
3. Complexity of Job		
Not complex (use simple tools)	.15	
Semi-complex (requires definite mental alertness)	.83	
Complex (must figure pulley speeds or synchronize machinery)	.150	150
EFFORT		
4. Endurance		
Not sustained	.5	
Ordinary	.28	28
Constant	.50	
5. Strength		
5-30 lbs	.5	
30-90 lbs	.28	
90-150 lbs	.50	50
TOTAL		488

RESPONSIBILITIES	Wtg.	Rating
6. For Equipment		
Up to $200	.9	
$200 to $1200	.36	36
$1200 to $2400	.63	
$2400 to $5000	.90	
7. For Materials or Product.		
Up to $200	.9	
$200 to $1200	.36	
$1200 to $2400	.63	63
$2400 to $5000	.90	
8. For Safety of Others		
Minor Accident (no loss time)	.9	
Serious (several weeks loss time)	.36	
Loss of limbs or other permanent disability	.63	63
Fatality	.90	
9. For Work of Others		
None	.2	
One or more	.30	30
JOB CONDITIONS		
10. Working Conditions		
Best	.5	
Average	.20	
Poorest	.50	50
11. Hazards		
Non hazardous	.5	
Slightly hazardous	.20	
Moderately "	.35	35
Hazardous	.50	
TOTAL		277

POINT RATING FOR THIS JOB (Sum of both Rating Columns) 765

RATED BY_____ CHECKED BY_____

JOB ANALYSIS DATA SHEET

Job Title No. 3 (Asphalt) Machine Operator Date June 20, 1951

SKILL DEMANDS	Wts	Rating
1. Training Time		
Less than 30 days	.20	
1-3 months	.110	
3-6 months	.200	200
2. Education		
Read & write	.15	
Post & Total wt. sheets	.83	
Fill out reports	.150	150
3. Complexity of Job		
Not complex (use simple tools)	.15	
Semi-complex (requires definite mental alertness)	.83	
Complex (must figure pulley speeds or synchronize machinery)	.150	150
EFFORT		
4. Endurance		
Not sustained	.5	
Ordinary	.28	28
Constant	.50	
5. Strength		
5-30 lbs	.5	
30-90 lbs	.28	
90-150 lbs	.50	50
TOTAL		578

RESPONSIBILITIES	Wts	Rating
6. For Equipment		
Up to $200	.9	
$200 to $1200	.36	
$1200 to $2400	.62	
$2400 to $5000	.90	90
7. For Materials or Product.		
Up to $200	.9	
$200 to $1200	.36	
$1200 to $2400	.63	
$2400 to $5000	.90	90
8. For Safety of Others		
Minor Accident (no loss time)	.9	
Serious (several weeks loss time)	.36	
Loss of limbs or other perminent disability	.63	
Fatality	.90	90
9. For Work of Others		
None	.3	
One or more	.30	30
JOB CONDITIONS		
10. Working Conditions		
Best	.5	
Average	.28	
Poorest	.50	50
11. Hazards		
Non hazardous	.5	
Slightly hazardous	.20	
Moderately "	.35	
Hazardous	.50	50
TOTAL		400

POINT RATING FOR THIS JOB (Sum of both Rating Columns) 978

RATED BY _____ CHECKED BY _____

JOB ANALYSIS DATA SHEET

Job Title No. 4 (Asphalt) Machine Operator Date June 20, 1951

SKILL DEMANDS	Wts	Rating
1. Training Time		
Less than 30 days	.20	
1-3 months	.110	110
3-6 months	.200	
2. Education		
Read & write	.15	
Post & Total wt. sheets	.83	
Fill out reports	.150	150
3. Complexity of Job		
Not complex (use simple tools)	.15	
Semi-complex (requires definite mental alertness)	.83	
Complex (must figure pulley speeds or synchronize machinery)	.150	150
EFFORT		
4. Endurance		
Not sustained	.5	
Ordinary	.28	28
Constant	.50	
5. Strength		
5-30 lbs	.5	
30-90 lbs	.28	
90-150 lbs	.50	50
TOTAL		488

RESPONSIBILITIES	Wts	Rating
6. For Equipment		
Up to $200	.9	
$200 to $1200	.26	
$1200 to $2400	.63	63
$2400 to $5000	.90	
7. For Materials or Product.		
Up to $200	.9	
$200 to $1200	.36	
$1200 to $2400	.63	63
$2400 to $5000	.90	
8. For Safety of Others		
Minor Accident (no loss time)	.9	
Serious (several weeks loss time)	.36	
Loss of limbs or other perminent disability	.63	63
Fatality	.90	
9. For Work of Others		
None	.3	
One or more	.30	30
JOB CONDITIONS		
10. Working Conditions		
Best	.5	
Average	.28	
Poorest	.50	50
11. Hazards		
Non hazardous	.5	
Slightly hazardous	.20	
Moderately "	.35	35
Hazardous	.50	
TOTAL		304

POINT RATING FOR THIS JOB (Sum of both Rating Columns) 792

RATED BY_____ CHECKED BY_____

JOB ANALYSIS DATA SHEET

Job Title No. 1 (Asphalt) Machine Helper Date June 20, 1951

SKILL DEMANDS	Wts	Rating
1. Training Time		
Less than 30 days	.20	20
1-3 months	.110	
3-6 months	.200	
2. Education		
Read & write	.15	15
Post & Total wt. sheets	.83	
Fill out reports	.150	
3. Complexity of Job		
Not complex (use simple tools)	.15	
Semi-complex (requires definite mental alertness)	.83	83
Complex (must figure pulley speeds or synchronize machinery)	.150	
EFFORT		
4. Endurance		
Not sustained	.5	
Ordinary	.28	28
Constant	.50	
5. Strength		
5-30 lbs	.5	
30-90 lbs	.28	
90-150 lbs	.50	50
TOTAL		196

RESPONSIBILITIES	Wts	Rating
6. For Equipment		
Up to $200	.9	
$200 to $1200	.36	36
$1200 to $2400	.63	
$2400 to $5000	.90	
7. For Materials or Product.		
Up to $200	.9	
$200 to $1200	.36	
$1200 to $2400	.63	63
$2400 to $5000	.90	
8. For Safety of Others		
Minor Accident (no loss time)	.9	
Serious (several weeks loss time)	.36	
Loss of limbs or other perminent disability	.63	63
Fatality	.90	
9. For Work of Others		
None	.3	3
One or more	.30	
JOB CONDITIONS		
10. Working Conditions		
Best	.5	
Average	.28	
Poorest	.50	50
11. Hazards		
Non hazardous	.5	
Slightly hazardous	.20	
Moderately "	.35	35
Hazardous	.50	
TOTAL		250

POINT RATING FOR THIS JOB (Sum of both Rating Columns) 446

RATED BY _____ CHECKED BY _____

JOB ANALYSIS DATA SHEET

Job Title No. 2 (Wax) Machine Helper **Date** June 20, 1951

SKILL DEMANDS	Wts	Rating
1. Training Time		
Less than 30 days	.20	20
1-3 months	.110	
3-6 months	.200	
2. Education		
Read & write	.15	15
Post & Total wt. sheets	.83	
Fill out reports	.150	
3. Complexity of Job		
Not complex (use simple tools)	.15	
Semi-complex (requires definite mental alertness)	.83	83
Complex (must figure pulley speeds or synchronize machinery)	.150	
EFFORT		
4. Endurance		
Not sustained	.5	
Ordinary	.28	28
Constant	.50	
5. Strength		
5-30 lbs	.5	
30-90 lbs	.28	
90-150 lbs	.50	50
TOTAL		196

RESPONSIBILITIES	Wts	Rating
6. For Equipment		
Up to $200	.9	
$200 to $1200	.36	36
$1200 to $2400	.63	
$2400 to $5000	.99	
7. For Materials or Product.		
Up to $200	.9	
$200 to $1200	.36	36
$1200 to $2400	.63	
$2400 to $5000	.99	
8. For Safety of Others		
Minor Accident (no loss time)	.9	
Serious (several weeks loss time)	.36	
Loss of limbs or other perminent disability	.63	63
Fatality	.99	
9. For Work of Others		
None	.3	3
One or more	.30	
JOB CONDITIONS		
10. Working Conditions		
Best	.5	
Average	.28	
Poorest	.50	50
11. Hazards		
Non hazardous	.5	
Slightly hazardous	.20	
Moderately "	.35	
Hazardous	.50	50
TOTAL		223

POINT RATING FOR THIS JOB
(Sum of both Rating Columns) 419

RATED BY _____ CHECKED BY _____

JOB ANALYSIS DATA SHEET

Job Title No. 3 (Asphalt) Machine Helper Date June 20, 1951

SKILL DEMANDS	Wts	Rating
1. Training Time		
Less than 30 days	.20	20
1-3 months	.110	
3-6 months	.200	
2. Education		
Read & write	.15	15
Post & Total wt. sheets	.83	
Fill out reports	.150	
3. Complexity of Job		
Not complex (use simple tools)	.15	
Semi-complex (requires definite mental alertness)	.83	83
Complex (must figure pulley speeds or synchronize machinery)	.150	
EFFORT		
4. Endurance		
Not sustained	.5	
Ordinary	.28	28
Constant	.50	
5. Strength		
5-30 lbs	.5	
30-90 lbs	.28	
90-150 lbs	.50	50
TOTAL		196

RESPONSIBILITIES	Wts	Rating
6. For Equipment		
Up to $200	.9	
$200 to $1200	.36	
$1200 to $2400	.63	63
$2400 to $5000	.90	
7. For Materials or Product.		
Up to $200	.9	
$200 to $1200	.36	
$1200 to $2400	.63	63
$2400 to $5000	.90	
8. For Safety of Others		
Minor Accident (no loss time)	.9	
Serious (several weeks loss time)	.36	
Loss of limbs or other permanent disability	.63	63
Fatality	.90	
9. For Work of Others		
None	.3	3
One or more	.30	
JOB CONDITIONS		
10. Working Conditions		
Best	.5	
Average	.28	
Poorest	.50	50
11. Hazards		
Non hazardous	.5	
Slightly hazardous	.20	
Moderately "	.35	35
Hazardous	.50	
TOTAL		277

POINT RATING FOR THIS JOB (Sum of both Rating Columns) 473

RATED BY_____ CHECKED BY_____

JOB ANALYSIS DATA SHEET

Job Title No. 4 (Asphalt) Machine Helper **Date** June 20, 1951

SKILL DEMANDS	Wts	Rating
1. Training Time		
Less than 30 days	.20	20
1-3 months	.10	
3-6 months	.00	
2. Education		
Read & write	.15	15
Post & Total wt. sheets	.03	
Fill out reports	.150	
3. Complexity of Job		
Not complex (use simple tools)	.15	
Semi-complex (requires definite mental alertness)	.83	83
Complex (must figure pulley speeds or synchronize machinery)	.150	
EFFORT		
4. Endurance		
Not sustained	.5	
Ordinary	.28	28
Constant	.50	
5. Strength		
5-30 lbs	.5	
30-90 lbs	.28	
90-150 lbs	.50	50
TOTAL		196

RESPONSIBILITIES	Wts	Rating
6. For Equipment		
Up to $200	.9	
$200 to $1200	.36	36
$1200 to $2400	.63	
$2400 to $5000	.90	
7. For Materials or Product.		
Up to $200	.9	
$200 to $1200	.36	36
$1200 to $2400	.63	
$2400 to $5000	.90	
8. For Safety of Others		
Minor Accident (no loss time)	.9	
Serious (several weeks loss time)	.36	
Loss of limbs or other perminent disability	.63	63
Fatality	.90	
9. For Work of Others		
None	.3	3
One or more	.30	
JOB CONDITIONS		
10. Working Conditions		
Best	.5	
Average	.28	
Poorest	.50	50
11. Hazards		
Non hazardous	.5	
Slightly hazardous	.20	
Moderately "	.35	35
Hazardous	.50	
TOTAL		223

POINT RATING FOR THIS JOB
(Sum of both Rating Columns) 419

RATED BY _____ CHECKED BY _____

JOB ANALYSIS DATA SHEET

Job Title Feederman Load

Date June 20, 1951

SKILL DEMANDS	Wts	Rating
1. Training Time		
Less than 30 days	.20	20
1-3 months	.110	
3-6 months	.200	
2. Education		
Read & write	.15	15
Post & Total wt. sheets	.83	
Fill out reports	.150	
3. Complexity of Job		
Not complex (use simple tools)	.15	15
Semi-complex (requires definite mental alertness)	.83	
Complex (must figure pulley speeds or synchronize machinery)	.150	
EFFORT		
4. Endurance		
Not sustained	.5	
Ordinary	.28	28
Constant	.50	
5. Strength		
5-30 lbs	.5	
30-90 lbs	.28	
90-150 lbs	.50	50
TOTAL		128

RESPONSIBILITIES	Wts	Rating
6. For Equipment		
Up to $200	.9	9
$200 to $1200	.36	
$1200 to $2400	.63	
$2400 to $5000	.90	
7. For Materials or Product.		
Up to $200	.9	9
$200 to $1200	.36	
$1200 to $2400	.63	
$2400 to $5000	.90	
8. For Safety of Others		
Minor Accident (no loss time)	.9	
Serious (several weeks loss time)	.36	36
Loss of limbs or other perminent disability	.63	
Fatality	.90	
9. For Work of Others		
None	.2	3
One or more	.30	
JOB CONDITIONS		
10. Working Conditions		
Best	.5	
Average	.20	
Poorest	.50	50
11. Hazards		
Non hazardous	.5	
Slightly hazardous	.20	20
Moderately "	.35	
Hazardous	.50	
TOTAL		127

POINT RATING FOR THIS JOB
(Sum of both Rating Columns) ..255.....

RATED BY_____

CHECKED BY_____

Job Title Feederman Unload Date June 20, 1951

SKILL DEMANDS	Wts.	Rating
1. Training Time		
Less than 30 days	.20	20
1-3 months	.110	
3-6 months	.200	
2. Education		
Read & write	.15	15
Post & Total wt. sheets	.83	
Fill out reports	.150	
3. Complexity of Job		
Not complex (use simple tools)	.15	15
Semi-complex (requires definite mental alertness)	.83	
Complex (must figure pulley speeds or synchronize machinery)	.150	
EFFORT		
4. Endurance		
Not sustained	.5	
Ordinary	.28	
Constant	.50	50
5. Strength		
5-30 lbs	.5	
30-90 lbs	.28	
90-150 lbs	.50	50
TOTAL		

RESPONSIBILITIES	Wts.	Rating
6. For Equipment		
Up to $200	.9	9
$200 to $1200	.36	
$1200 to $2400	.63	
$2400 to $5000	.90	
7. For Materials or Product.		
Up to $200	.9	9
$200 to $1200	.36	
$1200 to $2400	.63	
$2400 to $5000	.90	
8. For Safety of Others		
Minor Accident (no loss time)	.9	
Serious (several weeks loss time)	.36	36
Loss of limbs or other permanent disability	.63	
Fatality	.90	
9. For Work of Others		
None	.3	3
One or more	.30	
JOB CONDITIONS		
10. Working Conditions		
Best	.5	
Average	.25	
Poorest	.50	50
11. Hazards		
Non hazardous	.5	
Slightly hazardous	.20	20
Moderately "	.35	
Hazardous	.50	
TOTAL		

POINT RATING FOR THIS JOB
(Sum of both Rating Columns) .....

RATED BY _____ CHECKED BY _____

JOB ANALYSIS DATA SHEET

Job Title Tankman

Date June 20, 1951

SKILL DEMANDS	Wts	Rating
1. Training Time		
Less then 30 days	.20	20
1-3 months	.110	
3-6 months	.200	
2. Education		
Read & write	.15	15
Post & Total wt. sheets	.83	
Fill out reports	.150	
3. Complexity of Job		
Not complex (use simple tools)	.15	
Semi-complex (requires definite mental alertness)	.83	83
Complex (must figure pulley speeds or synchronize machinery)	.150	
EFFORT		
4. Endurance		
Not sustained	.5	
Ordinary	.28	28
Constant	.50	
5. Strength		
5-30 lbs	.5	
30-90 lbs	.28	
90-150 lbs	.50	50
TOTAL		196

RESPONSIBILITIES	Wts	Rating
6. For Equipment		
Up to $200	.9	
$200 to $1200	.36	36
$1200 to $2400	.63	
$2400 to $5000	.90	
7. For Materials or Product.		
Up to $200	.9	
$200 to $1200	.36	
$1200 to $2400	.63	63
$2400 to $5000	.90	
8. For Safety of Others		
Minor Accident (no loss time)	.9	
Serious (several weeks loss time)	.36	36
Loss of limbs or other permanent disability	.63	
Fatality	.90	
9. For Work of Others		
None	.3	3
One or more	.30	
JOB CONDITIONS		
10. Working Conditions		
Best	.5	
Average	.25	
Poorest	.50	50
11. Hazards		
Non hazardous	.5	
Slightly hazardous	.20	
Moderately "	.35	35
Hazardous	.50	
TOTAL		223

POINT RATING FOR THIS JOB (Sum of both Rating Columns) 419

RATED BY _____

CHECKED BY _____

JOB ANALYSIS DATA SHEET

Job Title Lift Truck Operator (Day) Date June 20, 1951

SKILL DEMANDS	Wts	Rating
1. Training Time		
Less than 30 days	.20	20
1-3 months	110	
3-6 months	200	
2. Education		
Read & write	.15	15
Post & Total wt. sheets	.83	
Fill out reports	150	
3. Complexity of Job		
Not complex (use simple tools)	.15	
Semi-complex (requires definite mental alertness)	.83	83
Complex (must figure pulley speeds or synchronize machinery)	150	
EFFORT		
4. Endurance		
Not sustained	.5	
Ordinary	.28	28
Constant	.50	
5. Strength		
5-30 lbs	.5	
30-90 lbs	.28	
90-150 lbs	.50	50
TOTAL		196

RESPONSIBILITIES	Wts	Rating
6. For Equipment		
Up to $200	.9	
$200 to $1200	.36	
$1200 to $2400	.63	
$2400 to $5000	.90	90
7. For Materials or Product.		
Up to $200	.9	9
$200 to $1200	.36	
$1200 to $2400	.63	
$2400 to $5000	.90	
8. For Safety of Others		
Minor Accident (no loss time)	.9	
Serious (several weeks loss time)	.36	
Loss of limbs or other permanent disability	.63	63
Fatality	.90	
9. For Work of Others		
None	.3	3
One or more	.30	
JOB CONDITIONS		
10. Working Conditions		
Best	.5	
Average	.28	28
Poorest	.50	
11. Hazards		
Non hazardous	.5	
Slightly hazardous	.20	
Moderately "	.35	35
Hazardous	.50	
TOTAL		228

POINT RATING FOR THIS JOB (Sum of both Rating Columns) 424

RATED BY _____ CHECKED BY _____

Job Title Lift Truck Operator's Helper Date June 20, 1951

SKILL DEMANDS	Wts.	Rating
1. Training Time		
Less than 30 days	.20	20
1-3 months	.110	
3-6 months	.200	
2. Education		
Read & write	.15	15
Post & Total wt. sheets	.83	
Fill out reports	.150	
3. Complexity of Job		
Not complex (use simple tools)	.15	15
Semi-complex (requires definite mental alertness)	.83	
Complex (must figure pulley speeds or synchronize machinery)	.150	
EFFORT		
4. Endurance		
Not sustained	.5	
Ordinary	.28	28
Constant	.50	
5. Strength		
5-30 lbs	.5	
30-90 lbs	.28	
90-150 lbs	.50	50
TOTAL		

RESPONSIBILITIES	Wts.	Rating
6. For Equipment		
Up to $200	.9	9
$200 to $1200	.36	
$1200 to $2400	.63	
$2400 to $5000	.90	
7. For Materials or Product.		
Up to $200	.9	9
$200 to $1200	.36	
$1200 to $2400	.63	
$2400 to $5000	.90	
8. For Safety of Others		
Minor Accident (no loss time)	.9	
Serious (several weeks loss time)	.36	
Loss of limbs or other permanent disability	.63	63
Fatality	.90	
9. For Work of Others		
None	.3	3
One or more	.30	
JOB CONDITIONS		
10. Working Conditions		
Best	.5	
Average	.28	28
Poorest	.50	
11. Hazards		
Non hazardous	.5	
Slightly hazardous	.20	
Moderately "	.35	35
Hazardous	.50	
TOTAL		147

POINT RATING FOR THIS JOB
(Sum of both Rating Columns) 275

RATED BY _____ CHECKED BY _____

JOB ANALYSIS DATA SHEET

Job Title Janitor

Date June 20, 1951

SKILL DEMANDS	Wts	Rating
1. Training Time		
Less than 30 days	.20	20
1-3 months	.110	
3-6 months	.209	
2. Education		
Read & write	.15	15
Post & Total wt. sheets	.83	
Fill out reports	.150	
3. Complexity of Job		
Not complex (use simple tools)	.15	15
Semi-complex (requires definite mental alertness)	.83	
Complex (must figure pulley speeds or synchronize machinery)	.150	
EFFORT		
4. Endurance		
Not sustained	.5	
Ordinary	.28	28
Constant	.50	
5. Strength		
5-30 lbs	.5	
30-90 lbs	.28	28
90-150 lbs	.50	
TOTAL		106

RESPONSIBILITIES	Wts	Rating
6. For Equipment		
Up to $200	.9	9
$200 to $1200	.36	
$1200 to $2400	.62	
$2400 to $5000	.90	
7. For Materials or Product.		
Up to $200	.9	9
$200 to $1200	.36	
$1200 to $2400	.63	
$2400 to $5000	.90	
8. For Safety of Others		
Minor Accident (no loss time)	.9	9
Serious (several weeks loss time)	.36	
Loss of limbs or other perminent disability	.63	
Fatality	.90	
9. For Work of Others		
None	.3	3
One or more	.30	
JOB CONDITIONS		
10. Working Conditions		
Best	.5	
Average	.28	
Poorest	.50	50
11. Hazards		
Non hazardous	.5	5
Slightly hazardous	.20	
Moderately "	.35	
Hazardous	.50	
TOTAL		85

POINT RATING FOR THIS JOB (Sum of both Rating Columns) 191

RATED BY_____

CHECKED BY_____

JOB ANALYSIS DATA SHEET

Job Title Fork Life Operator (Night) Date June 20, 1951

SKILL DEMANDS	Wts	Rating
1. Training Time		
Less than 30 days	.20	20
1-3 months	.10	
3-6 months	.00	
2. Education		
Read & write	.15	15
Post & Total wt. sheets	.83	
Fill out reports	.50	
3. Complexity of Job		
Not complex (use simple tools)	.15	
Semi-complex (requires definite mental alertness)	.83	83
Complex (must figure pulley speeds or synchronize machinery)	.50	
EFFORT		
4. Endurance		
Not sustained	.5	
Ordinary	.28	28
Constant	.50	
5. Strength		
5-30 lbs	.5	
30-90 lbs	.28	
90-150 lbs	.50	50
TOTAL		196

RESPONSIBILITIES	Wts	Rating
6. For Equipment		
Up to $200	.9	
$200 to $1200	.36	
$1200 to $2400	.63	
$2400 to $5000	.90	90
7. For Materials or Product.		
Up to $200	.9	9
$200 to $1200	.36	
$1200 to $2400	.63	
$2400 to $5000	.90	
8. For Safety of Others		
Minor Accident (no loss time)	.9	
Serious (several weeks loss time)	.36	
Loss of limbs or other perminent disability	.63	63
Fatality	.90	
9. For Work of Others		
None	.3	3
One or more	.30	
JOB CONDITIONS		
10. Working Conditions		
Best	.5	
Average	.28	28
Poorest	.50	
11. Hazards		
Non hazardous	.5	
Slightly hazardous	.20	
Moderately "	.35	35
Hazardous	.50	
TOTAL		228

POINT RATING FOR THIS JOB (Sum of both Rating Columns) 424

RATED BY_____ CHECKED BY_____

JOB ANALYSIS DATA SHEET

Job Title Baleman

Date June 20, 1951

SKILL DEMANDS	Wts	Rating
1. Training Time		
Less than 30 days	.20	20
1-3 months	110	
3-6 months	200	
2. Education		
Read & write	.15	
Post & Total wt. sheets	.83	83
Fill out reports	150	
3. Complexity of Job		
Not complex (use simple tools)	.15	
Semi-complex (requires definite mental alertness)	.83	83
Complex (must figure pulley speeds or synchronize machinery)	150	
EFFORT		
4. Endurance		
Not sustained	.5	
Ordinary	.28	
Constant	.50	50
5. Strength		
5-30 lbs	.5	
30-90 lbs	.28	
90-150 lbs	.50	50
TOTAL		286

RESPONSIBILITIES	Wts	Rating
6. For Equipment		
Up to $200	.9	
$200 to $1200	.36	36
$1200 to $2400	.63	
$2400 to $5000	.90	
7. For Materials or Product.		
Up to $200	.9	9
$200 to $1200	.36	
$1200 to $2400	.63	
$2400 to $5000	.90	
8. For Safety of Others		
Minor Accident (no loss time)	.9	9
Serious (several weeks loss time)	.36	
Loss of limbs or other permanent disability	.63	
Fatality	.90	
9. For Work of Others		
None	.3	3
One or more	.30	
JOB CONDITIONS		
10. Working Conditions		
Best	.5	
Average	.28	28
Poorest	.50	
11. Hazards		
Non hazardous	.5	
Slightly hazardous	.20	
Moderately "	.35	35
Hazardous	.50	
TOTAL		120

POINT RATING FOR THIS JOB
(Sum of both Rating Columns) 406

RATED BY _____

CHECKED BY _____

JOB ANALYSIS DATA SHEET

Job Title No. 1 Winder Operator

Date June 20, 1951

SKILL DEMANDS	Wts	Rating
1. Training Time		
Less than 30 days	.20	
1-3 months	.110	110
3-6 months	.200	
2. Education		
Read & write	.15	
Post & Total wt. sheets	.83	
Fill out reports	.150	150
3. Complexity of Job		
Not complex (use simple tools)	.15	
Semi-complex (requires definite mental alertness)	.83	
Complex (must figure pulley speeds or synchronize machinery)	.150	150
EFFORT		
4. Endurance		
Not sustained	.5	
Ordinary	.28	
Constant	.50	50
5. Strength		
5-30 lbs	.5	
30-90 lbs	.28	
90-150 lbs	.50	50
TOTAL		510

RESPONSIBILITIES	Wts	Rating
6. For Equipment		
Up to $200	.9	
$200 to $1200	.36	36
$1200 to $2400	.63	
$2400 to $5000	.90	
7. For Materials or Product.		
Up to $200	.9	
$200 to $1200	.36	
$1200 to $2400	.63	63
$2400 to $5000	.90	
8. For Safety of Others		
Minor Accident (no loss time)	.9	
Serious (several weeks loss time)	.36	
Loss of limbs or other perminent disability	.63	63
Fatality	.90	
9. For Work of Others		
None	.3	3
One or more	.30	
JOB CONDITIONS		
10. Working Conditions		
Best	.5	
Average	.28	28
Poorest	.50	
11. Hazards		
Non hazardous	.5	
Slightly hazardous	.20	
Moderately "	.35	35
Hazardous	.50	
TOTAL		228

POINT RATING FOR THIS JOB
(Sum of both Rating Columns) 738

RATED BY: _____

CHECKED BY _____

JOB ANALYSIS DATA SHEET

Job Title No. 2 Winder Operator

Date June 20, 1951

SKILL DEMANDS	Wts	Rating
1. Training Time		
Less than 30 days	.20	
1-3 months	.110	110
3-6 months	.200	
2. Education		
Read & write	.15	
Post & Total wt. sheets	.63	
Fill out reports	.150	150
3. Complexity of Job		
Not complex (use simple tools)	.15	
Semi-complex (requires definite mental alertness)	.63	
Complex (must figure pulley speeds or synchronize machinery)	.150	150
EFFORT		
4. Endurance		
Not sustained	.5	
Ordinary	.28	
Constant	.50	50
5. Strength		
5-30 lbs	.5	
30-90 lbs	.28	
90-150 lbs	.50	50
TOTAL		510

RESPONSIBILITIES	Wts	Rating
6. For Equipment		
Up to $200	.9	
$200 to $1200	.36	
$1200 to $2400	.63	63
$2400 to $5000	.90	
7. For Materials or Product.		
Up to $200	.9	
$200 to $1200	.36	
$1200 to $2400	.63	63
$2400 to $5000	.90	
8. For Safety of Others		
Minor Accident (no loss time)	.9	
Serious (several weeks loss time)	.36	
Loss of limbs or other perminent disability	.63	63
Fatality	.90	
9. For Work of Others		
None	.3	
One or more	.30	30
JOB CONDITIONS		
10. Working Conditions		
Best	.5	
Average	.28	28
Poorest	.50	
11. Hazards		
Non hazardous	.5	
Slightly hazardous	.20	
Moderately "	.35	35
Hazardous	.50	
TOTAL		282

POINT RATING FOR THIS JOB (Sum of both Rating Columns) 792

RATED BY_____

CHECKED BY_____

JOB ANALYSIS DATA SHEET

Job Title No. 3 Winder Operator Date June 20, 1951

SKILL DEMANDS	Wts	Rating
1. Training Time		
Less than 30 days	.20	20
1-3 months	.110	
3-6 months	.200	
2. Education		
Read & write	.15	
Post & Total wt. sheets	.83	
Fill out reports	.150	150
3. Complexity of Job		
Not complex (use simple tools)	.15	
Semi-complex (requires definite mental alertness)	.83	
Complex (must figure pulley speeds or synchronize machinery)	.150	150
EFFORT		
4. Endurance		
Not sustained	.5	
Ordinary	.28	
Constant	.50	50
5. Strength		
5-30 lbs	.5	
30-90 lbs	.28	
90-150 lbs	.50	50
TOTAL		420

RESPONSIBILITIES	Wts	Rating
6. For Equipment		
Up to $200	.9	
$200 to $1200	.36	36
$1200 to $2400	.63	
$2400 to $5000	.90	
7. For Materials or Product.		
Up to $200	.9	
$200 to $1200	.36	
$1200 to $2400	.63	63
$2400 to $5000	.90	
8. For Safety of Others		
Minor Accident (no loss time)	.9	9
Serious (several weeks loss time)	.36	
Loss of limbs or other permanent disability	.63	
Fatality	.90	
9. For Work of Others		
None	.3	3
One or more	.30	
JOB CONDITIONS		
10. Working Conditions		
Best	.5	
Average	.28	28
Poorest	.50	
11. Hazards		
Non hazardous	.5	
Slightly hazardous	.20	
Moderately "	.35	35
Hazardous	.50	
TOTAL		174

POINT RATING FOR THIS JOB
(Sum of both Rating Columns) 594

RATED BY_____ CHECKED BY_____

JOB ANALYSIS DATA SHEET

Job Title No. 2 Winderman's Helper **Date** June 20, 1951

SKILL DEMANDS	Wts	Rating
1. Training Time		
Less than 30 days	.20	20
1-3 months	.110	
3-6 months	.200	
2. Education		
Read & write	.15	
Post & Total wt. sheets	.83	
Fill out reports	.150	
3. Complexity of Job		
Not complex (use simple tools)	.15	
Semi-complex (requires definite mental alertness)	.83	
Complex (must figure pulley speeds or synchronize machinery)	.150	
EFFORT		
4. Endurance		
Not sustained	.5	
Ordinary	.28	
Constant	.50	
5. Strength		
5-30 lbs	.5	
30-90 lbs	.28	
90-150 lbs	.50	
TOTAL		218

RESPONSIBILITIES	Wts	Rating
6. For Equipment		
Up to $200	.9	
$200 to $1200	.36	36
$1200 to $2400	.63	
$2400 to $5000	.90	
7. For Materials or Product.		
Up to $200	.9	
$200 to $1200	.36	36
$1200 to $2400	.63	
$2400 to $5000	.90	
8. For Safety of Others		
Minor Accident (no loss time)	.9	
Serious (several weeks loss time)	.36	
Loss of limbs or other permanent disability	.63	63
Fatality	.90	
9. For Work of Others		
None	.3	3
One or more	.30	
JOB CONDITIONS		
10. Working Conditions		
Best	.5	
Average	.28	28
Poorest	.50	
11. Hazards		
Non hazardous	.5	
Slightly hazardous	.20	
Moderately "	.35	35
Hazardous	.50	
TOTAL		201

POINT RATING FOR THIS JOB (Sum of both Rating Columns) 419

RATED BY_____ CHECKED BY_____

JOB ANALYSIS DATA SHEET

Job Title Sheeterman

Date June 20, 1951

SKILL DEMANDS	Wts	Rating
1. Training Time		
Less than 30 days	.20	
1-3 months	.110	110
3-6 months	.200	
2. Education		
Read & write	.15	
Post & Total wt. sheets	.83	
Fill out reports	.150	150
3. Complexity of Job		
Not complex (use simple tools)	.15	
Semi-complex (requires definite mental alertness)	.83	
Complex (must figure pulley speeds or synchronize machinery)	.150	150
EFFORT		
4. Endurance		
Not sustained	.5	
Ordinary	.26	
Constant	.50	50
5. Strength		
5-30 lbs	.5	
30-90 lbs	.28	
90-150 lbs	.50	50
TOTAL		510

RESPONSIBILITIES	Wts	Rating
6. For Equipment		
Up to $200	.9	
$200 to $1200	.36	
$1200 to $2400	.63	63
$2400 to $5000	.90	
7. For Materials or Product.		
Up to $200	.9	
$200 to $1200	.36	36
$1200 to $2400	.63	
$2400 to $5000	.90	
8. For Safety of Others		
Minor Accident (no loss time)	.9	
Serious (several weeks loss time)	.36	
Loss of limbs or other permanent disability	.63	63
Fatality	.90	
9. For Work of Others		
None	.3	
One or more	.30	30
JOB CONDITIONS		
10. Working Conditions		
Best	.5	
Average	.28	28
Poorest	.50	
11. Hazards		
Non hazardous	.5	
Slightly hazardous	.20	
Moderately "	.35	35
Hazardous	.50	
TOTAL		255

POINT RATING FOR THIS JOB
(Sum of both Rating Columns) ..765.....

RATED BY_____

CHECKED BY_____

JOB ANALYSIS DATA SHEET

Job Title Sheeter Helper

Date June 20, 1951

SKILL DEMANDS	Wts	Rating
1. Training Time		
Less than 30 days	.20	20
1-3 months	.110	
3-6 months	.200	
2. Education		
Read & write	.15	15
Post & Total wt. sheets	.83	
Fill out reports	.150	
3. Complexity of Job		
Not complex (use simple tools)	.15	
Semi-complex (requires definite mental alertness)	.83	83
Complex (must figure pulley speeds or synchronize machinery)	.150	
EFFORT		
4. Endurance		
Not sustained	.5	
Ordinary	.28	
Constant	.50	50
5. Strength		
5-30 lbs	.5	
30-90 lbs	.28	
90-150 lbs	.50	50
TOTAL		218

RESPONSIBILITIES	Wts	Rating
6. For Equipment		
Up to $200	.9	
$200 to $1200	.36	36
$1200 to $2400	.63	
$2400 to $5000	.90	
7. For Materials or Product.		
Up to $200	.9	
$200 to $1200	.36	36
$1200 to $2400	.63	
$2400 to $5000	.90	
8. For Safety of Others		
Minor Accident (no loss time)	.9	
Serious (several weeks loss time)	.36	
Loss of limbs or other perminent disability	.63	63
Fatality	.90	
9. For Work of Others		
None	.3	3
One or more	.30	
JOB CONDITIONS		
10. Working Conditions		
Best	.2	
Average	.28	28
Poorest	.50	
11. Hazards		
Non hazardous	.5	
Slightly hazardous	.20	
Moderately "	.35	35
Hazardous	.50	
TOTAL		201

POINT RATING FOR THIS JOB
(Sum of both Rating Columns) 419

RATED BY _____

CHECKED BY _____

JOB ANALYSIS DATA SHEET

Job Title Wrapper and Tier

Date June 20, 1951

SKILL DEMANDS	Wts.	Rating
1. Training Time		
Less than 30 days	.20	20
1-3 months	.40	
3-6 months	.60	
2. Education		
Read & write	.15	
Post & Total wt. sheets	.83	83
Fill out reports	.150	
3. Complexity of Job		
Not complex (use simple tools)	.15	15
Semi-complex (requires definite mental alertness)	.83	
Complex (must figure pulley speeds or synchronize machinery)	.150	
EFFORT		
4. Endurance		
Not sustained	.5	
Ordinary	.28	
Constant	.50	50
5. Strength		
5-30 lbs	.5	
30-90 lbs	.28	
90-150 lbs	.50	50
TOTAL		218

RESPONSIBILITIES	Wts.	Rating
6. For Equipment		
Up to $200	.9	9
$200 to $1200	.36	
$1200 to $2400	.63	
$2400 to $5000	.90	
7. For Materials or Product.		
Up to $200	.9	
$200 to $1200	.36	36
$1200 to $2400	.63	
$2400 to $5000	.90	
8. For Safety of Others		
Minor Accident (no loss time)	.9	9
Serious (several weeks loss time)	.35	
Loss of limbs or other permanent disability	.63	
Fatality	.90	
9. For Work of Others		
None	.3	3
One or more	.30	
JOB CONDITIONS		
10. Working Conditions		
Best	.5	5
Average	.28	
Poorest	.50	
11. Hazards		
Non hazardous	.5	5
Slightly hazardous	.20	
Moderately "	.35	
Hazardous	.50	
TOTAL		67

POINT RATING FOR THIS JOB
(Sum of both Rating Columns) 285

RATED BY_____

CHECKED BY_____

JOB ANALYSIS DATA SHEET

Job Title Elevator Operator

Date June 20, 1951

SKILL DEMANDS	Wts	Rating
1. Training Time		
Less than 30 days	.20	20
1-3 months	.110	
3-6 months	.200	
2. Education		
Read & write	.15	15
Post & Total wt. sheets	.83	
Fill out reports	.150	
3. Complexity of Job		
Not complex (use simple tools)	.15	15
Semi-complex (requires definite mental alertness)	.83	
Complex (must figure pulley speeds or synchronize machinery)	.150	
EFFORT		
4. Endurance		
Not sustained	.5	5
Ordinary	.28	
Constant	.50	
5. Strength		
5-30 lbs	.5	
30-90 lbs	.28	28
90-150 lbs	.50	
TOTAL		83

RESPONSIBILITIES	Wts	Rating
6. For Equipment		
Up to $200	.9	
$200 to $1200	.36	36
$1200 to $2400	.63	
$2400 to $5000	.90	
7. For Materials or Product.		
Up to $200	.9	9
$200 to $1200	.36	
$1200 to $2400	.63	
$2400 to $5000	.90	
8. For Safety of Others		
Minor Accident (no loss time)	.9	
Serious (several weeks loss time)	.36	
Loss of limbs or other permanent disability	.63	
Fatality	.90	90
9. For Work of Others		
None	.3	3
One or more	.30	
JOB CONDITIONS		
10. Working Conditions		
Best	.5	
Average	.28	28
Poorest	.50	
11. Hazards		
Non hazardous	.5	
Slightly hazardous	.20	20
Moderately "	.35	
Hazardous	.50	
TOTAL		186

POINT RATING FOR THIS JOB
(Sum of both Rating Columns) 269

RATED BY _____

CHECKED BY _____

JOB ANALYSIS DATA SHEET

Job Title Coreman

Date June 20, 1951

SKILL DEMANDS	Wts.	Rating
1. Training Time		
Less than 30 days	.20	20
1-3 months	.40	
3-6 months	.60	
2. Education		
Read & write	.15	15
Post & Total wt. sheets	.83	
Fill out reports	.150	
3. Complexity of Job		
Not complex (use simple tools)	.15	15
Semi-complex (requires definite mental alertness)	.83	
Complex (must figure pulley speeds or synchronize machinery)	.150	
EFFORT		
4. Endurance		
Not sustained	.5	
Ordinary	.28	28
Constant	.50	
5. Strength		
5-30 lbs	.5	
30-90 lbs	.28	
90-150 lbs	.50	50
TOTAL		128

RESPONSIBILITIES	Wts.	Rating
6. For Equipment		
Up to $200	.9	9
$200 to $1200	.36	
$1200 to $2400	.63	
$2400 to $5000	.90	
7. For Materials or Product		
Up to $200	.9	9
$200 to $1200	.36	
$1200 to $2400	.63	
$2400 to $5000	.90	
8. For Safety of Others		
Minor Accident (no loss time)	.9	9
Serious (several weeks loss time)	.36	
Loss of limbs or other permanent disability	.63	
Fatality	.90	
9. For Work of Others		
None	.3	3
One or more	.30	
JOB CONDITIONS		
10. Working Conditions		
Best	.5	
Average	.20	
Poorest	.50	50
11. Hazards		
Non hazardous	.5	
Slightly hazardous	.20	20
Moderately "	.35	
Hazardous	.50	
TOTAL		100

POINT RATING FOR THIS JOB
(Sum of both Rating Columns) 228

RATED BY _____

CHECKED BY _____

JOB ANALYSIS DATA SHEET

Job Title Shipping Gang Laborer

Date June 20, 1951

SKILL DEMANDS	Wts	Rating
1. Training Time		
Less than 30 days	.20	20
1-3 months	.110	
3-6 months	.200	
2. Education		
Read & write	.15	15
Post & Total wt. sheets	.83	
Fill out reports	.150	
3. Complexity of Job		
Not complex (use simple tools)	.15	15
Semi-complex (requires definite mental alertness)	.83	
Complex (must figure pulley speeds or synchronize machinery)	.150	
EFFORT		
4. Endurance		
Not sustained	.5	
Ordinary	.28	
Constant	.50	50
5. Strength		
5-30 lbs	.5	
30-90 lbs	.28	
90-150 lbs	.50	50
TOTAL		150

RESPONSIBILITIES	Wts	Rating
6. For Equipment		
Up to $200	.9	9
$200 to $1200	.36	
$1200 to $2400	.63	
$2400 to $5000	.90	
7. For Materials or Product.		
Up to $200	.9	9
$200 to $1200	.36	
$1200 to $2400	.63	
$2400 to $5000	.90	
8. For Safety of Others		
Minor Accident (no loss time)	.9	
Serious (several weeks loss time)	.36	36
Loss of limbs or other permanent disability	.63	
Fatality	.90	
9. For Work of Others		
None	.3	3
One or more	.30	
JOB CONDITIONS		
10. Working Conditions		
Best	.5	
Average	.28	28
Poorest	.50	
11. Hazards		
Non hazardous	.5	
Slightly hazardous	.20	20
Moderately "	.35	
Hazardous	.50	
TOTAL		105

POINT RATING FOR THIS JOB (Sum of both Rating Columns) 255

RATED BY_____

CHECKED BY_____

JOB ANALYSIS DATA SHEET

Job Title Truck Driver **Date** June 20, 1951

SKILL DEMANDS	Wts	Rating
1. Training Time		
Less than 30 days	.20	20
1-3 months	.110	
3-6 months	.200	
2. Education		
Read & write	.15	
Post & Total wt. sheets	.83	83
Fill out reports	.150	
3. Complexity of Job		
Not complex (use simple tools)	.15	
Semi-complex (requires definite mental alertness)	.83	83
Complex (must figure pulley speeds or synchronize machinery)	.150	
EFFORT		
4. Endurance		
Not sustained	.5	
Ordinary	.28	28
Constant	.50	
5. Strength		
5-30 lbs	.5	
30-90 lbs	.28	
90-150 lbs	.50	50
TOTAL		264

RESPONSIBILITIES	Wts	Rating
6. For Equipment		
Up to $200	.9	
$200 to $1200	.36	
$1200 to $2400	.63	63
$2400 to $5000	.90	
7. For Materials or Product.		
Up to $200	.9	9
$200 to $1200	.36	
$1200 to $2400	.63	
$2400 to $5000	.90	
8. For Safety of Others		
Minor Accident (no loss time)	.9	
Serious (several weeks loss time)	.36	
Loss of limbs or other permanent disability	.63	
Fatality	.90	90
9. For Work of Others		
None	.3	3
One or more	.30	
JOB CONDITIONS		
10. Working Conditions		
Best	.5	
Average	.28	28
Poorest	.50	
11. Hazards		
Non hazardous	.5	
Slightly hazardous	.20	20
Moderately "	.35	
Hazardous	.50	
TOTAL		283

POINT RATING FOR THIS JOB (Sum of both Rating Columns) 477

RATED BY_____ CHECKED BY_____

JOB ANALYSIS DATA SHEET

Job Title Electric Truck Operator **Date** June 20, 1951

SKILL DEMANDS	Wts.	Rating
1. Training Time		
Less than 30 days	.20	20
1-3 months	.110	
3-6 months	.200	
2. Education		
Read & write	.15	
Post & Total wt. sheets	.83	83
Fill out reports	.150	
3. Complexity of Job		
Not complex (use simple tools)	.15	
Semi-complex (requires definite mental alertness)	.83	83
Complex (must figure pulley speeds or synchronise machinery)	.150	
EFFORT		
4. Endurance		
Not sustained	.5	
Ordinary	.28	28
Constant	.50	
5. Strength		
5-30 lbs	.5	
30-90 lbs	.26	
90-150 lbs	.50	50
TOTAL		264

RESPONSIBILITIES	Wts.	Rating
6. For Equipment		
Up to $200	.9	
$200 to $1200	.36	
$1200 to $2400	.63	63
$2400 to $5000	.90	
7. For Materials or Product.		
Up to $200	.9	9
$200 to $1200	.36	
$1200 to $2400	.63	
$2400 to $5000	.90	
8. For Safety of Others		
Minor Accident (no loss time)	.9	
Serious (several weeks loss time)	.36	36
Loss of limbs or other permanent disability	.63	
Fatality	.90	
9. For Work of Others		
None	.3	3
One or more	.30	
JOB CONDITIONS		
10. Working Conditions		
Best	.5	
Average	.28	28
Poorest	.50	
11. Hazards		
Non hazardous	.5	
Slightly hazardous	.20	20
Moderately "	.35	
Hazardous	.50	
TOTAL		159

POINT RATING FOR THIS JOB
(Sum of both Rating Columns) ..423.....

RATED BY_____ CHECKED BY_____

APPENDIX V

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