A WAGE STRUCTURE PLAN FOR ORDNANCE DEPOT INDIGENOUS PERSONNEL

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CHAPTER I

INTRODUCTION

The Ordnance Corps of the United States Army assumes a herculean logistical task in providing ordnance equipment to United States and Allied Forces throughout the world. The full utilization of indigenous personnel in ordnance depots abroad is oftentimes the only practical solution to manpower requirements. In the event of hostilities, whether limited or total, increased demands more than likely will be placed upon foreign governments for manpower assistance.

The use of military personnel for communications zone ordnance depot jobs is extremely limited today. Under war time conditions it could be assumed that, percentagewise, further military reductions would be effected. Civilian personnel offices have a primary interest in personnel procurement, grade structures, and pay schedules; however, the ordnance depot commanding officer has a direct responsibility and interest in the work, pay, job conditions, and morale of all personnel under his direction.

Under existing circumstances the commander of an ordnance depot overseas does not have a readily available means of ascertaining the relative monetary values of the

multitudinous jobs within his depot. He relies almost exclusively upon the civilian personnel offices of his next higher command for assistance and guidance concerning wage rates. Because of delays and errors due to the inadequate numbers of civilian personnel analysts available for wage rate evaluations, plus their lack of specific job knowledge about ordnance depot operations, the depot commander faces an unsatisfactory condition which he can do little to remedy.

It is the writer's purpose in this thesis to offer a method whereby indigenous personnel for ordnance depot supply and maintenance operations may be classified rapidly and accurately into several pay grades according to their knowledge, capabilities, and working conditions. This method, a "blue collar" job evaluation study of a prototype ordnance class II and IV depot,[1] may be used as a guide by depot commanders and/or their staffs to assist them in evaluating their personnel pay structure. The term "as a guide" implies that this thesis is not a wage structure plan or job evaluation program designed for a specific depot in a specific location. Rather, the material presented in this work is a sample of a method which can be employed

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[1]Class II and IV depots of the Ordnance Corps store, issue, receive, maintain, repair, and rebuild Ordnance general supplies such as army trucks, tanks, artillery, small arms, missiles, including all the parts and special equipment pertaining to their use.

effectively to install an equitable wage structure in an overseas ordnance depot.

In presenting this paper, the author first describes a general background of job evaluation methods, their uses, advantages and disadvantages, and how they are conducted. Then, based on data gathered from several ordnance depots in the United States and personal experience obtained from observing from a theater staff level the operations of several ordnance depots in Europe, a job evaluation program for a typical depot is performed. Source data for selecting and pricing key jobs were obtained from depots in the United States because "blue collar" jobs in Zone of Interior depots have been evaluated and wage rates for specific grades, depending upon the geographical area, have been established. This is not the case in overseas installations, even though depots have been in operation since World War II. Job descriptions and specifications for common, easily recognized, ordnance depot "blue collar" jobs were written, analyzed, and evaluated by the factor-comparison method of job evaluation. The end result of this job evaluation is a job comparison scale which can be used by ordnance overseas depots to readily establish an equitable wage structure for the jobs within any particular depot. An example of how to use the job comparison scale is made to illustrate how easily a job can be evaluated.

Lastly, a suggested wage curve which recommends wage grades and rate ranges is prepared, and its applications to ordnance depots, regardless of the specific country in which they are located, is explained. Standards of living and degrees of technological advancement vary in the different nations of the world. Utilization of indigenous personnel in those countries which have not kept pace industrially with the western civilizations is not practical except for the most simple menial tasks. Therefore, the use of this thesis as a guide for depot commanders is applicable for only those depots located in such countries as England, France, Italy, Japan, Australia, New Zealand, and similar cultures where skills, educational backgrounds, and literacy rates are comparable to those of the United States. Examples of "backward" areas would be New Guinea, sections of Africa, China, etc. The only solution to skilled manpower requirements for depot operations in these areas is the use of military units.

In summation, the depot commander, by using the procedures outlined in this thesis, has the practical means available to rectify his personnel problems as to wage rates and the resultant ill effects of inequitable wage payments.

CHAPTER II

A WAGE STRUCTURE PLAN

For many years the United States Army has had organizational military units such as Rebuild Battalions, Depot Companies, and Communication Zone Cellular Composite Units with specific missions assigned. For example, the Ordnance Automotive Rebuild Battalion has a strength of 748 officers and men with the following mission: "Establishes and operates communications zone, etc." The use of such an organization is obvious--the factor of operational control and mobility within the army are necessities in times of emergency. However, it has been apparent that as conditions become more settled, or "rear area" operations are effected, the use of military troops becomes less justifiable. It is not the attempt of this paper to criticize personnel staffing policies of overseas ordnance installations. The fact that thousands of French, Japanese, German, and other Nationals are on United States payrolls is self-evident proof that indigenous personnel are employed in several different positions with varying responsibilities and skill levels.

The organizational structures of ordnance installations are as varied as the number of installations.

Sub-depots and small detachments may employ as few as twenty-five civilians as contrasted with large storage and maintenance depots having payroll strengths of six and seven thousand.

Before developing the job evaluation program, the writer would like to highlight some background of the evolution of job evaluation, what it is designed to do, and its adoption by the armed forces. "The purpose of job evaluation is to determine what the rate of pay for one job should be in proper relation to the rates of pay for other jobs in the same plant."[1] Another explanation is as follows: "Job evaluation attempts to answer the question, 'What is each job worth in relation to other jobs in a plant or shop?' It deals with jobs, not with people doing these jobs."[2]

A brief look into the background of job evaluation reveals that the need of equities in pay of like jobs is not new. For example, in 1836 the government clerk in Washington, D.C., petitioned Congress for a systematic method in determining salaries of some 336 clerks employed. Congress was petitioned again in 1838 "so that all clerks performing like duties shall receive like salaries."[3]

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[1]Edward N. Hay, "The Attitude of the American Federation of Labor on Job Evaluation," Personnel Journal, XXVI (November, 1947), p. 163.

[2]Ibid.

[3]Philip W. Jones, Practical Job Evaluation (New York: John Wiley and Sons, 1948), p. 1.

However, the first origin of job evaluation *per se* dates back to the latter part of the nineteenth century when Frederick W. Taylor, the time and motion analyst, began job studies. Little attention was given to ratings of jobs until World War I. Because of

> . . . the difficulties of securing employees, training large groups of inexperienced workers, keeping them satisfied, and meeting other personnel problems, . . . job evaluation for the determination of equitable rates of pay began to receive a modicum of attention.[4]

By 1926, the four commonly used methods in use today were developed (See Appendix). These methods will be explained in more detail later. The factor-comparison method of evaluating jobs, the system which the writer has used in this paper, was the last of the four basic systems to be developed.

> At the Philadelphia Rapid Transit Company, Eugene J. Benge and others attempted to apply Lott's point system in rating jobs. They decided this method did not meet their needs and, as a result, drew up their own plan, which was called the factor-comparison method. This development occurred in 1926.[5]

The rise of unionism and resultant legislation gave additional impetus to a demand for more systematic wage determination, but it was World War II with the War Labor Board that increased interest so tremendously in job evaluation. This interest did not cease when hostilities were

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[4]E. Lanham, Job Evaluation (New York: McGraw-Hill Book Company, 1955), p. 8.

[5]Ibid.

over. "However one may regard it, job evaluation is with us. Its use greatly increased during the war and is continuing on the increase today."[6]

A wage administration plan was developed early in World War II for the War Department's civilian employees. The Federal Classification Act (Civil Service) evaluates jobs and sets salaries for approximately 43 per cent of the Army's professional, administrative, clerical employees. The remaining 57 per cent, known as Wage Board employees, are excluded from that Act. Members of this latter group are filling "primarily manual jobs."[7] The expressed policy of the army in designing its job evaluation program is to achieve the following objectives:

1. Like treatment as to pay will be applied to all positions which involve like work.
2. Pay rates shall bear a direct relationship to the level and skill and responsibility of the work performed.
3. Pay rates, insofar as they are determined by the Department for Wage Board jobs, shall reflect going rates for comparable work within defined geographical localities.[8]

The writer has used these same objectives as basic criteria in his wage structure plan.

The wage plan presented here falls into three general areas in the accomplishment of these objectives: (1) the

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[6]Edward N. Hay, "The Attitude of the American Federation of Labor," Personnel, XXVI (November, 1947), p. 164.

[7]William F. Sorensen, Jr., "Army Wage Administration for Civilian Jobs," Personnel, XXVI (March, 1950), p. 393.

[8]Ibid.

job analysis to include observation of the positions for ascertaining duties and preparing written descriptions of the job and specifications of the job; (2) the job evaluation itself, i.e., relating pay rates to the requirements and conditions of the job; and (3) the wage structure. In this paper the job analysis has been performed, for the most part, by various depot personnel job analysts in ordnance depots throughout the United States. As will be explained later, the writer's work in this area consisted of translating, condensing, and transferring job specifications and descriptions onto the forms which are adaptable to the factor-comparison method of job evaluation.

In most cases, job evaluation experts have considered job evaluation their private domain and have

> . . . done a proficient job in overglamorizing and mystifying with respect to contents, techniques, and application of job evaluation. Intimate association with job evaluation reveals, actually, that it is neither a scientific scheme nor a final answer to the age-old wage problem. More truthfully, it can be said that it is a systematic approach to a wage problem--a systematic approach that has common sense and good judgement as its most important elements.[9]

One of the first questions which arises when initiating a job evaluation program concerns which plan shall be used--(1) ranking system, (2) classification system, (3) point system, or (4) factor-comparison system. The factor-comparison method was chosen for this study because (a) a

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[9]Andrew J. Percival and Glen B. Gross, "Job Evaluation--A Case History," Harvard Business Review, XXIV (Summer, 1946), p. 466.

quantitative system divides jobs into classifications more readily; (b) an individual with only general knowledge as to specific jobs can compare more accurately jobs against one another than he can ascertain the value of a job based on job facts. Basing the value of a job on job facts rather than on job comparison is one of the fundamental differences between the point and the factor-comparison systems. The result of a factor-comparison method job evaluation study is a job-comparison scale which can be understood readily and can be used by supervisory personnel. "The most striking characteristic of the factor comparison method of job evaluation is the ease with which unlike jobs can be evaluated on the same scale."[10] (c) the scale can be utilized to price any number of jobs; and (d) the selection of correctly priced key jobs, one of the most important steps in the program, would be applicable to all types of Ordnance Class II and IV depots; (e) the Ordnance Corps has used a modified factor-comparison system and a point system to classify jobs. These methods shall be explained more in detail; (f) job descriptions and job specifications for the key jobs already have been written and adapt themselves for conversion to the forms used and recommended by job evaluation experts who have had excellent results in their work. The preparation of job descriptions and the preparation of

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[10]Edward N. Hay, "Characteristics of Factor Comparison Job-Evaluation," Personnel, XXII (May, 1946), p. 370.

specifications are two important steps in constructing a job comparison scale.

The present method of wage payments to employees in the various Ordnance Class II and IV depots throughout the United States consists of three wage schedules. The (1) Civil Service employees, who perform office and career type positions; (2) Wage Board Schedule employees, who perform work varying in skills from common labor to highly technical jobs; and (3) Wage Board Supervisory Schedule employees, who, in addition to performing skilled work, are utilized primarily in supervisory positions. For a typical pay schedule reference is made to an anonymous mid-western Ordnance Depot (See Figure 1).

The two schedules with which this study is concerned are the Wage Board Schedule, hereafter referred to as WB wages, and the Wage Board Supervisory Schedule, which shall be called WBS wages. A typical depot has as many as twenty to twenty-five WB and twelve to fifteen WBS rates. Considering the four step increases in each rate, there may be one hundred and sixty different rates being paid to depot employees--exclusive of "career" Civil Service personnel. Therefore, an obvious need for overseas operations would be a reduction of the administrative loads caused by so many different grades and steps. The steps are (1) hiring wage, (2) six month automatic wage increases, (3) twelve month

PAY SCHEDULES

ERIE ORDNANCE DEPOT

17 DEC. 1956

FEDERAL EMPLOYEES SALARY INCREASE ACT. 1955								
GENERAL SCHEDULE								
GRADE	a	b	c	d	e	f	g	INCR
1	$ 2690 1.29+	$2775 1.33+	$2860 1.38-	$2945 1.42-	$3030 1.46-	$3115 1.50-	$3200 1.54-	85
2	2960 1.42+	3045 1.46+	3130 1.50+	3215 1.55-	3300 1.59-	3385 1.63-	3470 1.67-	85
3	3175 1.53-	3260 1.57-	3345 1.61-	3430 1.65-	3515 1.69-	3600 1.73+	3685 1.77+	85
4	3415 1.64+	3500 1.68+	3585 1.72+	3670 1.76+	3755 1.81-	3840 1.85-	3925 1.89-	85
5	3670 1.76+	3805 1.83-	3940 1.89+	4075 1.96-	4210 2.02+	4345 2.09-	4480 2.15+	135
6	4080 1.96+	4215 2.03-	4350 2.09+	4485 2.16-	4620 2.22+	4755 2.29-	4890 2.35+	135
7	4525 2.18-	4660 2.24+	4795 2.31-	4930 2.37+	5065 2.44-	5200 2.50+	5335 2.56+	135
8	4970 2.39-	5105 2.45+	5240 2.52-	5375 2.58+	5510 2.65-	5645 2.71+	5780 2.78-	135
9	5440 2.62-	5575 2.68+	5710 2.75-	5845 2.81+	5980 2.88-	6115 2.94-	6250 3.00+	135
10	5915 2.84+	6050 2.91-	6185 2.97+	6320 3.04-	6455 3.10+	6590 3.17-	6725 3.23+	135
11	6390 3.07+	6605 3.18-	6820 3.28-	7035 3.38+	7250 3.49-	7465 3.59-	. . .	215
12	7570 3.64-	7785 3.74+	8000 3.85-	8215 3.95-	8430 4.05+	8645 4.16-	. . .	215
13	8990 4.32+	9205 4.43-	9420 4.53-	9635 4.63+	9850 4.74-	10065 4.84-	. . .	215
14	10320 4.96+	10535 5.06+	10750 5.17-	10965 5.27+	11180 5.38-	11395 5.48-	. . .	215
15	11610 5.58+	11880 5.71+	12150 5.84+	12420 5.97+	12690 6.10+	. . .	. . .	270
16	12900 6.20+	13115 6.31-	13330 6.41-	13545 6.51+	13760 6.62-	. . .	. . .	215
17	13975 6.72-	14190 6.82-	14405 6.93-	14620 7.03-	. . .	. . .	. . .	215
18	14800 7.12-	. . .	. . .	. . .	. . .	. . .	. . .	

REGULAR WAGE BOARD SCD.				
EFFECTIVE 17 DEC. 1956				
WB	1	2	3	4
1	1.54	1.62	1.70	1.78
2	1.59	1.67	1.75	1.84
3	1.63	1.72	1.81	1.89
4	1.68	1.77	1.86	1.95
5	1.73	1.82	1.91	2.00
6	1.78	1.87	1.96	2.06
7	1.82	1.92	2.02	2.11
8	1.87	1.97	2.07	2.17
9	1.92	2.02	2.12	2.22
10	1.97	2.07	2.17	2.28
11	2.00	2.11	2.22	2.32
12	2.05	2.16	2.27	2.38
13	2.10	2.21	2.32	2.43
14	2.15	2.26	2.37	2.49
15	2.19	2.31	2.43	2.54
16	2.24	2.36	2.48	2.60
17	2.29	2.41	2.53	2.65
18	2.34	2.46	2.58	2.71
19	2.38	2.51	2.64	2.76
20	2.43	2.56	2.69	2.82
21	2.48	2.61	2.74	2.87
22	2.53	2.66	2.79	2.93
23	2.57	2.71	2.85	2.98
24	2.62	2.76	2.90	3.04

SUPERVISORY WAGE SCHEDULE				
EFFECTIVE 17 DEC. 1956				
WB-S	1	2	3	4
1	2.09	2.20	2.31	2.42
2	2.19	2.30	2.42	2.53
3	2.28	2.40	2.52	2.64
4	2.38	2.50	2.63	2.75
5	2.47	2.60	2.73	2.86
6	2.56	2.69	2.82	2.96
7	2.65	2.79	2.93	3.07
8	2.75	2.89	3.03	3.18
9	2.86	3.01	3.16	3.31
10	3.03	3.19	3.35	3.51
11	3.20	3.37	3.54	3.71
12	3.37	3.55	3.73	3.91
13	3.55	3.74	3.93	4.11
14	3.71	3.91	4.11	4.30
15	3.88	4.08	4.28	4.49
16	4.08	4.29	4.50	4.72
17	4.28	4.50	4.73	4.95

WB and WB-S
SHIFT DIFFERENTIALS:

2nd Shift 8¢ Per Hr.
3rd Shift 10¢ Per Hr.

Figure 1. Ordnance Depot Pay Schedule.

automatic wage increases, and (4) a merit increase based on supervisory work performance reports.

In a letter about this thesis from Mr. Sedrel, Director of the Ordnance Civilian Personnel Agency, he stated,

> In the situation you describe, eight non-supervisory Wage Board grades with probably an equal number of WBS grade would be adequate. . . . step rates, three; in hiring, going, and merit would probably be adequate.

This number of grades and steps would provide for a total of forty-eight separate rates. The recommended number of grades in this study is thirteen, which with the steps as suggested by Mr. Sedrel, total thirty-nine wage rates. This number should not be administratively excessive under typical overseas operations.

In the writer's evaluation program, the WB and WBS jobs have been integrated. A brief explanation as to the methods currently used in the Ordnance Depots as opposed to the method employed in this paper will clarify the use of a single rate.

The WB evaluation program[11] is based on a modified factor-comparison weighted-in-points plan which was broken down in the following manner:

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[11] Manual of Evaluation Standards for Civilian Jobs in the War Department (Washington, D.C.: U. S. Government Printing Office, April, 1947).

Factors	Points
Experience and Training	600
Responsibility	400
Application	200
Physical Demand	200
Working Conditions	200
Total	1,600

The five factors are weighted, respectively, 3, 2, 1, 1, and 1,[12] as above illustrated.[13]

The WBS system of evaluation, basically a point method program, awarded "credits" on the following factors: (1) level of work directed; (2) volume of operation, i.e., the number of people supervised (by wage range); (3) the nature of unrelated work or job complexity; and (4) the supervisory duties, general foreman, foreman, supervisor, or leader.

Upper limits of the WB program preclude a valid evaluation of supervisory responsibilities; therefore, this necessitates establishing another program for employees with supervisory responsibilities. The exclusion of maximum points in this study permits the integration of WB and WBS

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[12]Sorensen, p. 393.

[13]There is no reference data available to the author as to the determination of the points awarded the different factors in Mr. Sorensen's article. It is assumed that the points were composite judgments and the relative weights are comparable to the weights typically assigned in most job evaluation plans of this type.

personnel, and as shall be illustrated later, the comparative difference of supervisory jobs with other supervisory jobs or non-supervisory jobs is easily discernible.

CHAPTER III

PERFORMING THE JOB EVALUATION

As previously stated, correctly priced key jobs are of prime importance. To arrive at the selection of key jobs, the personnel officers of two different depots furnished job descriptions and specifications of two typical jobs in each pay grade of their WB and WBS schedules. Both of these personnel officers have had considerable experience in job evaluation techniques and, between the two of them, have over twenty-five years of experience in personnel administration. The author has had twelve years of experience in Ordnance Operations. Six of these years have been spent overseas. In the selection of initial jobs to be screened, the author and each of these personnel officers, with their assistants, acted as committees in reviewing the jobs. The committees chose jobs which are standard, common, and easily recognizable jobs in an Ordnance depot. For example, WAREHOUSEMAN, TRUCK DRIVER, or PROCESSING INSPECTOR are jobs which an Ordnance officer can identify and envision without difficulty, and these jobs are performed in all depots of any size. Approximately one hundred and thirty-five jobs of the entire wage range were screened, and Table I shows the jobs selected, by title and pay grades, for initial

screening. From this group another screening would have to be made to select a smaller, more workable number of key jobs.

The problem of job pricing was the next issue. Depots throughout the country conduct wage surveys at least every two years to establish depot wage rates comparable to the surrounding area. As an example of the different wages paid for the same WB and WBS grades, Figure 2 illustrates the wages paid by a midwestern depot as against the wages paid by a southern depot.

The wages from these depots were averaged, and Table I shows the different wages paid. There are thirty-one major Ordnance Class II and IV depots located in various sections of the United States. To arrive at a representative figure for the average United States wage for WB and WBS grades, selections were made from five of these depots to include samples from the East, Midwest, and South. In some instances, due to the variance of WB versus WBS wages (Example: STOCK KEEPER LEAD FOREMAN), the averages would exclude the correct pricing of a job in relation to the other positions (See Table I).

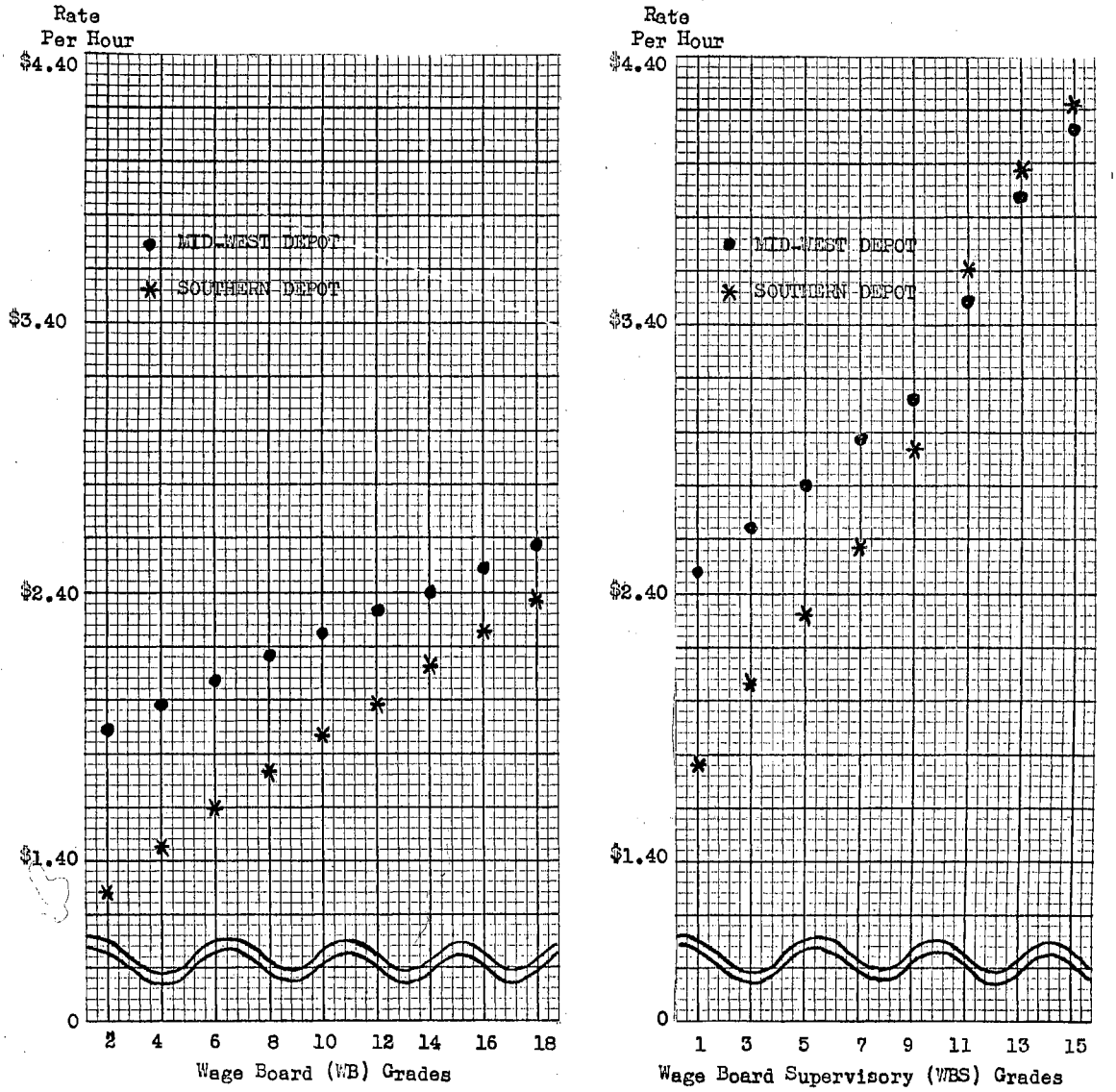

Figure 2. Wage Board Wage Rates, Grades Two Through Eighteen, and Wage Board Supervisory Wage Rates, Grades One Through Fifteen, of a Representative Southern and Midwest Ordnance Depot, 1957 (Data compiled from semi-annual pay schedules).

TABLE I

WAGE BOARD AND WAGE BOARD SUPERVISORY WAGE RATES FOR SELECTED JOBS IN REPRESENTATIVE ORDNANCE DEPOTS IN THE U.S.A.

Job Title	Rank WB WBS*	Midwest Depot	Midwest Depot	Eastern Depot	Southwest Depot	Eastern Seaboard
WRAPPER HAND	02	1.90	1.67	1.49	1.27	1.83
FREIGHT HANDLER	03	1.94	1.72	1.53	1.36	1.88
WAREHOUSEMAN, BIN	04	1.99	1.77	1.57	1.45	1.93
TRUCK DRIVER	04	1.99	1.77	1.57	1.45	1.93
WAREHOUSEMAN, GENERAL	05	2.03	1.82	1.60	1.54	1.99
AUTOMOTIVE EQUIPMENT OPERATOR	06	2.07	1.87	1.64	1.61	2.04
FORK LIFT OPERATOR	06	2.07	1.87	1.64	1.61	2.04
PAINTER	07	2.11	1.92	1.68	1.67	2.09
LIQUID-BLASTER OPERATOR	07	2.11	1.92	1.68	1.67	2.09
FORK LIFT OPERATOR	08	2.15	1.97	1.71	1.74	2.14
LABORER LEADER	09	2.20	2.02	1.75	1.80	2.19
PACKER-CRATER LEADER	10	2.24	2.07	1.79	1.87	2.24
PAINTER	11	2.28	2.11	1.82	1.94	2.29

TABLE I--Continued

Job Title	Rank WB WBS*	Midwest Depot	Midwest Depot	Eastern Depot	Southwest Depot	Eastern Seaboard
PROCESSING INSPECTOR	12	2.32	2.16	1.86	2.00	2.34
PRODUCTION PLANNER	13	2.36	2.21	1.90	2.07	2.39
PRODUCTION EXPEDITER LEADER	14	2.40	2.26	1.93	2.13	2.44
AUTOMOTIVE MECHANIC	15	2.45	2.31	1.97	2.20	2.49
LABORER LEAD FOREMAN	1*	2.47	2.20	1.94	1.73	2.38
CRANE OPERATOR	16	2.49	2.36	2.01	2.26	2.53
SMALL ARMS INSPECTOR	17	2.53	2.41	2.05	2.32	2.57
STOCK KEEPER LEAD FOREMAN	2*	2.55	2.30	2.02	1.91	2.50
WELDER LEADER, ACET. & ELEC.	18	2.60	2.46	2.08	2.38	2.61
PROCESSOR LEAD FOREMAN	3*	2.64	2.40	2.09	2.09	2.61
MACHINIST	19	2.66	2.51	2.12	2.44	2.65
WAREHOUSEMAN F'MAN BULK	4*	2.72	2.50	2.17	2.22	2.71
TOOL, DIE & GAGE MAKER	20	2.73	2.56	2.16	2.50	2.69
AUTOMOTIVE EQUIPMENT INSPR.	21	2.80	2.61	2.19	2.56	2.73
WAREHOUSEMAN F'MAN GENERAL	5*	2.81	2.60	2.24	2.35	2.81

TABLE I--Continued

Job Title	Rank WB WBS*	Midwest Depot	Midwest Depot	Eastern Depot	Southwest Depot	Eastern Seaboard
PACKER LEAD FOREMAN	6*	2.89	2.69	2.31	2.49	2.91
AUTOMOTIVE MECHANIC LEAD F'MAN	7*	2.97	2.79	2.39	2.62	3.01
MECHANICAL EQUIP. PROCESSOR F'MAN	8*	3.06	2.89	2.46	2.75	3.11
WAREHOUSEMAN GENERAL FOREMAN	9*	3.16	3.01	2.56	2.90	3.21
IDENTIFICATION AND RECEIVING GENERAL FOREMAN	10*	3.35	3.19	2.72	3.07	3.41
WAREHOUSEMAN ASS'T GENERAL FOREMAN (VEHICLES)	11*	3.54	3.37	2.87	3.25	3.60
PACKING & PROCESSING GEN'L F'MAN	12*	3.73	3.55	3.02	3.42	3.79
SERVICE SHOPS GEN'L FOREMAN	13*	3.92	3.74	3.18	3.60	3.98
MACHINE SHOP & METAL PROCESSING GENERAL FOREMAN	15*	4.18	4.08	3.59	4.00	4.22
FIRE CONTROL SYSTEMS, MAINTENANCE GENERAL FOREMAN	16*	4.34	4.29	3.84	4.25	4.36

* Data secured from civilian personnel officers of various Ordnance Depots in the United States.

To have a composite and understandable rating scale, the next step was to select from the thirty-eight jobs listed on Table I a group of jobs with the following: (1) the duties of the job easily understood by depot command and staff personnel, (2) priced with sufficient money difference to make a practical scale and subsequent wage structure, (3) varied to permit comparisons of mental skill and physical requirements plus responsibilities and working conditions and comparisons distinguishable within these factors.

After a review of the descriptions and specifications, the jobs shown on Table II were selected. At this time it was necessary to reanalyze all of these jobs and rewrite the job descriptions and specifications onto the forms used in this job evaluation. All of the sixteen jobs finally selected are common to Ordnance Depot operations. Further, these jobs incorporate the gamut of knowledge, skills, responsibilities (supervision), physical efforts, and different working conditions normally found in an Ordnance Depot. They range in skill requirements from those of a machinist to the relatively minor skill requirements of a dock hand; and the supervisory responsibilities vary from those of a foreman exercising supervision over a hundred and fifty skilled jobs to those of the worker who performs the non-supervisory task of wrapping packages all day. (See Appendix, pages 51 through 66.)

TABLE II

RANKING OF SIXTEEN TENTATIVE WAGE BOARD AND WAGE BOARD SUPERVISORY KEY JOBS BY FACTORS

Job	Mental Requirements	Skill	Physical Requirements	Responsibility	Working Conditions
AUTOMOTIVE MECHANIC	9	7	5	11	3
FORK LIFT OPERATOR	10	10	8	15	1
FREIGHT HANDLER	15	16	1	16	2
LABORER LEADER	11	13	4	7	6
LIQUID BLASTER OPERATOR	12	14	6	12	5
MACHINIST	7	1	10	10	10
MECHANICAL EQUIPMENT PROCESSOR F'MAN	3	3	15	3	15
IDENTIFICATION AND RECEIVING GEN'L F'MAN	1	5	16	2	16
PROCESSING INSPECTOR	5	9	12	6	9
PRODUCTION EXPEDITER LEADER	8	8	9	8	8
SERVICE SHOPS GENERAL FOREMAN	2	2	14	1	14
SMALL ARMS INSPECTOR	6	4	11	5	12
TRUCK DRIVER	13	11	7	14	7

TABLE II--Continued

Job	Mental Requirements	Skill	Physical Requirements	Responsibility	Working Conditions
WAREHOUSEMAN	14	12	2	9	11
WAREHOUSE FOREMAN	4	6	13	4	13
WRAPPER HAND	16	15	3	3	4

The jobs then had to be ranked by the factors of mental skill and physical requirements, responsibilities, and working conditions. Normally, this process is done by separate committees pooling their judgments. In this case, the various factors were ranked upon three separate occasions by the writer as the formation of a ranking committee was not feasible for the purposes of ranking these jobs for this study. However, in the implementation of this plan in an overseas depot, committees must be established to perform this factorial ranking, which is an important phase in the factor-comparison method of job evaluation. The result of these rankings is shown on Table II. The next step was to apportion, by factors, the present going rates of the key jobs. As in the case of factorial ranking, the writer, in lieu of a committee, performed this task. In an overseas depot a committee, usually of five members, would perform this phase of the job evaluation program. As to the technique of the committee system of rankings and rate assignments, Otis and Leukart stated the following:

> It has been recommended that the rankings be repeated weekly until each member of the committee has ranked the jobs three times. It is also important to have each person assign the rates to the jobs several times to obtain an average of his own assignment of rates.[1]

This process again was based on judgment. Having accomplished this, the rates were reconciled, adjusted, and

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[1]Jay L. Otis and Richard H. Leukart, Job Evaluation (New York: Prentice-Hall, Inc., 1954), p. 183.

TABLE III

DISTRIBUTION OF WAGE BOARD AND WAGE BOARD SUPERVISORY KEY JOB PRESENT GOING WAGE RATES ACCORDING TO RANKS

Job	Present Rate	Mental Requirements	Rank	Skill	Rank	Physical Requirements	Rank	Responsibility	Rank	Working Conditions	Rank
AUTOMOTIVE MECHANIC	2.29	.47	9	.69	7	.46	5	.28	11	.39	3
FORK LIFT OPERATOR	1.94	.44	10	.53	10	.28	8	.19	15	.47	1
FREIGHT HANDLER	1.69	.26	15	.28	16	.62	1	.13	16	.40	2
LABORER LEADER	1.99	.44	11	.32	13	.50	4	.42	7	.33	6
*LIQUID BLASTER OPERATOR	2.09	.43	12	.48	14	.45	6	.23	12	.35	5
MACHINIST	2.48	.62	7	1.07	1	.24	10	.30	10	.25	10
MECHANICAL EQUIPMENT PROCESSOR FOREMAN	2.85	.76	3	.95	3	.20	15	.74	3	.20	15
IDENTIFICATION AND RECEIVING GEN'L FOR'M	3.14	.95	1	.90	5	.18	16	.91	2	.20	16
PROCESSING INSPECTOR	2.13	.68	5	.54	9	.21	12	.43	6	.27	9
PRODUCTION EXPEDITER LEADER	2.23	.58	8	.68	8	.27	9	.41	8	.29	8

TABLE III--Continued

Job	Present Rate	Mental Requirements	Rank	Skill	Rank	Physical Requirements	Rank	Responsibility	Rank	Working Conditions	Rank
SERVICE SHOPS GENERAL FOREMAN	3.72	.91	2	.97	2	.20	14	1.44	1	.20	14
*SMALL ARMS INSPECTOR	2.36	.65	6	.93	4	.22	11	.49	5	.22	12
TRUCK DRIVER	1.74	.42	13	.51	11	.30	7	.20	14	.31	7
WAREHOUSEMAN	1.80	.28	14	.35	12	.56	2	.35	9	.24	11
WAREHOUSE FOREMAN	2.56	.73	4	.90	6	.20	13	.52	4	.21	13
WRAPPER HAND	1.63	.20	16	.30	15	.55	3	.21	13	.37	4

* These two jobs did not seem to be in line when comparing their relative rankings in each of the five factors with the going rate of pay received.

redistributed by the rank of each factor. Table III illustrates this step. Careful examination of this table reveals that the rankings of the LIQUID BLASTER OPERATOR and SMALL ARMS INSPECTOR do not correspond with the monetary rates of the different factors. For the purposes of this study, these jobs are discarded as key jobs because (1) when regional rates were averaged, the job was priced incorrectly or (2) the rankings assigned were in error.

This situation is commonplace in factor-comparison job evaluation work. Upon reexamination the two jobs indicated were ranked according to their merits; therefore, it is logical to conclude that the present rates of the jobs are out of line. Again, the writer wishes to point out that the discarding of key jobs is not unusual, and "a key job which cannot be brought in line is either overpriced or underpriced and should be eliminated from the scale."[2]

The factor-comparison rating scale was constructed (see Figure 3). Use of the scale can be seen by the following example. Using the job description of the BIN WAREHOUSEMAN (Figure 4), the mental requirements are slightly less than the WAREHOUSEMAN; skill requirements are approximately the same; physical requirements are greater than AUTOMOTIVE MECHANIC but less than WRAPPER HAND; working conditions are better than the WAREHOUSEMAN but not as favorable as the

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[2]Ibid.

MECHANICAL EQUIPMENT FOREMAN (as these positions are both warehousing jobs, the factor of responsibility is about the same; however, the BIN WAREHOUSEMAN has a slightly less responsible job). Having arrived at these comparisons, one prices the job as mental, .27; skill, .35; physical, .49; responsibility, .34; and working conditions, .22, for a total of $1.67.

Cents	Mental Effort	Skill	Physical Effort	Responsibility	Working Conditions
110					
109					
108					
107		Machinist			
106					
105					
104					
103					
102					
101					
100					
99					
98					
97					
96					
95	Identification & Receiving General Foreman	Mechanical Equipment Processing Foreman			
94					
93					
92					
91				Identification & Receiving General Foreman	
90		Identification & Receiving General Foreman			
89					
88					

Figure 3. Job Comparison Scale for an Ordnance Class II and IV Depot Overseas.

Cents	Mental Effort	Skill	Physical Effort	Responsibility	Working Conditions
87					
86					
85					
84					
83					
82					
81					
80					
79					
78					
77					
76	Mechanical Equipment Processing Foreman				
75					
74				Mechanical Equipment Processing Foreman	
73					
72					
71					
70					
69		Automotive Mechanic			
68	Processing Inspector	Production Expediter Leader			
67					
66					
65					

Figure 3--Continued

Cents	Mental Effort	Skill	Physical Effort	Responsibility	Working Conditions
64					
63					
62	Machinist		Freight Handler		
61					
60					
59					
58	Production Expediter Leader				
57					
56			Warehouseman		
55			Wrapper Hand		
54		Processing Inspector			
53		Fork Lift Operator			
52					
51		Truck Driver			
50					
49					
48					
47	Automotive Mechanic				
46			Automotive Mechanic		
45					
44	Fork Lift Operator				

Figure 3--Continued

Cents	Mental Effort	Skill	Physical Effort	Responsibility	Working Conditions
43				Processing Inspector	
42	Truck Driver				
41				Production Expediter Leader	
40					Freight Handler
39					Automotive Mechanic
38					Wrapper Hand
37					
36					
35		Warehouseman		Warehouseman	
34					
33					
32					
31					Truck Driver
30		Wrapper Hand	Truck Driver	Machinist	
29					Production Expediter Leader
28	Warehouseman	Freight Handler	Fork Lift Operator	Automotive Mechanic	
27			Production Expediter Leader		Processing Inspector
26	Freight Handler				
25					Machinist
24			Machinist		Warehouseman

Figure 3--Continued

Cents	Mental Effort	Skill	Physical Effort	Responsibility	Working Conditions
23					
22					
21			Processing Inspector	Wrapper Hand	
20	Wrapper Hand		Mechanical Equipment Processing	Truck Driver	Mechanical Equipment Processing
19				Fork Lift Operator	
18			Identification and Receiving General Foreman		
17					
16					
15					
14					
13				Freight Handler	
12					
11					
10					
9					
8					
7					
6					
5					
4					
3					
2					
1					

Figure 3--Continued

JOB SPECIFICATION

Job Title BIN WAREHOUSEMAN 1.74 Alternate Title _____ Dept _____ Normal Force _____ Date _____

Duties: Under the supervision of a GENERAL WAREHOUSEMAN the BIN WAREHOUSEMAN picks binned materiel for shipment or issue by checking furnished documents as to nomenclature, code and quantity of materiel to be picked. May use simple arithmetical computations to ascertain correct number of package to be picked thereby avoiding broken packages and item counts. Replenishes bins by checking stock against predesignated locations. Observes condition of stock for deterioration. Performs cleaning up of area, segregation, stacking old cartons, and other such work as directed or assigned.

MENTAL REQUIREMENTS	SKILL REQUIREMENTS	PHYSICAL FACTORS	RESPONSIBILITIES	WORK CONDITIONS
8 years education Special Education: None Kind of work knowledge: Storekeeping location systems and bin locations Mathematics used: Simple arithmetic X Reads orders ___ Prepares records ___ Instructs others X Rec's constant sup'v'n. ___ Monotony ___ Distratctions Pers. qualities needed	Kind: X Dexterity Inexperienced—time to learn Three days Time for proficiency Six weeks Desirable prior exper.: Storekeeping Precision or work limits None Trains for: WAREHOUSE FOREMAN	Kind of physical effort Light lifting of bin parts - one-half to ten pounds. Continuous bending, reaching, stooping. May use ladders or portable staircase for high bin location picking Operation: ___ Repetitive X Varied ___ Intermittent ___ Semi-auto. Age limits 18 to 60 Min. height 5' 6" Sex: M ___ X ___ or F ___ X Much fatigue X Very active work ___ Great strength X Good eyesight ___ Color discrimination Other physical factors	For equipment None For tools None For material To see the materiel correctly in place or it represents a loss For records None For work of others None Property For savings—how: Insuring the materiel incorrectly stored (a loss) is correctly placed	Place of work Warehouse bin, usually the most clean and pleasant of Ordnance storage areas Type Labor Surroundings Inside building Atmosphere Bin warehouse intercom Illumination Excellent Hazards None Other factors

REMARKS:
Symbols X to indicate; XX to stress; P, preferred; R, required. Show percent or amount.

Prepared by _____ Approved _____

Figure 4. Job Specification, Hourly Employees

CHAPTER IV

THE RATE STRUCTURE

With a rating scale and the average rates of jobs, a wage curve can be constructed. In discussing the functions of job evaluation, Sidney C. Sufrin, an economist, stated that after ascertaining the wages, conditions of employment for skills, etc., "it seeks to develop in the firm a job hierarchy or classification. . . wages and conditions of employment which adequately reflect the conditions of the market (labor market)."[1] Observation of Figure 2 again reveals an averaged curve would not be a straight line but rather a relatively flat curve for WB jobs as compared to a steep curve for WBS jobs. This suggests a base rate curve as shown on Figure 5.

The questions which arise are as follows: How many grades should be made? How many steps in each grade should be considered? What amount of overlap between grades is best suited for the over-all wage structure? Should there be set percentage step increases? "Some lapping over of money ranges is desirable primarily for merit rating but

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[1]Sidney C. Sufrin, "An Economist Looks at Job Evaluation," Personnel, XXIII (March, 1947), p. 302.

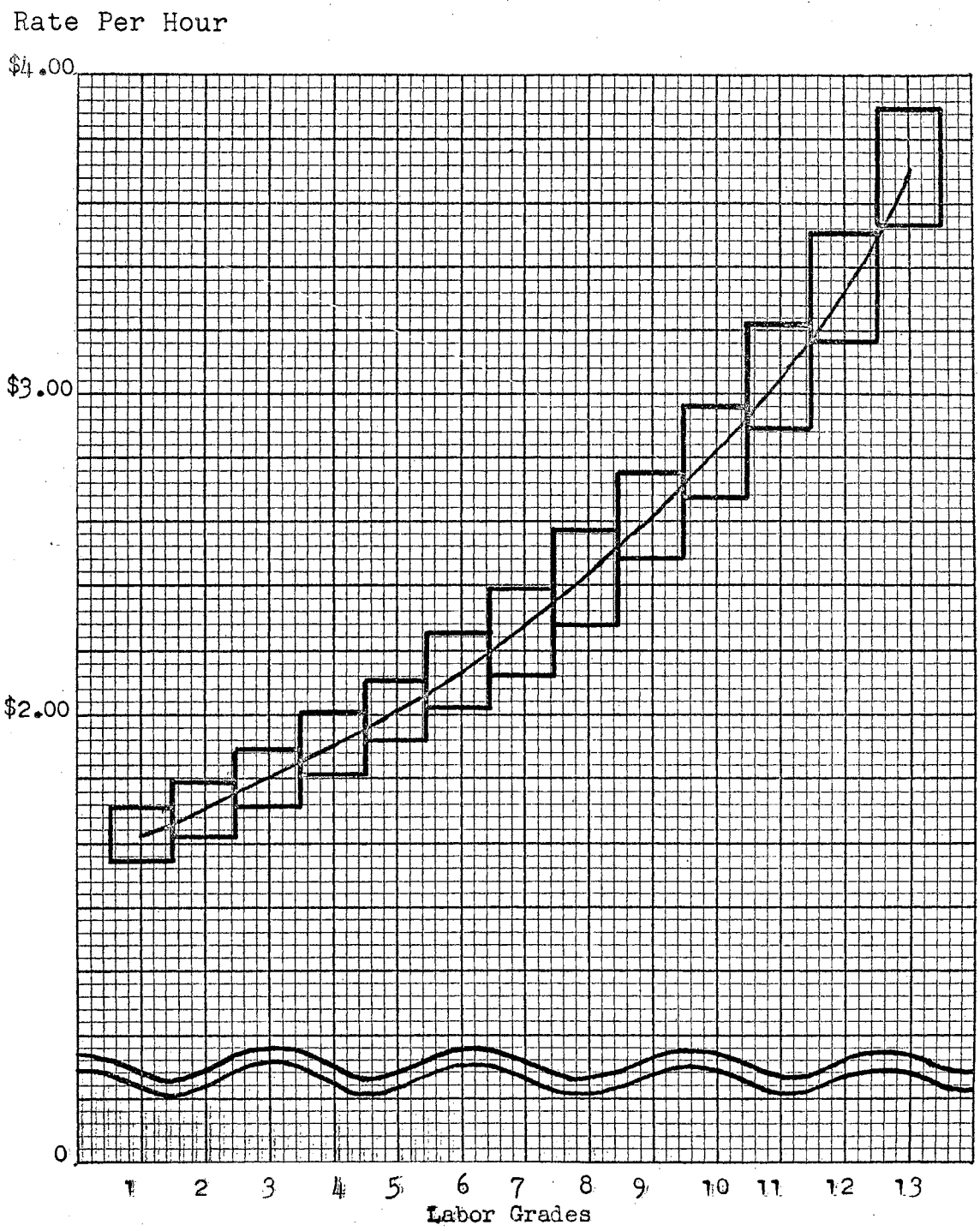

Figure 5. Wage Curve and Suggested Grade Classifications for an Ordnance Class II and IV Depot Overseas (Plotted from Data in Table IV).

also for flexibility."[2] Another viewpoint on overlap is as follows:

> A reasonable amount of overlap can be justified in most cases. The experienced worker in one class often is worth as much to the organization as the beginning worker in the next higher class. Sometimes only a few points of difference may cause a job to fall into one class or another. Some overlap in rates, therefore, tends to reduce the apparent harshness of the dividing points.[3]

As previously stated, thirteen grades were made, as this number provided for overlap in the lower grades without the disadvantage of a specific money rate being applicable to more than two grades. It would not be possible for a worker to be paid a higher rate than another worker two grades up the ladder. This is an important wage consideration for morale purposes.

The next question, i.e., how many steps, was resolved by Mr. Sedrel, Director, Ordnance Civilian Personnel Agency. He believes, as does the writer, that three steps within each grade are adequate. The first step is a starting or hiring rate. The second step is an automatic raise after a specified period of satisfactory employment; usually a six months period is used for the time interval in awarding this raise. The third step, a merit raise, is dependent upon a supervisory recommendation. Therefore, the incentive

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[2]Charles W. Lytle, Job Evaluation Methods (New York: Ronald Press Company, 1954), p. 273.

[3]E. Lanham, Job Evaluation (New York: McGraw-Hill Book Company, Inc., 1955).

objectives desired in the pay structure are obtained with a minimum of administration, and the meanings of these three steps are no mystery to the workers. Three steps can incorporate the wage incentives desired without overburdening the pay administration. The use of a percentage figure rather than a set amount for each step as either an automatic raise or merit raise is easily understood by workers and maintains the slope of the wage curve. It is apparent that a set monetary amount, save five cents, would mean much more to the worker earning $1.00 an hour as opposed to the man earning $3.50 an hour. "If the desire of those in charge is to make it possible for each worker to feel that there is the possibility of an appreciable increase in wages, then a range using a percentage basis is desirable."[4] Also, "where the difference in difficulty level is not great, the use of the same 'money limit' for the rate range at each difficulty level is recommended."[5] In the wage structure presented, Table IV, the same set amount for the rate range at each grade would be disadvantageous for the morale, incentives, and motivation of those employees in the higher wage levels. Therefore, as a guide, the writer suggests a five per cent increase of the base rate.

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[4]Jay L. Otis and Richard H. Leukart, Job Evaluation (New York: Prentice-Hall, Inc., 1954), p. 453.

[5]Ibid.

TABLE IV

SUGGESTED GRADES, BASE WAGE RATES, AND GRADE RANGES FOR AN ORDNANCE CLASS II AND IV DEPOT OVERSEAS

Job Grade	Base Wage Rate	Grade Wage Range
1	$1.63	$1.55 - $1.71
2	1.70	1.62 - 1.78
3	1.80	1.71 - 1.89
4	1.90	1.80 - 2.00
5	2.00	1.90 - 2.10
6	2.13	2.02 - 2.24
7	2.28	2.16 - 2.40
8	2.44	2.31 - 2.57
9	2.62	2.49 - 2.75
10	2.81	2.67 - 2.95
11	3.06	2.91 - 3.21
12	3.34	3.18 - 3.50
13	3.70	3.52 - 3.88

CHAPTER V

APPLICATIONS OF THE JOB EVALUATION STUDY

A personnel survey conducted in Communications Zone (France) USAREUR[1] brought out the following:

> A fourth area which has considerable influence on the building and retention of an efficient and satisfied work force is concerned with management, direction, and utilization of workers after their initial assignment. Management aspects include evaluation and improvement of worker performance. . . . This entire area is based upon three central elements: First, the degree to which command, from the lowest supervisory level to installation (depot) and section (area) commands, recognizes and discharges its responsibility in the management of workers; second, the degree to which the participation of the work force is obtained; and third, the effectiveness of the staff assistance furnished management officials by the Civilian Personnel Office staff.

This job evaluation study, used as a guide by installation commanders and civil personnel, can provide a standard to assist in initial placements, proper evaluation of job rates which is a key to efficient employee participation, and supervision controls (through supervisory participation in job evaluation) of operations throughout the installation.

The rating scale, a final product of this job evaluation plan, is designed to enable commanders interested in

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[1]Communications Zone USAREUR is the logistical support area for the U. S. Army, Europe.

the welfare of their workers and organizations to determine the relative difficulty and resultant worth of jobs being performed. As one of the functions of the commander, an executive, he is vitally concerned with obtaining and maintaining the maximum efforts from members of his organization. Job evaluation is one of his most effective means of accomplishing this function.

The adaptability of the rating scale to other monetary systems is possible even under adverse circumstances. For example, wages paid French hourly employees by the U. S. Army are as follows:[2]

(a)	Laborer	($.39)	136 Francs
(b)	Trades	(.42)	146 Francs
(c)	Semi-skilled worker	(.44)	152 Francs
(d)	Skilled worker	(.54)	188 Francs
(e)	Highly skilled worker	(.58)	204 Francs

The range of rates and low wages are obvious deficiencies in the French wage system. Part of the explanation of this condition lies in the manner in which French employers use other incentives, such as free housing, transportation, consumer cooperative privileges, and many other company sponsored activities. (The typical French employer desires to prevent the accumulation of capital by the

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[2]Wage rates paid by the U. S. Army are either comparable to or slightly higher than wages paid by industry.

workers--a practice which stems from the aged fear of competition.)

The payment of wages to the skilled French employees as compared to the unskilled laborers is similar to the typical United States wages in that lower rates are on a relatively flat curve and then rise more rapidly for skilled jobs. The worker in France receives, however, a wage which is roughly twenty-one to twenty-three per cent of the wage paid the American worker under the WB and WBS schedules.

Rather than convert dollar wage rates into French francs on a percentage reduction basis, one should maintain the dollar rates but consider the rates $1.86, $2.58, etc., as so many points by dropping the decimal and dollar sign. It then would be relatively easy to convert these "points" to franc wages on an established percentage figure which would be based upon the wages paid in the local area.

The flexibility of such a system of converting to points permits the evaluation of wages to any currency. Therefore, whether in France, Japan, or Germany, such a program is workable with little modification.[3]

An important part of job evaluation is the continuous follow-up and checking that must be accomplished "ad infinitum." A basis for a sound wage structure has been

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[3]The whole job evaluation program is, of course, impractical in "backward" areas. Where it is obvious that indigenous skills are not hireable, it stands to reason that a job evaluation system of this scope is out of the question.

provided, but it will serve as such only if it is operated as a dynamic structure that must be kept up to date at all times. This is important to command and, perhaps more than any reason, why command awareness of job evaluation is so vital, because if jobs change and ratings do not, workers and supervisors will criticize the wage structure and employee morale--thereby efficiency will be affected adversely. If, however, top level command backing, interest, and support are given to job evaluation, the supervisory and working personnel will support it, assist in maintaining it, and wage dissatisfactions will be reduced because of it. "A sound program of job evaluation, properly controlled, provides one of the most effective methods in modern business practice for securing the best return from the payroll investment."[4]

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[4]E. Lanham, Job Evaluation (New York: McGraw Hill Book Company, Inc., 1955), p. 341.

CHAPTER VI

CONCLUSIONS

Efficient Ordnance Depot operations preclude the hiring, utilization, and payment of indigenous personnel on any basis which adversely affects maximum effectiveness of the depots concerned and their resultant contributions to military success. The strategic factor in insuring successful functioning of a depot lies in the utilization of the personnel of the depot. This requires maintenance of continued full support of the employees by recognition of their work and equitable payments for services rendered.

The problem confronting the depot commander today is how he can insure, within practical bounds, that equitable wages are being paid to his workers according to their skills, experience, educational requirements, responsibilities, and working conditions.

This wage plan study is designed as a guide to accomplish the above. Its implementation is not difficult. The depot commanders and supervisors can understand how it works with a minimum of explanation. In the final analysis, the depot commander, by his unqualified support of such a plan, performs one of his most important functions as the

organizational head, i.e., securing maximum efforts from his employees.

This thesis points out the growing need for civilian employees and the requirements for carefully executed wage payments as one of the most important factors in establishing and maintaining an effective and efficient working force. The objectives of a wage plan, (a) like pay for like work, (b) pay to have a direct relationship to difficulty of work to be performed, and (c) that pay rates will reflect going rates for comparable work within the same geographical area, were outlined, and the means for accomplishing these objectives were explained in the performing of the job evaluation and the rate structure plan.

A job evaluation study with a job comparison scale was made. Job descriptions and specifications of several common type jobs from depots in the United States were gathered for the study. In addition, wage schedules from representative depots of the United States were analyzed, and pay grades were averaged for establishing accurate going wage rates for key jobs. The job descriptions and specifications mentioned previously were transcribed onto the forms used in this study, and the jobs then were screened for appropriateness and ranked according to factors. Then a job comparison scale identifying the various key job factors, by price, was made. An example of how to use this scale was included to facilitate its use by someone unacquainted with job

evaluation methods. A detailed description of the above is contained in Chapter III, Performing the Job Evaluation.

Although the job evaluation with the job comparison scale is the solution to pricing individual jobs, the overall pricing of all the jobs within the depot concerned must be considered to achieve the third objective of the wage plan, i.e., similar pay for comparable work in the same geographical area. The administration of the plan is also an important consideration. For example, one can consider the number of grades and steps within each grade which would be feasible for a typical overseas depot. These grades, thirteen in number with three steps in each grade, are explained and illustrated in Chapter IV, The Rate Structure. The necessity for maintenance of the wage plan, continuous command backing, and interest by supervisory personnel can not be overemphasized.

The employment of native personnel in foreign countries, similar in culture to this country, by any agency of the United States government contributes immensely to the attitudes and opinions of the citizens within those countries toward the United States. American prestige and goodwill can be either enhanced or adversely affected, depending upon the manner in which they are treated. The use of a carefully planned and executed job evaluation program and equitable wage payments will do much in furthering favorable reactions to American military operations overseas.

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APPENDIX

APPENDIX TABLE I

COMPARISON OF THE FOUR BASIC SYSTEMS OF JOB EVALUATION*

RANKING SYSTEM	CLASSIFICATION SYSTEM	POINT SYSTEM	FACTOR COMPARISON SYSTEM
THE JOB ANALYSIS: A narrative description of the job with the duties, responsibilities, degree of difficulty, and required qualifications clearly brought out.		THE JOB ANALYSIS: A narrative statement of duties and qualifications. In addition, the job is broken down into the important compensable factors, such as required experience and training, mental effort, and physical effort. The amount to which each factor is present in the job is indicated by a short narrative statement.	
METHODS OF RELATING JOBS Jobs are ranked in their order of relative difficulty or value to the company, and grade levels are sometimes defined after the jobs have been ranked.	METHODS OF RELATING JOBS Jobs are allocated to grade levels which are defined arbitrarily prior to evaluating jobs.	METHODS OF RELATING JOBS Jobs are related by factorial analysis. A restricted number of fairly specific factors are selected for application to a limited number of types of work. The point values are predetermined before analysis of jobs and are decided arbitrarily, and the degree of each factor is expressed by a definition.	METHODS OF RELATING JOBS Jobs are related by factorial comparison. The factors used are assumed to be fundamental to all jobs and of universal application, the point values are set after analysis of jobs from existing rates of "key" jobs, and the degrees of each factor are expressed by sample jobs.

* Jay L. Otis and Richard H. Leukart, Job Evaluation (New York: Prentice-Hall, Inc., 1954), p. 15, citing Informational Manual on Industrial Job Evaluation Systems.

JOB SPECIFICATION

HOURLY EMPLOYEES

Job Title AUTOMOTIVE MECHANIC Alternate Title None Dept. Normal Force Date 1 Jan 58

Duties: Under the supervision of the AUTOMOTIVE SHOP FOREMAN, the AUTOMOTIVE MECHANIC performs fourth echelon maintenance repair on general automotive equipment including passenger vehicles, busses, light through heavy trucks and/or materials handling equipment to include light through heavy tractors, towmotors, forklifts, gasoline cranes (up to five ton capacity). He may determine required repairs of the above equipment through testing equipment or observation and perform functional and operational tests for operating and performance characteristics, final adjustments or corrections to the above vehicles prior to final release. Uses operators' reports, work sheets or job orders as initial basis for repair or replacement of items. Refers to instructional manual and guides; complies with technical directives as to acceptability of work completed.

MENTAL REQUIREMENTS	SKILL REQUIREMENTS	PHYSICAL FACTORS	RESPONSIBILITIES	WORK CONDITIONS
8 years education Special Education: Apprenticeship training Kind of work knowledge: Mechanical knowledge of vehicles; major assemblies thereof; parts and mechanical testing machines. Mathematics used: Shop arithmetic X Reads orders ____Prepares records ____Instructs others ____Rec's constant sup'v'n. ____Monotony ____Distratctions Pers. qualities needed	Kind: Mechanical ability to fix engines, transmissions, differentials and other systems common to most types of vehicular equipment X Dexterity Inexperienced—time to learn one year Time for proficiency three years Desirable prior exper.: garage repairman Precision or work limits Trains for: AUTOMOTIVE SHOP FOREMAN	Kind of physical effort lifting parts, working under and on top of vehicles. Bending, stooping, awkward positions Operation: ____Repetitive X Varied ____Intermittent ____Semi-auto. Age limits 21 to 55 Min. height 5' 4'' Sex: M X or F____ X Much fatigue X Very active work ____Great strength X Good eyesight ____Color discrimination Other physical factors	For equipment all types of vehicle testing equip. incl. lifting, jigs & For tools gen. shop equip hand & mach tools for vehicle repair For material repair assemblies and parts For records maintenance work orders of vehicles For work of others Property For savings—how:	Place of work inside 90% outside 10% (testing) Type automotive repair shop building Surroundings very noisy, greasy, dirty. Atmosphere drafty, fumes Illumination Hazards Other factors

REMARKS:
Symbols X to indicate; XX to stress; P, preferred; R, required. Show percent or amount.

Prepared by _____ Approved _____

JOB SPECIFICATION

HOURLY EMPLOYEES

Job Title FORK LIFT OPERATOR 1.94 Alternate Title _____ Dept. _____ Normal Force _____ Date _____

Duties: Under the supervision of the WAREHOUSE FOREMAN, the FORK LIFT OPERATOR drives 1½ to 3 ton fork lifts in transporting pallets of materiel to, from, and on loading docks, trucks, box and flat cars, shops and within warehouses. May drive to locations and select materiel to be transported from documents on locator cards. Performs driver maintenance on equipment; observes safety and local traffic regulations.

MENTAL REQUIREMENTS	SKILL REQUIREMENTS	PHYSICAL FACTORS	RESPONSIBILITIES	WORK CONDITIONS
6 years education Special Education: Safety schooling Kind of work knowledge: Warehouse location system Mathematics used: Simple arithmetic X Reads orders ___ Prepares records ___ Instructs others ___ Rec's constant sup'v'n. ___ Monotony ___ Distratctions Pers. qualities needed	Kind: Fork lift driver training in close confining areas X Dexterity Inexperienced—time to learn One week Time for proficiency Three months Desirable prior exper.: Mechanical equipment operator Precision or work limits Often operates in tight areas i.e. box cars, truck vans Trains for: MATERIEL HANDLING EQUIPMENT OPERATOR, GENERAL	Kind of physical effort Operation: ___ Repetitive X Varied ___ Intermittent ___ Semi-auto. Age limits 21 to 45 Min. height 5' 4" Sex: M X or F ___ ___ Much fatigue X Very active work ___ Great strength ___ Good eyesight ___ Color discrimination Other physical factors	For equipment Fork lift truck For tools None For material Insuring loaded pallets are not spilled and are correctly located For records For work of others Property For savings—how: Reducing of rehandling supplies	Place of work Warehouses or loading areas Type Fork lift truck driving Surroundings Warehouses, loading docks, railhead sidings. Narrow aisles in storage areas or warehouses Atmosphere All kinds of weather conditions and changes going in and out of warehouses Illumination Often in dimly lit areas Hazards Gas fumes Other factors

REMARKS:
Symbols X to indicate; XX to stress; P, preferred; R, required. Show percent or amount.

Prepared by _____ Approved _____

JOB SPECIFICATION

HOURLY EMPLOYEES

Job Title FREIGHT HANDLER 1.69 Alternate Title LABORER Dept. Normal Force Date

Duties: Under the immediate supervision the FREIGHT HANDLER loads and unloads rail cars, trucks, warehouse tractors and hand trucks. May remove lids and bandings from containers and remail or reband for examination of presence of preservatives. May obtain and/or place stocks from or onto locations designated on picking tickets. Stacks boxes on pallets in correct positions for future handling. Salvages useable nails, lumber, boxes and crates. Sweeps and cleans up working area. Performs other duties as assigned.

MENTAL REQUIREMENTS	SKILL REQUIREMENTS	PHYSICAL FACTORS	RESPONSIBILITIES	WORK CONDITIONS
6 years education Special Education: None Kind of work knowledge: Mathematics used: None ____Reads orders ____Prepares records ____Instructs others X Rec's constant sup'v'n. ____Monotony ____Distratctions Pers. qualities needed	Kind: How to lift heavy packages X Dexterity Inexperienced—time to learn One day Time for proficiency One week Desirable prior exper.: None Precision or work limits None Trains for: WAREHOUSEMAN	Kind of physical effort lifting of packages and cartons. (Up to 60-75 pounds) Operation: ____Repetitive ____Varied X Intermittent ____Semi-auto. Age limits 18 to 40 Min. height 5' 6" Sex: M X or F_____ X Much fatigue X Very active work X Great strength ____Good eyesight ____Color discrimination Other physical factors	For equipment None For tools Common hand tools For material Proper stacking of packages to facilitate handling and avoid dropping For records None For work of others None Property For savings—how:	Place of work Inside and outside of shipping, receiving or classification warehouses. All weather conditions Type Common labor Surroundings Warehouse, concrete floors, damp, drafty and poorly heated warehouse buildings Atmosphere Fumes from warehouse equipment, outside cold and in summer hot and humid Illumination Often in dimly lit warehouse areas Hazards Possible strain Other factors

REMARKS:
Symbols X to indicate; XX to stress; P, preferred;
R, required. Show percent or amount.

Prepared by _____ Approved _____

JOB SPECIFICATION

HOURLY EMPLOYEES

IDENTIFICATION AND RECEIVING

Job Title GENERAL FOREMAN 3.14 Alternate Title _____ Dept. _____ Normal Force _____ Date _____

Duties: Under the general direction of the operations office, supervises the receiving, checking, tallying, identifying, classifying and temporary storage of newly processed materiel and marked or unmarked field returned materiel for storage, base shops or shipment. Serves as foreman over 40 - 125 positions. Performs duties within policy directives; may take unreviewed action and finalize decisions to the extent that they relate specifically to his functional area. Coordinates with supporting activities, participates with superior's staff organization in planning work flow and processes, plans with subordinates and staff specialists the assignments of groups of workers, sources of supply, use of equipment based on anticipated workload, completion dates of projects in process. Supervises preparation and consolidation of reports; participates in personnel management and management improvement activities as they affect his organization.

MENTAL REQUIREMENTS	SKILL REQUIREMENTS	PHYSICAL FACTORS	RESPONSIBILITIES	WORK CONDITIONS
12 years education	Kind:	Kind of physical effort Standing and walking 30% Sitting 70%	For equipment Receiving warehouse equipment including materials handling; installed fixtures For tools Hand and machine tools for spot inspecting incoming materiel For material Depot stocks	Place of work Indoors Type Warehouse office Surroundings Office interior
Special Education: Foreman training	____Dexterity	Operation:		
Kind of work knowledge: Depot receiving operations, overall depot functions, warehousing and maintenance operations	Inexperienced—time to learn Three years	____Repetitive X Varied ____Intermittent ____Semi-auto.		
Mathematics used:	Time for proficiency Five years	Age limits 25 to 60 Min. height 5' 6"	For records Receipt of depot materiel to assure quantities and items on hand	Atmosphere
X Reads orders	Desirable prior exper.: Parts identification, maintenance; storage, shipping foreman positions	Sex: M X or F ____Much fatigue	For work of others tally with stock control personnel reports. 40-125 positions	Illumination Excellent
X Prepares records	Precision or work limits	X Very active work	Property Depot stocks	Hazards
X Instructs others	Trains for: ASSISTANT FOR SUPPLY OPERATIONS	____Great strength ____Good eyesight ____Color discrimination	For savings—how: Management work - measurement program	Other factors
____Rec's constant sup'v'n.		Other physical factors		
____Monotony				
____Distractions				
Pers. qualities needed				

REMARKS:
Symbols X to indicate; XX to stress; P, preferred; R, required. Show percent or amount.

Prepared by _____ Approved _____

JOB SPECIFICATION

HOURLY EMPLOYEES

Job Title LABORER LEADER 1.99 Alternate Title _____ Dept. _____ Normal Force _____ Date _____

Duties: Under the supervision of a LABORER FOREMAN the LABORER LEADER explains, demonstrates, and directs as leader over 9-30 WB-4 labor positions and performs identical tasks concurrently to establish a production pace; the preparation of vehicles for spray painting by sanding with vibrator and disc machine sanders, masking, cleaning, taping and removing accessories. He is instructed as to what tasks are to be done and in what order. Also may be instructed as to performance of tasks and his work is frequently checked. Maintains discipline of group.

MENTAL REQUIREMENTS	SKILL REQUIREMENTS	PHYSICAL FACTORS	RESPONSIBILITIES	WORK CONDITIONS
6 years education	Kind:	Kind of physical effort	For equipment Sanding and abrasive hand machines	Place of work Indoor
Special Education:			For tools Scrapers, wire brushes	Type Repair workshop
Kind of work knowledge:			For material Vehicles of all types - to insure cleanliness	
	____Dexterity	Operation:		Surroundings Noisy, dirty
	Inexperienced—time to learn Three days	X Repetitive ____Varied ____Intermittent ____Semi-auto.		
Mathematics used:	Time for proficiency One week	Age limits 18 to 50 Min. height 5' 6"	For records	
____Reads orders	Desirable prior exper.:	Sex: M X or F ____	For work of others As labor leader 9-30 positions	Atmosphere Dirty, air filled with sanded dust
____Prepares records		X Much fatigue	Property	Illumination Good
X Instructs others		X Very active work		
____Rec's constant sup'v'n.	Precision or work limits	____Great strength		
____Monotony		____Good eyesight		Hazards Respiratory ailments
____Distratctions	Trains for:	____Color discrimination	For savings—how: Production time; storage of vehicles to prevent re-preservation	Other factors
Pers. qualities needed	LABORER FOREMAN	Other physical factors		

REMARKS:
Symbols X to indicate; XX to stress; P, preferred; R, required. Show percent or amount.

Prepared by _____ Approved _____

JOB SPECIFICATION

HOURLY EMPLOYEES

Job Title LIQUIDBLASTER OPERATOR 2.09 Alternate Title CABINET ABRASIVE BLASTER Dept. Normal Force Date

Duties: Under the general supervision of the CLEANER-PRESERVER SUPERVISOR, the LIQUIDBLASTER OPERATOR cleans various types of parts, tools and equipment utilizing liquid blasting machines which removes rust, scale, corrosion, paint and dirt from metal surfaces. He places item(s) to be cleaned inside machine and works from outside with arms through gauntlet-covered armholes. Observes his work through vision window and the machine is equipped with air control valves, ventilating system to remove blasting fog, window wash and lighting to facilitate observation. Manipulates item(s) cleaned with one hand; directs air and abrasive solution from a nozzle with other hand. Exercises care in variating air pressure and gun distance from item being cleaned. Controls air pressure and window spray valve through knee operation. Cleans equipment with water, hose, rags and brushes. He mixes one of three types of abrasive powders, and also a corrosion inhibitor based on manufactures directions. Rinses cleaned items.

MENTAL REQUIREMENTS	SKILL REQUIREMENTS	PHYSICAL FACTORS	RESPONSIBILITIES	WORK CONDITIONS
6 years education Special Education: Kind of work knowledge: Mathematics used: ____Reads orders ____Prepares records ____Instructs others ____Rec's constant sup'v'n. X Monotony ____Distratctions Pers. qualities needed	Kind: X Dexterity Inexperienced—time to learn Two days Time for proficiency One week Desirable prior exper.: Precision or work limits Trains for: CLEANER-PRESERVER SUPERVISOR	Kind of physical effort Standing 100%, bending, stooping to lift part Operation: X Repetitive ____Varied ____Intermittent ____Semi-auto. Age limits 18 to 40 Min. height 5' 6" Sex: M X or F X Much fatigue X Very active work ____Great strength X Good eyesight ____Color discrimination Other physical factors	For equipment Liquidblaster machines For tools For material All the processed through the machine insuring thorough cleaning For records For work of others Property For savings—how: In preservation of items	Place of work Indoor building Type Processing line operation Surroundings Noisy and fumes from solvents and materiels handling equipment Atmosphere Well heated Illumination Good Hazards Other factors

REMARKS:
Symbols X to indicate; XX to stress; P, preferred;
R, required. Show percent or amount.

Prepared by _____ Approved _____

JOB SPECIFICATION

HOURLY EMPLOYEES

Job Title MACHINIST 2.48 Alternate Title _____ Dept. _____ Normal Force _____ Date _____

Duties: Under the general supervision of the SERVICE SHOP FOREMAN, the MACHINIST performs hand, bench and tool machine work in machining intricately shaped parts. Uses engine lathes, vertical and horizontal milling machines, drill presses, grinding machines and other shop machines as required. From blueprints, samples, oral or written specifications, uses own judgement as to work procedures, layouts, type of machines and materiel.

MENTAL REQUIREMENTS	SKILL REQUIREMENTS	PHYSICAL FACTORS	RESPONSIBILITIES	WORK CONDITIONS
12 years education Special Education: Apprenticeship training Kind of work knowledge: Use of machinist's handbooks, reading blueprints and specifications Mathematics used: Shop mathematics X Reads orders ___ Prepares records ___ Instructs others ___ Rec's constant sup'v'n. ___ Monotony ___ Distractions Pers. qualities needed	Kind: Close tolerance machine operations making multidimensional parts, jigs and fixtures. Setting up all types of machine tools and equipment X Dexterity Inexperienced—time to learn Two years Time for proficiency Five years Desirable prior exper.: Apprentice machinist, or tool and die maker Precision or work limits .001 of an inch Trains for:	Kind of physical effort Lifting of stock, jigs and fixtures. (Usually not over 10 pounds). Standing 90%. Operation: ___ Repetitive X Varied ___ Intermittent ___ Semi-auto. Age limits 21 to 60 Min. height 5' 4" Sex: M X or F ___ ___ Much fatigue ___ Very active work ___ Great strength X Good eyesight ___ Color discrimination Other physical factors	For equipment All types of shop machines such as lathes, millers, etc. For tools Hand tools incident to machine shop For material Various bar stocks, brass, rolled steel For records For work of others Property Tool cabinets, machine parts For savings—how: Reduction of scrap waste	Place of work Indoors Type Shop Surroundings Noisy Atmosphere Greasy equipment and materials Illumination Excellent Hazards Metal splinters, moving machinery Other factors

REMARKS:
Symbols X to indicate; XX to stress; P, preferred; R, required. Show percent or amount.

Prepared by _____ Approved _____

JOB SPECIFICATION

HOURLY EMPLOYEES

Job Title MECHANICAL EQUIPMENT PROCESSOR FOREMAN 2.85 Alternate Title _____ Dept. _____ Normal Force _____ Date _____

Duties: Under the direction of the maintenance office the MECHANICAL EQUIPMENT PROCESSOR FOREMAN serves as foreman over 40 - 125 positions in the processing of vehicles for storage both in the shops and/or field. Directs work assigned by utilizing personnel, equipment, materiel provided and overall work methods and processes developed by management. Assigns personnel, trains and develops work crews. May participate with supervisors for operation plans. Establishes sequence of work orders; evaluates work progress; inspects machinery and equipment for utilization and maintenance; supervises reports preparation. Performs above duties according to depot SOP's, plans, regulations, schedules and requirements.

MENTAL REQUIREMENTS	SKILL REQUIREMENTS	PHYSICAL FACTORS	RESPONSIBILITIES	WORK CONDITIONS
12 years education Special Education: Vehicle mechanic Kind of work knowledge: Preservation and storage methods for vehicles, including painting Mathematics used: Shop mathematics X Reads orders X Prepares records X Instructs others ___ Rec's constant sup'v'n. ___ Monotony ___ Distratctions Pers. qualities needed	Kind: Mechanic; painter ___ Dexterity Inexperienced—time to learn Two years Time for proficiency Five years Desirable prior exper.: Mechanical background, packaging and storage experience. Painting Precision or work limits Trains for:	Kind of physical effort Standing 65% Sitting 35% Operation: ___ Repetitive X Varied ___ Intermittent ___ Semi-auto. Age limits 28 to 60 Min. height 5' 6" Sex: M X or F ___ ___ Much fatigue ___ Very active work ___ Great strength X Good eyesight ___ Color discrimination Other physical factors	For equipment Processing equipment; fogging machines, spray paing booths, sanding and washing machines For tools Hand tools, brushes, shop tools For material Paints, abrasives, oil, greases, preservative paper For records Vehicular records; preparation of reports For work of others 40 - 125 processing positions Property Processing shop For savings—how: Waste elimination: 1. Vehicular deterioration 2. Prevention of re-processing due to faulty processing for storage	Place of work Indoors 60% Outdorrs 40% Type Office in processing shop Surroundings Quiet office Atmosphere Cleanliness Illumination Excellent Hazards Other factors

REMARKS:
Symbols X to indicate; XX to stress; P, preferred; R, required. Show percent or amount.

Prepared by _____ Approved _____

JOB SPECIFICATION

HOURLY EMPLOYEES

Job Title PROCESSING INSPECTOR 2.13 Alternate Title _____ Dept. _____ Normal Force _____ Date _____

Duties: Under general supervision from the inspection office the PROCESSING INSPECTOR, by experience, judgement and reference to technical manuals, depot regulations, Ordnance Corps technical instructions, standing operating procedures and joint Army-Navy-Air Force specification directives for preservation, packaging packing, and car blocking and bracing; inspects all Ordnance general supplies (exclusive of SNL "G" group materiel) for proper preservation, box or crating, unitizing and packaging, banding and marking, to include materiel being processed and packed for maintenance-in-storage as well as materiel for shipment. He also determines possible contract violations of materiel packed by manufacturer. May prepare reports of packaging deficiencies including cost estimate.

MENTAL REQUIREMENTS	SKILL REQUIREMENTS	PHYSICAL FACTORS	RESPONSIBILITIES	WORK CONDITIONS
10 years education Special Education: Materiel processing school Kind of work knowledge: Packaging and preserving of Ordnance materiel. Knows how to use references, technical and general Mathematics used: Simple arithmetic X Reads orders X Prepares records X Instructs others Rec's constant sup'v'n. Monotony Distractions Pers. qualities needed	Kind: Detection of improper processing Dexterity Inexperienced—time to learn Three months Time for proficiency One year Desirable prior exper.: Packaging, storage and processing of materiel Precision or work limits Trains for: INSPECTION OFFICE	Kind of physical effort Opens small packages. Lifts items for inspection Operation: Repetitive X Varied Intermittent Semi-auto. Age limits 21 to 60 Min. height 5' 2" Sex: M or F Much fatigue Very active work Great strength X Good eyesight Color discrimination For marking in color codes Other physical factors	For equipment For tools For material Prevention of deterioration of all Ordnance materiel other than "G" group. Depends upon proper processing. Failure to detect improper methods and faulty workmanship causes loss of materiel and manhours. For records Of item(s) inspected For work of others Property For savings—how: Preventing materiel loss and resultant reclamation manhours	Place of work Indoors, outside, all types of weather Type Normally around warehouse, processing and shipping areas Surroundings Noisy, draughty Atmosphere Illumination Good Hazards Other factors

REMARKS:
Symbols X to indicate; XX to stress; P, preferred; R, required. Show percent or amount.

Prepared by _____ Approved _____

JOB SPECIFICATION

HOURLY EMPLOYEES

Job Title PRODUCTION EXPEDITER LEADER 2.23 Alternate Title _____ Dept. _____ Normal Force _____ Date _____

Duties: Under general supervision of the WAREHOUSEMAN FOREMAN, the PRODUCTION EXPEDITER LEADER instructs and as leader working concurrently with 2 - 12 WB-11 PRODUCTION EXPEDITER positions, establishes the work pace to expedite the movement of materiel from storage, consolidation, packing and crating areas to meet required shipping dates. May make detailed and thorough search for materiel needed to complete a shipment. May receive job task verbally but usually obtains his information from shipping documents, vouchers or location cards.

MENTAL REQUIREMENTS	SKILL REQUIREMENTS	PHYSICAL FACTORS	RESPONSIBILITIES	WORK CONDITIONS
10 years education	Kind:	Kind of physical effort	For equipment	Place of work
Special Education:		Walking and standing 90%		Indoors 80%
				Outdoors 20%
Kind of work knowledge:			For tools	
Must know depot locations by storage plan. Be able to use reference data as to nomenclatures and stock numbers				Type
				Storage warehouse
			For material	
	____Dexterity			Surroundings
		Operation:		
	Inexperienced—time to learn	____Repetitive X Varied		
	Six months	____Intermittent ____Semi-auto.		
Mathematics used:		Age limits 21 to 45		
Simple arithmetic	Time for proficiency	Min. height 5' 6"	For records	
X Reads orders	Two years	Sex: M X or F____		Atmosphere
____Prepares records	Desirable prior exper.:	____Much fatigue	For work of others	Drafty
X Instructs others	Storekeeper type positions	X Very active work	Directs work of 2 - 12 men	Illumination
____Rec's constant sup'v'n.		____Great strength	Property	Fair
____Monotony	Precision or work limits	X Good eyesight		
____Distratctions		X Color discrimination to identify color marking cards	For savings—how:	Hazards
Pers. qualities needed	Trains for:	Other physical factors		Other factors
	WAREHOUSE FOREMAN			

REMARKS:
Symbols X to indicate; XX to stress; P, preferred;
R, required. Show percent or amount.

Prepared by _____ Approved _____

JOB SPECIFICATION

HOURLY EMPLOYEES

SERVICE SHOPS GENERAL
Job Title FOREMAN 3.72 Alternate Title ____ Dept. ____ Normal Force ____ Date ____

Duties: Under the general direction of the Maintenance Office, supervises 80 - 150 positions performing sheet metal work, body and fender, tire and tube, upholstering, wood body, and automotive glass repairs; includes administrative supervision over MILLWRIGHTS, MACHINISTS and ELECTRICIANS. Makes final decisions in matters relating to his functional operations; coordinates with other depot activities for work flow and production scheduling; plans assignment of workers, use of equipment. Supervises preparation of records and reports; participates in management activities as pertains to his organization.

MENTAL REQUIREMENTS	SKILL REQUIREMENTS	PHYSICAL FACTORS	RESPONSIBILITIES	WORK CONDITIONS
12 years education Special Education: Foreman training Kind of work knowledge: General mechanical and skilled trades applicable to repairing and servicing vehicular materiel. Mathematics used: X Reads orders X Prepares records X Instructs others ___ Rec's constant sup'v'n. ___ Monotony ___ Distratctions Pers. qualities needed	Kind: Machine use ___ Dexterity Inexperienced—time to learn Five years Time for proficiency Seven years Desirable prior exper.: Shop foreman of mechanical workers Precision or work limits Trains for: CHIEF OF MAINTENANCE	Kind of physical effort Standing and walking 60% Operation: ___ Repetitive X Varied ___ Intermittent ___ Semi-auto. Age limits 30 to 60 Min. height 5' 6" Sex: M ___ X ___ or F ___ ___ Much fatigue X Very active work ___ Great strength ___ Good eyesight ___ Color discrimination Other physical factors	For equipment Automotive service shop machines, welding equipment, allied trades machines For tools Tool kits for allied trades, i.e., glass-work, carpentry, etc. For material Metals, glass, wood, upholstery goods, tires For records Production reports, supply requisitions, personnel reports For work of others 80 - 150 positions Property For savings—how: Management work measurement programs	Place of work Indoors Type Shop office Surroundings office 40% noisy shop 60% Atmosphere Illumination Excellent Hazards Other factors

REMARKS:
Symbols X to indicate; XX to stress; P, preferred; R, required. Show percent or amount.

Prepared by ____ Approved ____

JOB SPECIFICATION

HOURLY EMPLOYEES

2.36

Job Title SMALL ARMS INSPECTOR Alternate Title _____ Dept. _____ Normal Force _____ Date _____

Duties: Under the direction of the Inspection Office the SMALL ARMS INSPECTOR performs initial, in process and final inspection of all Ordnance small arms and fire control instruments thereon to include pistols, revolvers, carbines, rifles, shotguns, grenade and rocket launchers, machine guns, multiple gun mounts, mortars and recoilless rifles. Determines classification, completeness, serviceability and repairability by visual inspection and testing fixtures. May repair, modify or rebuild any of the above mentioned items. May perform field trip inspections, requisitioning of parts, maintain records and inspection forms and advise using organizations concerning care and use of above equipment. May act as technical advisor in the preparation of cost estimates of repair or modification of above equipment. Uses technical publications, SNL's, AR's and SR's as reference guides.

MENTAL REQUIREMENTS	SKILL REQUIREMENTS	PHYSICAL FACTORS	RESPONSIBILITIES	WORK CONDITIONS
10 years education Special Education: Small arms apprentice training Kind of work knowledge: Functioning, repair, maintenance of small arms and artillery equipment plus fire control accessories thereto Mathematics used: Arithmetic X Reads orders X Prepares records X Instructs others ___ Rec's constant sup'v'n. ___ Monotony ___ Distractions Pers. qualities needed	Kind: As a small arms repairman; assembling, modifying, inspecting small arms and related fire control instruments X Dexterity Inexperienced—time to learn One year Time for proficiency Three years Desirable prior exper.: Mechanic, gunsmith Precision or work limits Closetolerances - 1/1000 of an inch in testing Trains for:	Kind of physical effort Occasional lifting of small arms (10 - 15 pounds). Standing 50%, sitting 50% Operation: ___ Repetitive X Varied ___ Intermittent ___ Semi-auto. Age limits 21 to 60 Min. height 5' 2" Sex: M X or F ___ ___ Much fatigue ___ Very active work ___ Great strength X Good eyesight ___ Color discrimination Other physical factors	For equipment All kinds of weapons and fire control testing equipment For tools Hand tools and gages For material Small arms and light artillery assemblies and parts For records Inspection and maintenance records For work of others Property For savings—how: Insuring work standards to prevent rejections and returned materiel	Place of work Indoors 95% Type Repair shop work Surroundings Usually noisy and greasy shop areas Atmosphere Repair shop conditions Illumination Good Hazards Other factors

REMARKS:
Symbols X to indicate; XX to stress; P, preferred; R, required. Show percent or amount.

Prepared by _____ Approved _____

JOB SPECIFICATION

HOURLY EMPLOYEES

Job Title TRUCK DRIVER Alternate Title _____ Dept. _____ Normal Force _____ Date _____

Duties: Under the supervision of the TRANSPORTATION TRUCKMASTER, the LIGHT TRUCK DRIVER drives a one-half ton pickup to deliver mail and other light supplies to specified locations within the depot area. May pick up or deliver materiel to locations nearby. Performs driver maintenance, i.e., checking of tires, gas, oil, water, etc., and notes deficiencies of vehicle on daily report form. The LIGHT TRUCK DRIVER assists in segregation and sorting of mail prior to distribution. He is required to follow depot regulations as to use and operation of vehicles which he drives.

MENTAL REQUIREMENTS	SKILL REQUIREMENTS	PHYSICAL FACTORS	RESPONSIBILITIES	WORK CONDITIONS
8 years education	Kind: Limited mechanical aptitude	Kind of physical effort: Light lifting of small packages. Lifting of mail sacks (usually not over 20 pounds)	For equipment: A one-half ton truck	Place of work: Outdoors 90% Indoors 10%
Special Education: None			For tools: None	Type: Messenger
Kind of work knowledge:			For material: Care for insuring correct destination of mail and packages	
	____Dexterity	Operation:		Surroundings: Dependent upon the weather - for most part in trucks and away from control
	Inexperienced—time to learn: 1 day	____Repetitive X Varied		
Mathematics used: None	Time for proficiency: 1 week	X Intermittent ____Semi-auto.	For records	Atmosphere: Pleasent indoor surroundings and modern truck facilities when driving
____Reads orders	Desirable prior exper.:	Age limits 18 to 55	For work of others	Illumination: Excellent, both in mail room and outdoors
____Prepares records		Min. height 5'		
____Instructs others		Sex: M X or F____	Property: The one-half ton truck and mail	Hazards: Traffic accident possibility
X Rec's constant sup'v'n.	Precision or work limits	____Much fatigue	For savings—how:	Other factors
____Monotony		____Very active work		
____Distratctions		____Great strength		
	Trains for: TRUCKMASTER	X Good eyesight		
Pers. qualities needed		____Color discrimination		
		Other physical factors		

REMARKS:
Symbols X to indicate; XX to stress; P, preferred; R, required. Show percent or amount.

Prepared by _____ Approved _____

JOB SPECIFICATION

HOURLY EMPLOYEES

Job Title WAREHOUSEMAN 1.80 Alternate Title _____ Dept. _____ Normal Force _____ Date _____

Duties: Under the general supervision of a WAREHOUSE FOREMAN the WAREHOUSEMAN receives, stores, replenishes, issues, consolidates and rewarehouses bin and bulk materiel which includes assemblies, major items and spare parts from shipping documents, vouchers, or location cards; checks for proper nomenclature, amounts and packaging. May initiate requests for replenishments, packaging or preserving of above materiel. May direct laborers and equipment operations in the movement and placement of materiel. Stores, stacks and palletizes materiel according to prescribed methods. May perform housekeeping duties in cleaning up area, segregating used cartons and boxes. His instructions may be verbal or written and his work is within predetermined storage plans and regulations.

MENTAL REQUIREMENTS	SKILL REQUIREMENTS	PHYSICAL FACTORS	RESPONSIBILITIES	WORK CONDITIONS
8 years education Special Education: Kind of work knowledge: Warehouse storage regulations and locations Mathematics used: Simple arithmetic X Reads orders ___ Prepares records ___ Instructs others ___ Rec's constant sup'v'n. ___ Monotony ___ Distratctions Pers. qualities needed	Kind: X Dexterity Inexperienced—time to learn One week Time for proficiency One month Desirable prior exper.: Storage work Precision or work limits None Trains for: WAREHOUSE FOREMAN	Kind of physical effort Lifting items usually weighing less than twenty-five pounds. 80% standing 20% sitting Operation: ___ Repetitive X Varied X Intermittent ___ Semi-auto. Age limits 18 to 50 Min. height 5' 4" Sex: M X or F ___ ___ Much fatigue X Very active work ___ Great strength X Good eyesight ___ Color discrimination Other physical factors	For equipment For tools For material Proper amounts and adequately packaged on preserved materiel in the warehouse For records Checks nomenclature and amounts for accurate inventories For work of others None Property The materiel within his area For savings—how: Elimination of rehandling materiel	Place of work Indoor warehouse Type Warehouse Surroundings Quiet Atmosphere Often times drafts from open doors for shipping and receiving Illumination Poor Hazards Other factors

REMARKS:
Symbols X to indicate; XX to stress; P, preferred; R, required. Show percent or amount.

Prepared by _____ Approved _____

JOB SPECIFICATION

HOURLY EMPLOYEES

Job Title WAREHOUSE FOREMAN 2.56 Alternate Title _____ Dept. _____ Normal Force _____ Date _____

Duties: Under the direction of the WAREHOUSEMAN GENERAL FOREMAN, the WAREHOUSE FOREMAN serves as foreman over 9 - 30 positions in the storage, issue and warehouse functions facilitating such storage and issue of bin and bulk depot property supplies and equipment required for the operation of the depot. Also includes the operation of the filling station for materials handling equipment, general purpose vehicles and other gasoline powered equipment. Directs accomplishment of all work assigned the organizational segment by utilizing the personnel, equipment, work methods and material provided. Assigns personnel to specific tasks; plans on-the-job training, development of his crews. Supervises the preparation of reports and documents relating to his operations; approves and/or acts upon and refers to his superior action initiated by subordinate supervisors.

MENTAL REQUIREMENTS	SKILL REQUIREMENTS	PHYSICAL FACTORS	RESPONSIBILITIES	WORK CONDITIONS
12 years education	Kind:	Kind of physical effort	For equipment	Place of work
Special Education:		Standing 60%	Materials handling equipment	Indoors
Kind of work knowledge: Warehouse operations			For tools	
			Hand tools within the warehouse	Type
				Warehouse
			For material	
	____Dexterity		Storage areas, including bins, pallets	
		Operation:		Surroundings
	Inexperienced—time to learn	____Repetitive X Varied		Quiet
	One year	____Intermittent ____Semi-auto.		
Mathematics used:		Age limits 21 to 60		
Simple arithmetic	Time for proficiency	Min. height 5' 6"	For records Preparation or consolidation of reports	
X Reads orders	Two years	Sex: M X or F		Atmosphere
X Prepares records	Desirable prior exper.:	____Much fatigue	For work of others	Drafty
X Instructs others	Warehouseman	____Very active work	9 - 30 positions	
____Rec's constant sup'v'n.		____Great strength		Illumination
____Monotony	Precision or work limits	X Good eyesight	Property Depot property stocks	Poor
____Distractions		____Color discrimination		Hazards
	Trains for:	Other physical factors	For savings—how:	
Pers. qualities needed	WAREHOUSE GENERAL FOREMAN		Efficient operations - meeting deadlines	Other factors

REMARKS:
Symbols X to indicate; XX to stress; P, preferred; R, required. Show percent or amount.

Prepared by _____ Approved _____

JOB SPECIFICATION

HOURLY EMPLOYEES

Job Title WRAPPER, HAND 1.63 Alternate Title PROCESSOR Dept. Normal Force Date

Duties: Under the immediate supervision of the PROCESSING LABOR LEADER the WRAPPER HAND lays loose items or cartons on pre-cut wrapping material supplied at the station; folds, and forms the paper around the item in the same manner as observed from a sample package. May count and pack pre-wrapped items or small packages into approved cartons. Seals packages with gummed paper, tape, stapling machine or sealing wax according to instructions. May operate heat seal machine; tie string around various items, place and remove items from plastic dip conveyor.

MENTAL REQUIREMENTS	SKILL REQUIREMENTS	PHYSICAL FACTORS	RESPONSIBILITIES	WORK CONDITIONS
6 years education Special Education: None Kind of work knowledge: No prerequisites Mathematics used: Simple counting ____Reads orders ____Prepares records ____Instructs others X Rec's constant sup'v'n. X Monotony ____Distratctions Pers. qualities needed	Kind: X Dexterity Inexperienced—time to learn One hour Time for proficiency One week Desirable prior exper.: Precision or work limits Trains for: PROCESSOR LEADER	Kind of physical effort Light physical effort in lifting small items Operation: X Repetitive ____Varied ____Intermittent ____Semi-auto. Age limits 18 to 55 Min. height 5' Sex: M____or F____ X Much fatigue X Very active work ____Great strength ____Good eyesight ____Color discrimination Other physical factors	For equipment Inexpensive sealing machines For tools No expensive hand tools For material Failure to wrap properly could result in deterioration costs For records None For work of others None Property For savings—how:	Place of work Normal warehouse temperatures. Usually works in sitting position Type Labor Surroundings Non-injurious fumes from cleaning and preserving tanks are present Atmosphere Warehouse interior Illumination Neon overhead lighting Hazards Possible adverse effect of treated and waxed paper on hands Other factors

REMARKS:
Symbols X to indicate; XX to stress; P, preferred;
R, required. Show percent or amount.

Prepared by _____ Approved _____

VITA

William John Whelan

Candidate for the Degree of

Master of Science

Thesis: A WAGE STRUCTURE PLAN FOR ORDNANCE DEPOT INDIGENOUS PERSONNEL

Major Field: Business Management

Biographical:

Personal data: Born, Toledo, Ohio, July 16, 1921, the son of John C. and Marie B. Whelan.

Education: Attended grade school, Cathedral Chapel, Toledo, Ohio; graduated from Scott High School in 1939; received the Bachelor of Business Administration degree from Toledo University in June, 1949, with a major in Commerce.

Professional Experiences: Enlisted in the United States Army in 1942 and is now a Major, Ordnance Corps, Regular Army; served in the Southwest Pacific in World War II from 1943 until the end of the war; was Chief, Supply Section of the Ordnance Division, Headquarters, USAREUR Communications Zone (France) 1952-1955; presently assigned as Assistant Professor of Military Science and Tactics, Oklahoma State University.