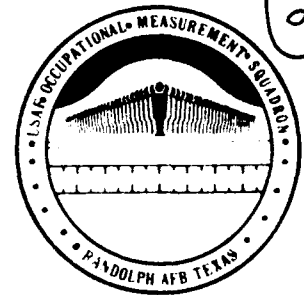


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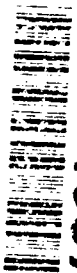
OCCUPATIONAL SURVEY REPORT

PAVEMENTS MAINTENANCE AND
CONSTRUCTION EQUIPMENT CAREER LADDERS

AFSCs 551X0 AND 551X1

AFPT 90-551-443

SEPTEMBER 1991



91-15376

OCCUPATIONAL ANALYSIS PROGRAM
USAF OCCUPATIONAL MEASUREMENT SQUADRON
AIR TRAINING COMMAND
RANDOLPH AFB, TEXAS 78150-5000

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TABLE OF CONTENTS

	<u>PAGE NUMBER</u>
PREFACE.	v
SUMMARY OF RESULTS	vi
INTRODUCTION	1
Background	1
SURVEY METHODOLOGY	3
Inventory Development.	3
Survey Administration.	4
Survey Sample.	5
Task Factor Administration	5
SPECIALTY JOBS (Career Ladder Structure)	11
Overview of Specialty Jobs	11
Summary.	29
Comparison of Current Survey to Previous Survey.	30
ANALYSIS OF DUTY AIR FORCE SPECIALTY CODE (DAFSC) GROUPS	30
AFSC 551X0	32
AFSC 551X1	40
DAFSC 55199/00	44
Summary.	44
ANALYSIS OF AFR 39-1 SPECIALTY DESCRIPTIONS.	48
OCCUPATIONAL SURVEY TRAINING ANALYSIS.	48
First-Enlistment Personnel	49
Training Emphasis (TE) and Task Difficulty (TD) Data	57
Specialty Training Standards (STS)	64
Plans of Instruction (POI)	73
TRAINING REQUIREMENTS ANALYSIS	78
Training Requirements Analysis Survey Procedures	82
Training Requirements Analysis (TRA) Questionnaire Sample.	83
Task Analysis.	83
Future Developments.	90
Training Issues and Recommendations.	90
Training Requirements Analysis Summary	95
JOB SATISFACTION ANALYSIS.	95
IMPLICATIONS	103
APPENDIX A	105
APPENDIX B	106
APPENDIX C	107
APPENDIX D	108
APPENDIX E	109
APPENDIX F	110
APPENDIX G	111

TABLE OF CONTENTS
(Tables, Figures, Appendices)

	<u>PAGE NUMBER</u>
TABLE 1 - COMMAND DISTRIBUTION OF AFSC 551XX PERSONNEL.	6
TABLE 1A - COMMAND DISTRIBUTION OF AFSC 551X0 PERSONNEL.	7
TABLE 1B - COMMAND DISTRIBUTION OF AFSC 551X1 PERSONNEL.	8
TABLE 2 - PAYGRADE DISTRIBUTION OF 551XX SURVEY SAMPLE.	9
TABLE 2A - PAYGRADE DISTRIBUTION OF 551X0 SURVEY SAMPLE.	10
TABLE 2B - PAYGRADE DISTRIBUTION OF 551X1 SURVEY SAMPLE.	10
TABLE 3 - RELATIVE PERCENT TIME SPENT PERFORMING DUTIES ACROSS PAVEMENT MAINTENANCE AND CONSTRUCTION EQUIPMENT JOB GROUPS	17-18
TABLE 4 - SELECTED BACKGROUND DATA FOR MEMBERS OF AFSC 551XX JOB GROUPS	19-20
TABLE 5 - JOB SPECIALTY COMPARISON BETWEEN CURRENT AND 1982 SURVEYS	31
TABLE 6 - DISTRIBUTION OF DAFSC 551XX MEMBERS ACROSS SPECIALTY JOBS	33-35
TABLE 7 - AVERAGE PERCENT TIME SPENT PERFORMING DUTIES BY DAFSC 551XX GROUPS	36-37
TABLE 8 - REPRESENTATIVE TASKS PERFORMED BY DAFSC 55130 PERSONNEL	38
TABLE 9 - REPRESENTATIVE TASKS PERFORMED BY DAFSC 55150 PERSONNEL	39
TABLE 10 - REPRESENTATIVE TASKS PERFORMED BY DAFSC 55170 PERSONNEL	41
TABLE 11 - REPRESENTATIVE TASKS PERFORMED BY DAFSC 55131 PERSONNEL	42
TABLE 12 - REPRESENTATIVE TASKS PERFORMED BY DAFSC 55151 PERSONNEL	43
TABLE 13 - REPRESENTATIVE TASKS PERFORMED BY DAFSC 55171 PERSONNEL	45
TABLE 14 - REPRESENTATIVE TASKS PERFORMED BY DAFSC 55199 PERSONNEL	46
TABLE 15 - REPRESENTATIVE TASKS PERFORMED BY DAFSC 55100 PERSONNEL	47
TABLE 16 - RELATIVE PERCENT TIME SPENT ON DUTIES BY FIRST-TERM DAFSC 551X0 AND 551X1 PERSONNEL (TAFMS 1-48 MONTHS).	53
TABLE 17 - REPRESENTATIVE TASKS PERFORMED BY AFSC 551XX PERSONNEL WITH 1-48 MONTHS TAFMS (PERCENT MEMBERS PERFORMING).	54
TABLE 18 - EQUIPMENT USED BY 30 PERCENT OR MORE OF AFSC 551XX PERSONNEL WITH 1-48 MONTHS TAFMS (PERCENT MEMBERS RESPONDING).	55-56
TABLE 19 - TASKS WITH HIGHEST TRAINING EMPHASIS (TE) RATINGS (AFSC 551XX)	58
TABLE 19A - TASKS WITH HIGHEST TRAINING EMPHASIS (TE) RATINGS (AFSC 551X0)	59
TABLE 19A - TASKS WITH HIGHEST TRAINING EMPHASIS (TE) RATINGS (AFSC 551X1)	60
TABLE 20 - TASKS WITH HIGHEST TASK DIFFICULTY (TD) RATINGS (AFSC 551XX)	61
TABLE 20A - TASKS WITH HIGHEST TASK DIFFICULTY (TD) RATINGS (AFSC 551X0)	62
TABLE 20B - TASKS WITH HIGHEST TASK DIFFICULTY (TD) RATINGS (AFSC 551X1)	63
TABLE 21 - EXAMPLES OF 551X0 STS ELEMENTS REQUIRING REVIEW (LESS THAN 20 PERCENT MEMBERS PERFORMING).	65
TABLE 22 - EXAMPLES OF 551X0 STS ELEMENTS REQUIRING REVIEW (QUESTIONABLE PROFICIENCY CODES)	66

TABLE OF CONTENTS (CONTINUED)
(Tables, Figures, Appendices)

	<u>PAGE NUMBER</u>
TABLE 23 - EXAMPLES OF TASKS PERFORMED BUT NOT REFERENCED TO 551X0 STS.	68
TABLE 24 - EXAMPLES OF 551X1 STS ELEMENTS REQUIRING REVIEW (LESS THAN 20 PERCENT MEMBERS PERFORMING).	69
TABLE 25 - EXAMPLES OF 551X1 STS ELEMENTS REQUIRING REVIEW (QUESTIONABLE PROFICIENCY CODES)	70
TABLE 26 - EXAMPLES OF TASKS PERFORMED BUT NOT REFERENCED TO 551X1 STS.	71
TABLE 27 - EXAMPLES OF DRAFT 551XX STS ELEMENTS REQUIRING REVIEW (LESS THAN 20 PERCENT MEMBERS PERFORMING).	72
TABLE 28 - EXAMPLES OF DRAFT 551XX STS ELEMENTS REQUIRING REVIEW (PROFICIENCY CODE NOT SUPPORTED)	74
TABLE 29 - EXAMPLES OF DRAFT 551XX STS ELEMENTS REQUIRING REVIEW (QUESTIONABLE PROFICIENCY CODES)	75
TABLE 30 - EXAMPLES OF TASKS PERFORMED BUT NOT REFERENCED TO DRAFT 551XX STS.	76
TABLE 31 - EXAMPLES OF 55130 POI ELEMENTS REQUIRING REVIEW	77
TABLE 32 - EXAMPLES OF TASKS WITH GREATER THAN 30 PERCENT MEMBERS PERFORMING AND NOT REFERENCED TO POI 55130	79
TABLE 33 - EXAMPLES OF 55131 POI ELEMENTS REQUIRING REVIEW	80
TABLE 34 - EXAMPLES OF TASKS WITH GREATER THAN 30 PERCENT MEMBERS PERFORMING AND NOT REFERENCED TO POI 55131	81
TABLE 35 - DISTRIBUTION OF DAFSC 551X0 PERSONNEL ACROSS DUTY SKILL- LEVEL GROUPS (TRAINING REQUIREMENTS SURVEY DATA)	84
TABLE 36 - DISTRIBUTION OF DAFSC 551X1 PERSONNEL ACROSS DUTY SKILL- LEVEL GROUPS (TRAINING REQUIREMENTS SURVEY DATA)	84
TABLE 37 - DISTRIBUTION OF DAFSC 55199 AND 55100 PERSONNEL (TRAINING REQUIREMENTS SURVEY DATA	85
TABLE 38 - DISTRIBUTION OF DAFSC 551X0 PERSONNEL ACROSS MAJOR COMMANDS (TRAINING REQUIREMENTS SURVEY DATA)	86
TABLE 39 - DISTRIBUTION OF DAFSC 551X1 PERSONNEL ACROSS MAJOR COMMANDS (TRAINING REQUIREMENTS SURVEY DATA)	86
TABLE 40 - CAREER LADDER TRAINING RECEIVED (TRAINING REQUIREMENTS SURVEY DATA)	87
TABLE 41 - TASK ANALYSIS GENERAL CATEGORIES (TRAINING REQUIREMENTS SURVEY DATA)	88
TABLE 42 - TIME REQUIRED 55130 PERSONNEL TO UPGRADE TO 3-SKILL LEVEL (TRAINING REQUIREMENTS SURVEY DATA).	92
TABLE 43 - TIME REQUIRED 55150 PERSONNEL TO UPGRADE TO 5-SKILL LEVEL (TRAINING REQUIREMENTS SURVEY DATA).	92
TABLE 44 - TIME REQUIRED 55170 PERSONNEL TO UPGRADE TO 5-SKILL LEVEL (TRAINING REQUIREMENTS SURVEY DATA).	93
TABLE 45 - TIME REQUIRED 551X1 PERSONNEL TO UPGRADE TO 5-SKILL LEVEL (TRAINING REQUIREMENTS SURVEY DATA).	93
TABLE 46 - COMPARISON OF AFSC 551XX TAFMS GROUP JOB SATISFACTION INDICATORS (PERCENT MEMBERS RESPONDING).	96

TABLE OF CONTENTS (CONTINUED)
(Tables, Figures, Appendices)

	<u>PAGE NUMBER</u>
TABLE 46A - COMPARISON OF AFSC 551X0 TAFMS GROUP JOB SATISFACTION INDICATORS (PERCENT MEMBERS RESPONDING)	97
TABLE 46B - COMPARISON OF AFSC 551X1 TAFMS GROUP JOB SATISFACTION INDICATORS (PERCENT MEMBERS RESPONDING)	98
TABLE 47 - COMPARISON OF JOB SATISFACTION FOR 551X0 CURRENT AND 1982 SURVEYS (PERCENT MEMBERS RESPONDING POSITIVELY)	99
TABLE 48 - COMPARISON OF JOB SATISFACTION FOR 551X1 CURRENT AND 1982 SURVEYS (PERCENT MEMBERS RESPONDING POSITIVELY)	99
TABLE 49 - COMPARISON OF JOB SATISFACTION INDICATORS FOR SPECIALTY JOBS (PERCENT MEMBERS RESPONDING)	100-101
FIGURE 1 - PAVEMENTS MAINTENANCE (551X0) AND CONSTRUCTION EQUIPMENT (551X1) SPECIALTY JOBS (N=2,488)	13
FIGURE 1A - PAVEMENTS MAINTENANCE (551X0) SPECIALTY JOBS (N=1,179)	14
FIGURE 1B - CONSTRUCTION EQUIPMENT (551X1) SPECIALTY JOBS (N=1,241)	15
FIGURE 2 - FIRST-ENLISTMENT AFSC 551XX PERSONNEL IN SPECIALTY JOBS (N=1,194)	50
FIGURE 2A - FIRST-ENLISTMENT AFSC 551X0 PERSONNEL IN SPECIALTY JOBS (N=655)	51
FIGURE 2B - FIRST-ENLISTMENT AFSC 551X1 PERSONNEL IN SPECIALTY JOBS (N=529)	52
FIGURE 3 - EXAMPLES OF TASK ANALYSIS WORKSHEET	89
APPENDIX A - SELECTED REPRESENTATIVE TASKS PERFORMED BY CAREER LADDER JOB GROUPS	105
APPENDIX B - 551X0 STS SUBPARAGRAPHS REQUIRING REVIEW	106
APPENDIX C - 551X1 STS SUBPARAGRAPHS REQUIRING REVIEW	107
APPENDIX D - 551XX DRAFT STS SUBPARAGRAPHS REQUIRING REVIEW	108
APPENDIX E - 55130 POI BLOCKS OR UNITS OF INSTRUCTION REQUIRING REVIEW	109
APPENDIX F - 55130 POI BLOCKS OR UNITS OF INSTRUCTION REQUIRING REVIEW	110
APPENDIX G - CURRENT CAREER LADDER TRAINING FOR DAFSC 551X0 AND 551X1 PERSONNEL	111

PREFACE

This report presents the results of an occupational survey and training requirements analysis of the Pavement Maintenance and Construction Equipment Operator career ladders, AFSCs 551X0 and 551X1. Authority for conducting occupational surveys is found in AFR 35-2. Computer products used in this report are available for use by operations and training officials.

Captain Jose Cassaude, Occupational Analyst, developed the survey instrument. Mrs Viola L. Hebert and Captain William J. Carle analyzed the training requirements data and provided input for the final report. Mr William C. Cosgrove analyzed the occupational survey data and wrote the final report. Mr Wayne Fruge provided computer programming support, and Ms Raquel A. Soliz provided administrative support. This report has been reviewed and approved for release by Lieutenant Colonel Johnny M. Collins, Chief, Airman Analysis Section, Occupational Analysis Branch, USAF Occupational Measurement Squadron.

Copies of this report are distributed to Air Staff sections, major commands, and other interested training and management personnel. Additional copies may be requested from the Occupational Measurement Squadron, Attention: Chief, Occupational Analysis Branch (OMY), Randolph AFB, Texas 78150-5000.

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SUMMARY OF RESULTS

1. Survey Coverage: Occupational survey results are based on responses from 2,488 AFSC 551XX respondents worldwide. This represents 66 percent of the total assigned AFSC 551XX population. The total is broken down to 1,179 AFSC 551X0 personnel, 1,241 AFSC 551X1 personnel, and 68 individuals with DAFSC 55199 or 55100.
2. Specialty Jobs: Analysis of the occupational survey data resulted in the identification of 17 jobs consisting of 7 job clusters and 10 independent jobs. One job cluster, performed by 66 percent of the survey population, is the core job for these career ladders. Four other job clusters, having 22 percent of the surveyed airmen, represent the secondary jobs, while the remaining 12 job clusters and independent jobs, accounting for 5 percent of the sample, are specialized jobs covering limited areas. Seven percent of the airmen in the sample were not found in any of the identified jobs.
3. Career Ladder Progression: Three-skill level personnel from both AFSCs perform technical hands-on manual tasks, while the 5-skill level personnel perform tasks which are more technical and less manual. Seven-skill level personnel provide the supervision for each AFSC functional area. The 9-skill level airmen and the CEM provide the managerial expertise for the combined functional areas. AFSC 551X0/X1 personnel follow an orderly skill-level progression through their respective career ladders.
4. AFR 39-1 Specialty Descriptions: The five AFR 39-1 Specialty Descriptions for the Pavements Maintenance and Construction Equipment career ladders (two Specialists, two Technicians, and one Superintendent) were reviewed against survey data. All descriptions accurately depict the characteristics of the respective jobs and provide a comprehensive overview of each specialty.
5. Occupational Survey Training Analysis: Three Specialty Training Standards (STS) were reviewed and analyzed. Seventeen percent of the 551X0 STS matched elements are not supported by survey data. Ten percent of the proficiency codes are not supported. The 551X1 STS has 32 percent of the matched elements not supported by survey data, with 19 percent of the proficiency codes also not supported. The proposed draft 551XX STS has 18 percent of the matched elements and 18 percent of the proficiency codes not supported by the survey data. Both Plans of Instruction (POI) for AFSCs 551X0 and 551X1 were reviewed and analyzed, and each was found to have 15 percent of their matched elements not supported by survey data. Additionally, there are tasks not matched to elements of each STS and POI that require review.
6. Training Requirements Analysis: General recommendations for updating Pavements Maintenance Specialist and Construction Equipment Operator training were developed. Included are recommendations such as using PRIME BEEF Wartime Task Standards to upgrade contingency training, reviewing direct duty assignments (DDAs) as entrance into the career ladders, and using the Task Analysis Extract for formal on-the-job training (OJT) update.

7. Job Satisfaction: The job satisfaction of personnel in the occupational survey samples (combined 551X0 and 551X1 samples) is similar to the job satisfaction of a comparative group of personnel in similar AFSCs surveyed in 1990. Job satisfaction, overall, for personnel from the present sample compares quite favorably with that of the personnel from the previous survey. Personnel in the Dump Truck Driver and Grounds Maintenance Specialist jobs are least satisfied with their jobs, while personnel in the other jobs are comparatively satisfied overall with their jobs. Training for equipment operators was seen as lacking by about 1 percent of the respondents, as indicated by write-in comments.

8. Implications: Survey data indicate a merger of the two career ladders is feasible, since personnel from both career ladders are already performing many of the same tasks. If a merger is not effected, then both the 551X0 and 551X1 STS and POI need to be reviewed for potential changes. If, however, the merger is to be effected, the draft STS should be reviewed for possible change, prior to its approval and implementation.

OCCUPATIONAL SURVEY REPORT
PAVEMENTS MAINTENANCE
AND
CONSTRUCTION EQUIPMENT
(AFSC 551X0/X1)

INTRODUCTION

This is a report of an occupational survey and training requirements analysis of the Pavement Maintenance (AFSC 551X0) and Construction Equipment Operator (AFSC 551X1) career ladders. The last occupational survey for these two career ladders was completed in August 1982. The Training Staff Officer, Headquarters ATC/TTOC, requested an occupational survey and a training requirements analysis to gather data to:

- update the tasks performed by members of these career ladders
- identify changes in the career ladders occurring over the past 7 years
- provide information on utilization of 3-skill level personnel
- review utilization and upgrade of direct duty assignment (DDA) personnel
- review collocation of Pavements Maintenance and Construction Equipment Operator work centers for managerial and technical problems
- define contingency responsibilities and training requirements for AFSCs 551X0/X1

Background

The 551X0/X1 career ladders have been stable since their creation in 1954, with AFSC 551X0 receiving its present designation in 1964. At the 9-skill level, the two career ladders merge into the Pavements and Construction Superintendent, AFSC 55199. Chief Enlisted Manager (CEM) code 55100 was added in October 1978.

In 1982, the functional community made plans to merge the two career ladders into a single career ladder. Many MAJCOMs and individual bases decided to combine the functions performed by the two AFSCs into a single shop, which would facilitate the merger and resulting need for cross-training.

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Although the merger was subsequently delayed, the single shop concept was retained by many bases. This has impacted on the personnel in these two career ladders and the tasks they perform and will be discussed later in this report.

The following are the specialty requirements indicated in Air Force Regulation 39-1 for entry into the 551XX career field:

Personnel entering the 551X0 career ladder must have a mechanical aptitude score of 44 on the Armed Services Vocational Aptitude Battery, demonstrate the ability to lift 90 pounds to elbow height, and be qualified to operate a government vehicle in accordance with AFR 160-43. Desirable entry qualifications include completion of high school with courses in general science, shop mechanics, and use of blueprints, and completion of the basic pavements maintenance course.

Personnel entering the 551X1 career ladder must have a mechanical aptitude score of 44 on the Armed Services Vocational Aptitude Battery, demonstrate the ability to lift 100 pounds to elbow height, be qualified to operate a government vehicle in accordance with AFR 160-43, and complete the basic construction equipment course. Desirable entry qualifications include completion of high school with courses in shop mechanics, and use of blueprints.

The following descriptions of the skill levels for the 551XX career ladders come from Air Force Regulation 39-1:

a. 55130 and 5-skill level members are responsible for constructing, maintaining, and repairing airfield pavements, aircraft revetments, airfield surface mats and membranes, roads, curbs, parking areas, walks, open storage areas, railroads, subgrades, and drainage structures. They also perform erosion control, operate batch and crushing plants, and assist in the use and handling of explosives.

b. 55131 and 5-skill level members are responsible for operating construction equipment to: prepare surfaces; lift and move heavy objects and materials; excavate, stabilize, and compact soils; install paving materials; and remove snow and ice. They also assist in the use and handling of explosives.

c. Seven-skill level personnel in each of the two career ladders are responsible for performing the same technical tasks as their respective 3- and 5-skill level members, but are also responsible for supervision and planning activities.

d. Nine-skill level and CEM personnel are responsible for managerial aspects of the career ladders, such as planning, directing, and inspecting pavements and construction equipment activities.

During the OSR process, a decision to merge the two AFSCs into a single AFSC was reached by the functional community. The data from the survey and information in this report will be of value to the personnel planning and effecting the merger.

Presently, there are two formal entry-level training courses. The Pavements Maintenance Specialist course (J3ABR55130) is a 4-week Category B course located at Sheppard AFB, Texas. The course for Construction Equipment Operators (5ABA55131) is a Category A course conducted in conjunction with the U. S. Army at Fort Leonard Wood, Missouri, and lasts 9 weeks. The elimination rate for each course is 1 percent.

SURVEY METHODOLOGY

Inventory Development

Data for this occupational survey were collected using USAF Job Inventory AFPT 90-551-443, dated January 1990. A preliminary task list was prepared by the Inventory Developer after a careful review of the AFSC 551X0/X1 OSR from 1982, the previous 551X0/X1 task list, current career ladder publications, training documents, and directives to determine tasks to be used in the initial task listing. This initial task listing was then refined with the help of three Pavements Maintenance subject-matter experts (SME) assigned to the Technical Training Center at Sheppard AFB, and six Construction Equipment SMEs assigned to the USAF training detachment at Fort Leonard Wood. From this, a preliminary job inventory was prepared and then validated through personal interviews at 5 operational bases with 33 Pavements Maintenance and Construction equipment personnel. The following bases were visited:

Tyndall AFB FL - 7 airmen - Representative of TAC

Hurlburt Field FL - 6 airmen - Red Horse Unit

Eglin AFB FL - 7 airmen - AFESC Rapid Runway Repair
(RRR) school and Range
Support activities

Ellsworth AFB SD - 6 airmen - Representative of SAC

Little Rock AFB AR - 7 airmen - Representative of MAC

Other significant contacts with personnel having career ladder involvement included Air Force Military Personnel Center (AFMPC) classification, functional, and resource managers, the Air Force Functional Manager, and the Headquarters ATC Training Staff Officer.

The final job inventory contains a comprehensive list of 1,067 tasks grouped under 25 duty headings. The survey has standard background questions asking for grade, duty title, time in service, time in present job, and time in career field. In addition, there are questions requesting such information as how an individual was assigned to the career ladder, functional area best describing the job, kinds of equipment used on the job, job satisfaction, and intent to reenlist.

In order to facilitate training requirements analysis, a single sheet questionnaire, requesting background data not found in the job inventory, was included with each job inventory mailed to the field.

Survey Administration

A computer-generated mailing list, provided by the Armstrong Laboratory, Human Resources Directorate, was used to select the occupational survey participants. From May to August 1990, Consolidated Base Personnel Offices at operational bases worldwide administered the job inventory to personnel holding DAFSCs 55130, 55131, 55150, 55151, 55170, 55171, 55199, and 55100.

All individuals who filled out a job inventory first completed an identification and biographical information section. Next, they answered questions in the background portion of the inventory. They were then directed to go through the booklet and check each task performed in their current job. Finally, they were asked to go back and rate each task they had checked using a 9-point scale reflecting relative time spent on each task compared to all other tasks. Ratings ranged from 1 (indicating a very small amount of time spent) to 9 (indicating a very large amount of time spent). The relative time spent on tasks was computed by first totaling all rating values on the inventory. Then the rating value for each task was divided by this total and the result multiplied by 100. The percent time spent ratings were used with the percent members performing values to help describe the various groups in this career ladder.

Survey Sample

All eligible military Pavements Maintenance and Construction Equipment personnel were provided job inventory booklets. The respondents to the survey represent an accurate and proportional representation of MAJCOM and paygrades for both career ladders. Table 1 reflects how the sample compares to the actual 551XX population in terms of the distribution across MAJCOMs. Table 1A shows the 551X0 distribution, and Table 1B provides the 551X1 distribution. Table 2 shows the paygrade distribution for the 551XX sample and assigned population, while Tables 2A and 2B reflect the separate AFSC breakouts. These data indicate a good representation of the actual career ladder population in the final sample.

The results of the training requirements analysis sample will be discussed later in this report.

Task Factor Administration

Job descriptions alone do not provide sufficient data for making decisions about career ladder documents or training programs. Task factor information is needed for a complete analysis of the career ladder. To obtain the needed task factor data, NCO supervisors from each career ladder completed either a training emphasis (TE) or task difficulty (TD) booklet. These booklets were processed separately from the job inventories, and the TE and TD data were used in several analyses discussed later in this report.

Training Emphasis (TE). TE indicates the amount of structured training that personnel in their first job need to successfully perform tasks. Structured training is defined as training provided by resident technical schools, field training detachments (FTD), mobile training teams (MTT), formal OJT, or any other organized training method. Seventy-eight supervisors (35 Pavements Maintenance (AFSC 551X0), and 43 Construction Equipment (AFSC 551X1)) completed TE booklets. They rated the tasks on a 10-point scale ranging from no training required (0) to extremely high TE (9). The overall 551XX average TE rating is 2.71, with a standard deviation of 1.42. The 551X0 average TE rating is 2.71, with a standard deviation of 1.44. The 551X1 average TE rating is 2.59, with a standard deviation of 1.42. Interrater agreement for all iterations was acceptable.

When TE ratings are used with other information, such as percent members performing and TD, they can provide insight into training requirements and help validate the need for organized training for the career ladder.

Task Difficulty (TD). TD is defined as the length of time the average airman takes to learn how to perform a task. Ninety-five supervisors (42 Pavements Maintenance (AFSC 551X0) and 53 Construction Equipment (AFSC 551X1)) rated the difficulty of learning the tasks on a 9-point scale ranging from 1 (easy to learn) to 9 (very difficult to learn). Ratings were adjusted, so tasks of average difficulty have a value of 5.0, with a standard deviation of 1. Interrater agreement was acceptable.

TABLE 1
COMMAND DISTRIBUTION OF AFSC 551XX PERSONNEL

<u>COMMAND</u>	<u>PERCENT OF ASSIGNED*</u>	<u>PERCENT OF SAMPLE**</u>
TAC	23	22
SAC	20	19
USAFE	14	16
MAC	10	11
PACAF	10	10
ATC	7	7
AFSC	5	4
AAC	4	3
AFLC	4	4
OTHER (7 MAJCOM)	3	4

Total in Sample = 2,488

Total Assigned = 3,795

Total Eligible = 3,230

Percent of Eligible in Sample = 77%

Percent of Assigned in Sample = 66%

* Assigned strength as of 17 April 1990

** Excludes those personnel in PCS, student,
or hospital status or with less than 6
weeks on the job

TABLE 1A
COMMAND DISTRIBUTION OF AFSC 551X0 PERSONNEL

<u>COMMAND</u>	<u>PERCENT OF ASSIGNED*</u>	<u>PERCENT OF SAMPLE**</u>
TAC	24	23
SAC	22	21
USAFE	12	13
MAC	11	12
PACAF	9	10
ATC	6	7
AFLC	5	4
AFSC	4	4
AAC	3	3
OTHER (5 MAJCOM)	4	4

Total in Sample = 1,179

Total Assigned = 1,786

Total Eligible = 1,516

Percent of Assigned in Sample = 66%

Percent of Eligible in Sample = 78%

* Assigned strength as of 17 April 1990

** Excludes those personnel in PCS, student, or hospital status or with less than 6 weeks on the job

NOTE: Percentages may add to more or less than 100 percent due to rounding

TABLE 1B
COMMAND DISTRIBUTION OF AFSC 551X1 PERSONNEL

<u>COMMAND</u>	<u>PERCENT OF ASSIGNED*</u>	<u>PERCENT OF SAMPLE**</u>
TAC	22	21
SAC	18	18
USAFE	16	17
PACAF	10	10
MAC	9	10
ATC	6	7
AFSC	5	5
AAC	5	4
AFLC	4	3
OTHER (7 MAJCOM)	4	6

Total in Sample = 1,241
Total Assigned = 1,913
Total Eligible = 1,630

Percent of Assigned in Sample = 65%
Percent of Eligible in Sample = 76%

* Assigned strength as of 17 April 1990
** Excludes those personnel in PCS, student, or hospital status or with less than 6 weeks on the job

NOTE: Percentages may add to more or less than 100 percent due to rounding

TABLE 2
PAYGRADE DISTRIBUTION OF 551XX SURVEY SAMPLE

<u>GRADE</u>	<u>PERCENT OF ASSIGNED*</u>	<u>PERCENT OF SAMPLE</u>
AIRMAN	36	36
SRA/SGT	28	25
SSGT	20	22
TSGT	9	8
MSGT	6	5
SMSGT	1	1
CMSGT	1	1

* Assigned strength as of April 1990

NOTE: Percentages may add to more or less than
100 percent due to rounding

TABLE 2A
PAYGRADE DISTRIBUTION OF 551X0 SURVEY SAMPLE

<u>GRADE</u>	<u>PERCENT OF ASSIGNED*</u>	<u>PERCENT OF SAMPLE</u>
AIRMAN	45	47
SRA/SGT	25	21
SSGT	17	20
TSGT	8	7
MSGT	5	5
SMSGT	-	0
CMSGT	0	0

* Assigned strength as of April 1980
- Indicates less than 1 percent

TABLE 2B
PAYGRADE DISTRIBUTION OF 551X1 SURVEY SAMPLE

<u>GRADE</u>	<u>PERCENT OF ASSIGNED*</u>	<u>PERCENT OF SAMPLE</u>
AIRMAN	29	28
SRA/SGT	32	31
SSGT	23	25
TSGT	10	10
MSGT	5	6
SMSGT	-	0
CMSGT	0	0

* Assigned strength as of April 1990
- Indicates less than 1 percent

NOTE: Percentages may add to more or less than
100 percent due to rounding

TD ratings, when used with percent members performing values and TE ratings, can provide a great deal of insight into training requirements, help validate the need for organized training, and be used to examine plans of career ladder instruction.

SPECIALTY JOBS (Career Ladder Structure)

A USAF occupational analysis begins with an examination of the career ladder structure of jobs performed by personnel holding the DAFSC. Each individual in the sample performs a set of tasks called a job. An automated job clustering program organizes individual jobs into similar units of work. This hierarchical grouping is a basic part of the Comprehensive Occupational Data Analysis Programs (CODAP) system for job analysis. Each individual job description (all the tasks performed by an individual and the relative amount of time spent on those tasks) in the sample is compared to every other job description in terms of tasks performed and the relative amount of time spent on each task in the job inventory. The automated system is designed to locate the two job descriptions with the most similar tasks and percent time ratings and combine them to form a composite job description. In successive stages, new members are added to initial groups, or new groups are formed based on the similarity of tasks performed and similar time ratings in the individual job descriptions.

The basic identifying group used in the hierarchical job structuring process is the Job. When there is a substantial degree of similarity between jobs, they are grouped together and identified as a Job Cluster. Specialized jobs too dissimilar to fit within a job cluster are labeled Independent Jobs. The job structure information resulting from this grouping process (the various jobs within the career ladder) can be used to evaluate the accuracy of that occupation's documentation (AFR 39-1 Specialty Descriptions and Specialty Training Standards) and gain a better understanding of current utilization patterns within the occupation. For this report, the career ladder structure is described in terms of job clusters and jobs.

Overview of Specialty Jobs

Each job inventory can be broken down into at least two categories of duties which help identify and define specific jobs. The categories are conventionally separated into a general area dealing with supervisory, managerial, training, and administrative duties, and a technical area which includes the occupational-specific technical duties.

The relative time spent in a specific duty provides a guide to the different aspects of a job, but is not in itself indicative of that particular job. High relative time spent in a duty must also be viewed from the task level to properly identify the job. Tasks from a number of different duties may be combined to identify and define a job.

Responses from AFSC 551XX personnel comprising the survey sample indicate a job structure where personnel from both AFSCs, perform many of the same tasks. Based on variations in the combinations of tasks performed and relative time spent on those tasks, job structure analysis identified 17 jobs within the survey sample. These jobs consist of 7 clusters and 10 independent jobs. The division of jobs performed by personnel in the survey sample is illustrated in Figure 1. Figures 1a (Pavement Maintenance) and 1b (Construction Equipment) reflect the breakout of these jobs by career ladder. Pavement Maintenance personnel perform in 13 of the jobs identified, while construction equipment personnel are found in all 17 jobs. A listing of these jobs is provided below. The stage (ST) or group (GP) number shown beside each title is a reference to computer printed information. The letter "N" stands for the number of personnel in each group.

- I. DUMP TRUCK DRIVER (ST170, N=12)
- II. PAVEMENT MAINTENANCE SPECIALIST (ST096, N=149)
- III. CONSTRUCTION EQUIPMENT OPERATOR (ST153, N=85)
- IV. GROUNDS MAINTENANCE SPECIALIST (GP214, N=76)
- V. BASE AREA MAINTENANCE TECHNICIAN (ST112, N=1,637)
- VI. GRADER OPERATOR (ST144, N=7)
- VII. CRANE OPERATOR (ST197, N=9)
- VIII. DOZER/SCRAPER OPERATOR (ST317, N=10)
- IX. SNOW REMOVAL SPECIALIST (ST206, N=10)
- X. RANGE OPERATIONS SPECIALIST (ST265, N=5)
- XI. CONSTRUCTION EQUIPMENT INSPECTOR (ST145, N=5)
- XII. HEAVY EQUIPMENT INSTRUCTOR (ST164, N=11)
- XIII. SUPPLY NCO (ST150, N=6)
- XIV. SUPERVISOR (ST083, N=246)
- XV. VEHICLE CONTROLLER (ST081, N=28)
- XVI. ENGINEERING SUPPORT MANAGER (ST137, N=5)
- XVII. QUALITY ASSURANCE NCO (ST159, N=7)

PAVEMENTS MAINTENANCE (551X0) AND CONSTRUCTION EQUIPMENT (551X1) SPECIALTY JOBS (N= 2,488)

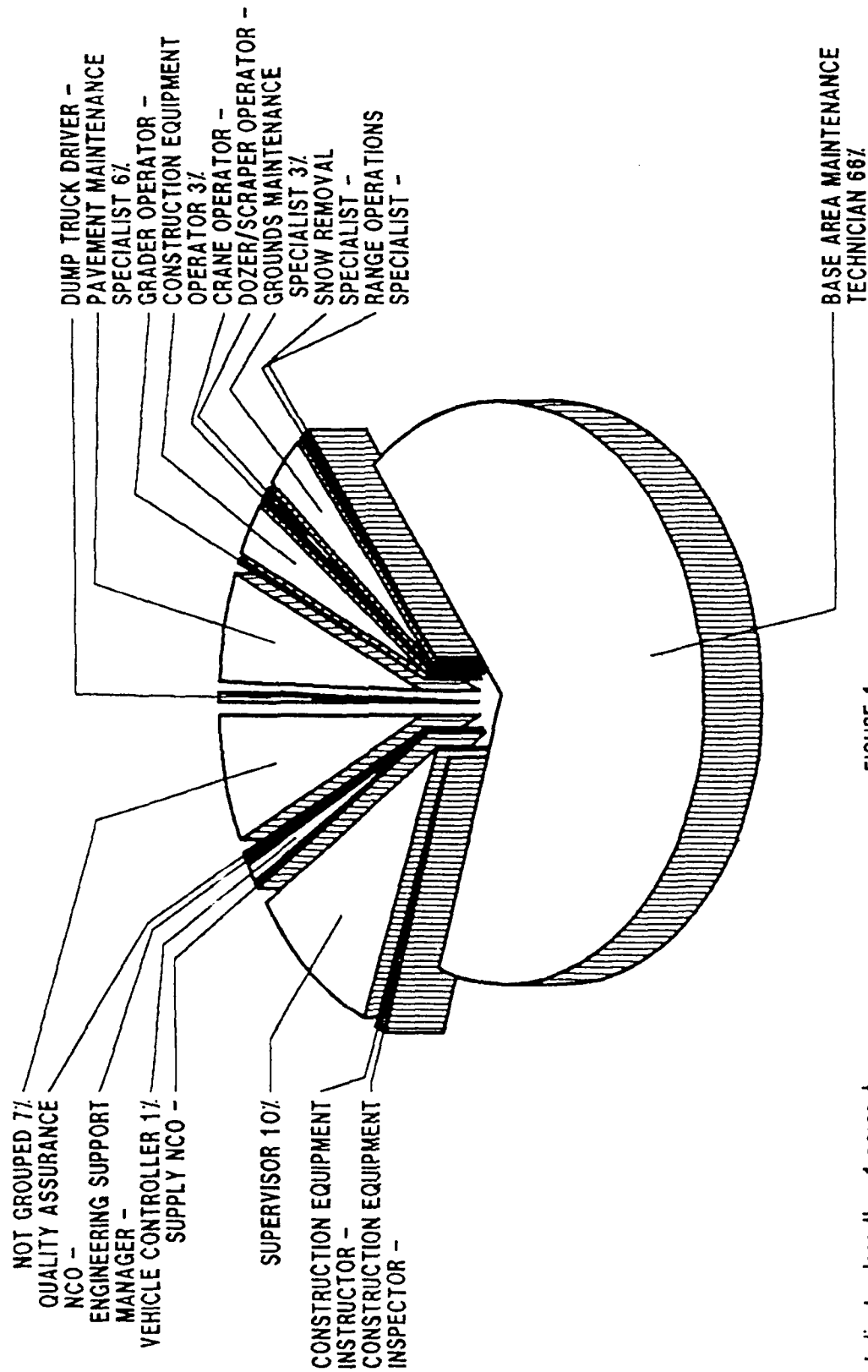
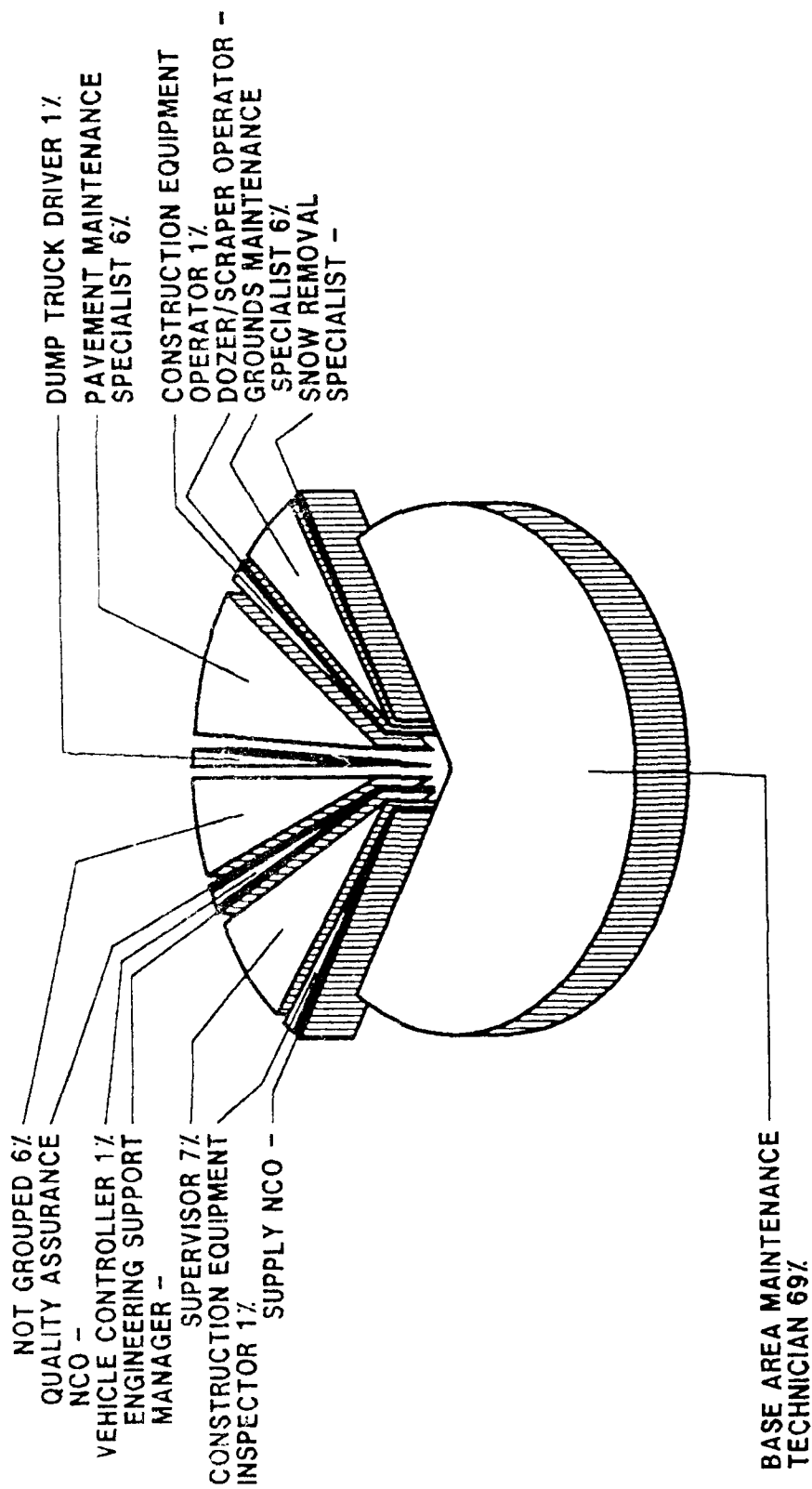


FIGURE 1

PAVEMENTS MAINTENANCE (551XO) SPECIALTY JOBS (N= 1,179)



- Indicates less than 1 percent

FIGURE 1A

CONSTRUCTION EQUIPMENT (551X1) SPECIALTY JOBS (N= 1,241)

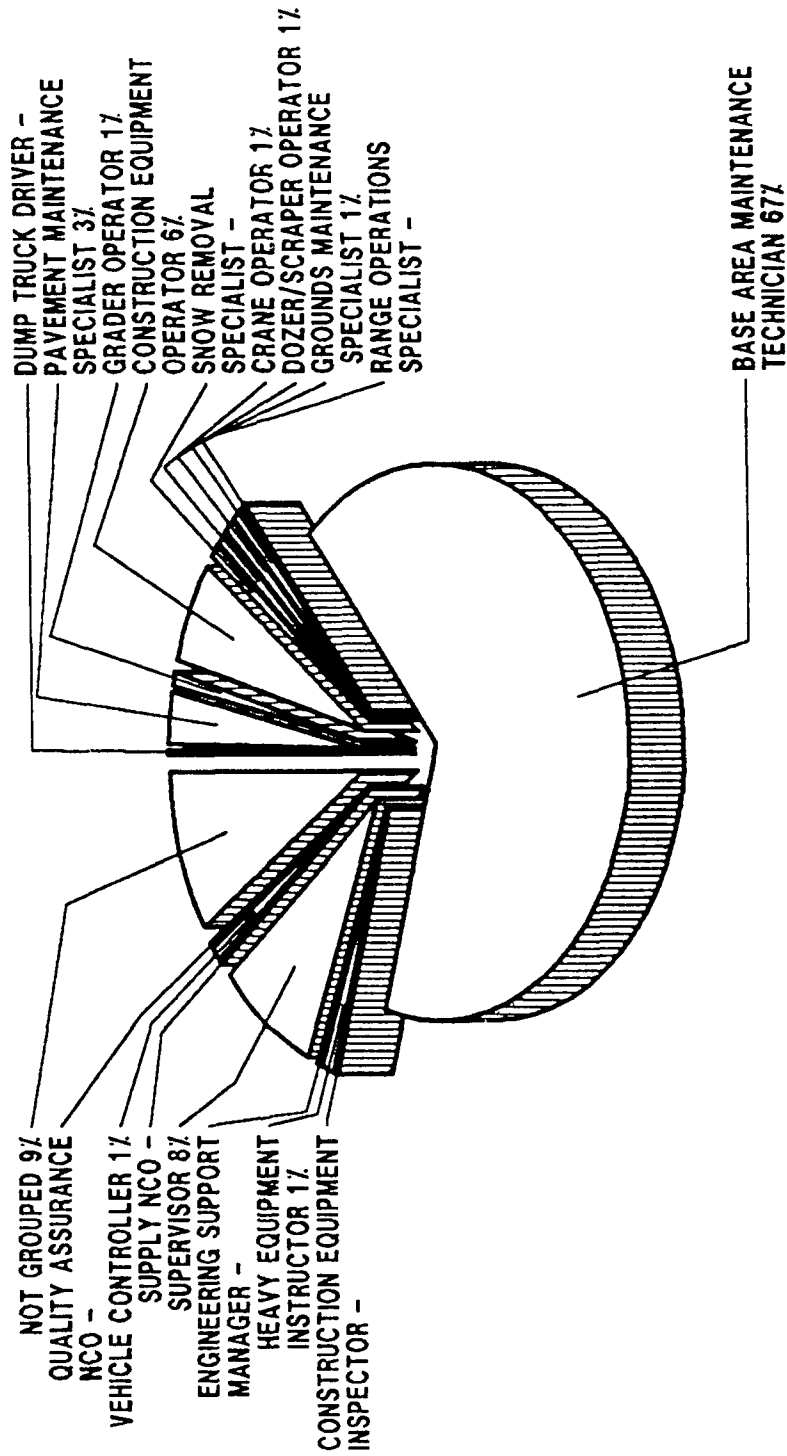


FIGURE 1B

- Indicates less than 1 percent

The respondents forming these jobs account for 93 percent of the survey sample. The remaining 7 percent were performing tasks or series of tasks which did not group them with any of the defined jobs. Job titles given by respondents which were representative of these personnel included Readiness NCO, NCOIC Railroads Section, Signs Maker, and Quarry Instructor.

Table 3 shows the relative time spent in each duty for each job while selected background data for the jobs are provided in Table 4. Representative tasks performed in each job are contained in Appendix A.

The following paragraphs contain brief descriptions of the 17 specific jobs listed above:

I. DUMP TRUCK DRIVER (ST170, N=12). This small job cluster, with 12 junior individuals, is a narrow one in which the incumbents spend a good portion of their time performing tasks involved with the operation of dump trucks. Eighty-four percent of the time accounted for in this job is taken up by tasks in four duties (Operating Dump Trucks, Front-End Loaders, and Forklifts (43 Percent); Performing Fencing and Grounds Maintenance Activities (23 percent); Performing General Pavements Activities (9 percent); and Operating Miscellaneous Equipment (9 percent)). The remaining 16 percent of the time is spread among 12 of the other 20 duties. The airmen holding this job have an average grade of E-3, with only one indicating any supervisory responsibility. They report performing an average of 24 tasks and show the following to be representative:

- dump materials from dump trucks with tailgate down
- dump materials from dump trucks with tailgate up
- haul materials using dump trucks
- perform operator inspections and maintenance on
dump trucks
- tow equipment using dump trucks
- haul materials using forklifts

II. PAVEMENT MAINTENANCE SPECIALIST (ST096, N=149). This cluster, which includes 6 percent of the survey sample, encompasses core tasks of the AFSC 551X0 career ladder, dealing with construction and maintenance of pavement. Seventy-five percent of the relative time spent in this job has to do with four duties dealing with pavement maintenance activities (Performing and Maintaining Rigid Pavements and Concrete Structures (28 percent); Operating Dump Trucks, Front-End Loaders, and Forklifts (21 Percent); Performing General Pavements Activities (18 percent); and Operating Miscellaneous Equipment (8 percent)). The remaining 25 percent of the relative time is spread among 20 of the other 21 duties. Within this cluster are eight variations which can be accounted for by the percent of time spent on the different aspects of pavement maintenance, such as the types of pavement worked on most and the time spent doing general pavements activities. The personnel in this job perform an average of 54 tasks, with the following being representative:

TABLE 3

RELATIVE PERCENT TIME SPENT PERFORMING DUTIES ACROSS PAVEMENT MAINTENANCE
AND CONSTRUCTION EQUIPMENT JOB GROUPS

DUTIES	DUMP TRUCK DRIVER (N=12)	PAVEMENT MAINT SPECL (N=149)		CONST EQUIP OPR (N=85)	GROUNDS MAINT SPECL (N=76)		BASE AREA MAINT TECH (N=1,637)		GRADER OPR (N=7)		CRANE OPR (N=9)		DOZER/ SCRAPER OPR (N=10)	
A ORGANIZING AND PLANNING	2		1	1	1	1	1	1	3	7			1	1
B DIRECTING AND IMPLEMENTING	-		1	2	1	1	2	2	5	10			1	1
C INSPECTING AND EVALUATING	-		-	-	1	1	1	1	1	7			-	-
D TRAINING	-		-	1	-	-	1	1	7	6			-	-
E PERFORMING ADMINISTRATIVE ACTIVITIES	-		1	3	2	2	2	2	1	10			1	1
F PERFORMING GENERAL PAVEMENTS ACTIVITIES	9		18	6	7	7	8	4	4	2			2	2
G CONSTRUCTING AND MAINTAINING RIGID PAVEMENTS AND CONCRETE STRUCTURES	6		28	3	3	3	15	3	3	3			1	1
H CONSTRUCTING AND MAINTAINING FLEXIBLE PAVEMENTS	2		8	1	1	1	6	1	1	1			-	-
I CONSTRUCTING AND MAINTAINING DRAINAGE SYSTEMS	1		1	1	2	2	3	1	1	1			1	1
J CONSTRUCTING BUNKERS AND REVETMENTS	0		-	-	-	-	-	-	-	-			-	-
K PERFORMING RAPID RUNWAY REPAIR (RRR) ACTIVITIES	1		1	5	7	7	4	2	2	2			3	3
L PERFORMING FENCING AND GROUNDS MAINTENANCE ACTIVITIES	23		5	3	41	41	5	2	2	1			4	4
M OPERATING DUMP TRUCKS, FRONT-END LOADERS, AND FORKLIFTS	43		21	38	17	17	18	14	9	9			19	19
N OPERATING BACKHOES AND INDUSTRIAL TRACTORS WITH ATTACHMENTS	1		2	7	4	4	6	7	4	4			4	4
O OPERATING GRADERS AND ATTACHMENTS	2		-	4	-	-	4	21	4	4			11	11
P OPERATING TRACK-MOUNTED OR WHEEL-MOUNTED DOZERS AND ATTACHMENTS	0		-	5	-	-	4	4	4	4			23	23
Q OPERATING SCRAPERS	0		0	-	0	0	-	-	-	-			15	15
R OPERATING CRANES AND ATTACHMENTS	0		-	1	-	-	2	15	13	13			-	-
S OPERATING MISCELLANEOUS EQUIPMENT	9		6	15	8	8	9	5	5	10			13	13
T PERFORMING SNOW REMOVAL AND ICE CONTROL ACTIVITIES	0		4	3	3	3	5	3	3	5			0	0
U PERFORMING MISSILE SUPPORT ACTIVITIES	1		-	-	-	-	-	1	1	0			0	0
V RIGGING OR HOISTING EQUIPMENT	0		-	-	-	-	1	1	1	1			-	-
W PERFORMING WELL-DRILLING ACTIVITIES	0		-	0	0	0	-	0	0	0			0	0
X PERFORMING RANGE SUPPORT ACTIVITIES	0		-	1	-	-	-	-	-	-			0	0
Y PERFORMING SPECIALIZED ACTIVITIES	1		-	-	-	-	1	0	0	1			-	-

- Indicates less than 1 percent

TABLE 3 (CONTINUED)

RELATIVE PERCENT TIME SPENT PERFORMING DUTIES ACROSS PAVEMENT MAINTENANCE
AND CONSTRUCTION EQUIPMENT JOB GROUPS

DUTIES	SNOW REMOVAL SPECL (N=10)	RANGE OPNS SPECL (N=5)	CONST EQUIP INSP (N=5)	HEAVY EQUIP INSTR (N=11)	SUPPLY NCO (N=6)	SUPVR (N=246)	VEHICLE CONTROL (N=28)	ENGRG SPT MGR (N=5)	QUALITY ASSURANCE NCO (N=7)
A ORGANIZING AND PLANNING	0	2	3	7	9	22	14	28	27
B DIRECTING AND IMPLEMENTING	1	3	1	8	9	23	18	46	25
C INSPECTING AND EVALUATING	-	1	2	6	11	19	14	20	31
D TRAINING	-	-	3	49	6	7	10	0	5
E PERFORMING ADMINISTRATIVE ACTIVITIES	-	1	12	4	23	14	39	6	6
F PERFORMING GENERAL PAVEMENTS ACTIVITIES	8	-	0	1	-	2	0	1	0
G CONSTRUCTING AND MAINTAINING RIGID PAVEMENTS AND CONCRETE STRUCTURES	3	1	2	-	2	3	0	0	0
H CONSTRUCTING AND MAINTAINING FLEXIBLE PAVEMENTS	5	0	1	0	3	-	0	0	0
I CONSTRUCTING AND MAINTAINING DRAINAGE SYSTEMS	1	0	0	-	1	3	0	0	0
J CONSTRUCTING BUNKERS AND REVETMENTS	0	-	0	0	1	-	0	0	0
K PERFORMING RAPID RUNWAY REPAIR (RRR) ACTIVITIES	0	17	2	0	5	2	2	0	4
L PERFORMING FENCING AND GROUNDS MAINTENANCE ACTIVITIES	5	1	0	1	1	2	0	0	0
M OPERATING DUMP TRUCKS, FRONT-END LOADERS, AND FORKLIFTS	25	11	17	4	10	2	1	0	0
N OPERATING BACKHOES AND INDUSTRIAL TRACTORS WITH ATTACHMENTS	2	-	9	2	1	-	-	0	0
O OPERATING GRADERS AND ATTACHMENTS	1	1	5	10	-	-	-	0	0
P OPERATING TRACK-MOUNTED OR WHEEL-MOUNTED DOZERS AND ATTACHMENTS	2	3	4	0	1	-	-	0	0
Q OPERATING SCRAPERS	0	0	2	0	0	-	0	0	0
R OPERATING CRANES AND ATTACHMENTS	0	5	3	0	1	-	-	0	0
S OPERATING MISCELLANEOUS EQUIPMENT	7	7	29	5	10	1	1	0	-
T PERFORMING SNOW REMOVAL AND ICE CONTROL ACTIVITIES	39	0	1	-	0	1	1	0	0
U PERFORMING MISSILE SUPPORT ACTIVITIES	0	0	0	0	0	-	0	0	0
V RIGGING OR HOISTING EQUIPMENT	0	-	-	0	1	-	0	0	0
W PERFORMING WELL-DRILLING ACTIVITIES	0	0	0	0	0	-	0	0	0
X PERFORMING RANGE SUPPORT ACTIVITIES	0	42	2	0	0	-	0	0	2
Y PERFORMING SPECIALIZED ACTIVITIES	-	3	1	1	3	1	-	0	-

- Indicates less than 1 percent

TABLE 4

SELECTED BACKGROUND DATA FOR MEMBERS OF AFSC 551XX JOB GROUPS

	DUMP TRUCK DRIVER	PAVEMENT		CONST EQUIP OPR	GROUNDS		BASE AREA		GRADER OPR	CRANE		DOZER/ SCRAPER OPR
		MAINT	SPECL		MAINT	SPECL	MAINT	TECH		OPR	OPR	
NUMBER IN GROUP	12	149		85	76		1,637		7	9		10
PERCENT OF TOTAL SAMPLE	-	6%		3%	3%		66%		-	-		-
PERCENT IN CONUS	58%	79%		40%	36%		72%		71%	56%		100%

DAFSC DISTRIBUTION												
55130	58%	60%		2%	49%		21%		0	0		0
55150	8%	13%		5%	25%		21%		0	0		10%
55170	0	1%		1%	3%		7%		0	0		0
55131	33%	19%		29%	13%		14%		0	0		60%
55151	0	5%		58%	11%		29%		43%	22%		30%
55171	0	1%		5%	0		8%		57%	78%		0
55199	0	0		0	0		0		0	0		0
55100	0	0		0	0		0		0	0		0

PAYGRADE DISTRIBUTION												
AIRMAN	83%	85%		34%	64%		38%		29%	0		60%
E-4	17%	7%		42%	26%		31%		14%	0		30%
E-5	0	7%		28%	9%		24%		14%	56%		10%
E-6	0	1%		4%	0		5%		43%	33%		0
E-7	0	0		0	0		1%		0	11%		0
E-8	0	0		0	0		0		0	0		0
E-9	0	0		0	0		0		0	0		0

AVERAGE MONTHS IN CAREER FIELD	16	23		57	31		62		104	149		29
AVERAGE MONTHS TAFMS	18	29		63	37		68		110	155		31
PERCENT FIRST ENLISTMENT (TAFMS)	100%	89%		56%	79%		51%		29%	0		90%
PERCENT FIRST ASSIGNMENT (TICF)	91%	89%		57%	80%		54%		42%	0		90%
PERCENT SUPERVISING	8%	9%		19%	20%		35%		57%	89%		10%
AVERAGE NUMBER OF TASKS PERFORMED	21	54		81	62		192		112	148		74

TABLE 4 (CONTINUED)

SELECTED BACKGROUND DATA FOR MEMBERS OF AFSC 551XX JOB GROUPS

	SNOW REMOVAL SPECL	RANGE OPNS SPECL	CONST EQUIP INSP	HEAVY EQUIP INSTR	SUPPLY NCO	SUPR	VEHICLE CONTORL	ENGRG SPT MGR	QUALITY ASSURANCE NCO
NUMBER IN GROUP	10	5	5	11	6	246	28	5	7
PERCENT OF TOTAL SAMPLE	-	-	-	-	-	10%	1%	-	-
PERCENT IN CONUS	10%	100%	80%	100%	33%	68%	86%	100%	71%

DAFSC DISTRIBUTION									
55130	40%	0	0	0	0	-	0	0	0
55150	20%	0	0	0	17%	5%	18%	0	0
55170	0	0	40%	0	17%	29%	18%	20%	43%
55131	40%	0	0	0	0	0	0	0	0
55151	0	80%	60%	73%	17%	5%	21%	0	0
55171	0	20%	0	27%	50%	35%	39%	20%	29%
55199	0	0	0	0	0	17%	0	0	29%
55100	0	0	0	0	0	8%	4%	60%	0

PAYGRADE DISTRIBUTION									
AIRMAN	80%	0	0	0	0	1%	0	0	0
E-4	20%	20%	20%	0	0	2%	14%	0	0
E-5	0	60%	60%	73%	67%	13%	36%	0	14%
E-6	0	20%	20%	27%	17%	26%	32%	20%	0
E-7	0	0	0	0	17%	37%	14%	20%	57%
E-8	0	0	0	0	0	14%	0	0	29%
E-9	0	0	0	0	0	8%	4%	60%	0

AVERAGE MONTHS IN CAREER FIELD	21	118	159	105	133	183	133	240	199
AVERAGE MONTHS TAFMS	23	119	168	124	153	196	157	246	199
PERCENT FIRST ENLISTMENT (TAFMS)	90%	0	0	0	0	2%	8%	0	0
PERCENT FIRST ASSIGNMENT (TICF)	90%	0	0	0	17%	4%	7%	0	0
PERCENT SUPERVISING	0	40%	60%	0	67%	91%	18%	0	29%
AVERAGE NUMBER OF TASKS PERFORMED	49	90	38	37	76	92	29	8	26

- break concrete using jackhammers
- dump materials from dump trucks with tailgate up
- break asphalt or concrete using handtools, other than jackhammers
- finish concrete pavements using brooms
- break asphalt using jackhammers
- finish concrete pavements by hand

Although this job deals with duties and tasks associated with the Pavement Maintenance (AFSC 551X0) career ladder, 25 percent of the airmen who perform this job have a DAFSC of 551X1. The incumbents report an average grade of E-3, with 85 percent in grade E-3 or below. Only 9 percent of these personnel report supervising anyone. The average time in the career field (TICF) for personnel in this job is 23 months, with an average 29 months total active federal military service (TAFMS).

III. CONSTRUCTION EQUIPMENT OPERATOR (ST153, N=85). This job cluster entails the performance of those basic tasks required of an individual in the Construction Equipment career ladder. These include tasks such as those associated with the operation of dump trucks, forklifts, front-end loaders, sweepers and dozers. The incumbents spend 53 percent of their relative time performing tasks found in two duties: Operating Dump Trucks, Front-End Loaders, and Forklifts (38 Percent); and Operating Miscellaneous Equipment (15 percent). Another 10 duties account for 41 percent of the relative time, with the 6 percent left spread among 12 of the remaining 13 duties. The three subgroups of this cluster differ in total number of tasks performed, the percent of time on different types of equipment and, to a lesser degree, the percent of relative time for the predominant tasks. An average of 81 tasks are performed by the incumbents of this job, with the following being typical:

- haul materials using dump trucks
- level areas by backdragging using wheel-mounted front-end loaders
- stockpile materials using wheel-mounted front-end loaders
- load or off-load materials or equipment using forklifts
- spread materials using wheel-mounted front-end loaders
- clear vegetation or debris from area using construction equipment

Ninety-two percent of the airmen found in this job report having a DAFSC of 55131, 55151, or 55171. The incumbents are a comparatively junior group, with an average grade of E-4 and 56 percent being in their first enlistment. They average 57 months TICF and 63 months TAFMS. Nineteen percent indicate being supervisors.

IV. GROUNDS MAINTENANCE SPECIALIST (GP214, N=76). Incumbents (3 percent of the sample) in this job cluster spend a great deal of their time performing tasks associated with base grass care and maintenance. Forty-one percent of their time is devoted to performing fencing and grounds maintenance activities. Operating dump trucks, front-end loaders, and forklifts takes another 17 percent, with operating miscellaneous equipment at 8 percent and performing general pavements and rapid runway repair (RRR) activities, each accounting for 7 percent. The remaining 20 percent of their relative time includes performing tasks from 18 of the other 20 duties. There are four subgroups in this cluster which differ based on the emphasis and amount of time spent on peripheral duties, such as operating dump trucks or miscellaneous equipment. One group also provides first-line supervision. Of the average of 39 tasks performed in this job, the following are representative:

- cut grass using weed eaters
- cut grass using hand mowers or self-propelled mowers
- edge grass areas using weed eaters
- cut grass using tractors with mower attachments
- haul materials using dump trucks
- clear vegetation or debris from area using handtools

Personnel with both AFSCs 551X0 and 551X1 are found in this job and are comparatively junior, with an average grade of E-3 and averaging only 31 months TICF and 37 months TAFMS. Sixty-four percent of the incumbents are overseas, the highest percent for any job. There are 20 percent of these airmen who report supervisory responsibility.

V. BASE AREA MAINTENANCE TECHNICIAN (ST112, N=1,637). This is the largest and broadest job cluster found in the survey sample. The 1,637 members represent 66 percent of the total survey population. This job entails the physical maintenance of base facilities, such as roads, runways, fences, and grounds and operating the equipment necessary to accomplish it. The job incorporates the responsibilities of the previous four jobs. The incumbents spend time performing tasks from all 25 duties, 1 of only 2 jobs in which this is found. Tasks which account for 67 percent of the relative time spent in this job are from the seven top duties of Operating Dump Trucks, Front-End Loaders, and Forklifts (18 Percent); Constructing and Maintaining Rigid Pavements and Concrete Structures (15 percent); Operating Miscellaneous Equipment (9 percent); Performing General Pavements Activities (8 percent); Operating Backhoe and Industrial Tractors with Attachments (6 percent); Constructing and Maintaining Flexible Pavements (6 percent); and Performing Fencing and Grounds Maintenance Activities (5 percent). The other 33 percent of relative time is spent performing tasks in the remaining 18 duties. There are six major subgroups in this cluster which differ, based on the amount of time spent on tasks and where specific emphasis is placed, but overall they are the same job. They vary in such ways as a group being concerned with missile facilities; another deals a little more with rapid runway repair;

while another operates construction equipment more; and one includes first-line supervisors. The average number of tasks performed in this job is 192, the greatest average number for any job. The following are examples of the tasks performed:

- haul materials using dump trucks
- break concrete using jackhammers
- spread materials from dump trucks
- clear vegetation or debris from area using construction equipment
- finish concrete pavements by hand
- level areas by backdragging using wheel-mounted front-end loaders

Both AFSC 551X0 (49 percent) and 551X1 (51 percent) personnel are found in this job. The average grade of the incumbents is E-4, with an average of 62 months TICF and 68 months TAFMS. Thirty-five percent of the members of the cluster indicate they supervise one or more individuals.

VI. GRADER OPERATOR (ST144, N=7). This small independent job, with less than 1 percent of the sample population, is one where the members specialize in operating a grader. Twenty-one percent of the time spent in this job is on operating graders and attachments. Another 29 percent is split between operating cranes (15 percent) and operating dump trucks, front-end loaders, and forklifts (14 percent). Twenty of the other 22 duties account for the remaining 50 percent relative time spent. The personnel holding this job have either a 55151 or 55171 DAFSC. They have an average grade of E-5 and average 104 months TICF and 110 months TAFMS. The following tasks are typical of the average of 112 performed by airmen in this job:

- crown dirt roads using graders
- cut and fill using graders
- perform operator inspections and maintenance on graders
- windrow materials using graders
- haul materials using dump trucks
- attach or remove grader attachments

VII. CRANE OPERATOR (ST197, N=9). The individuals in this small independent job perform tasks in 23 duties, but their main focus is on operation of cranes. Thirty-two percent of their relative time is devoted to doing tasks in three technical duties-Operating Cranes and Attachments (13 percent); Operating Miscellaneous Equipment (10 percent); and Operating Dump Trucks, Front-End Loaders, and Forklifts (9 percent). In addition, 40 percent of their relative time is spent on tasks in the administrative, supervisory, and training duties of Directing and Implementing (10 percent), Performing Administrative Activities (10 percent), Inspecting and Evaluating (7 percent),

Organizing and Planning (7 percent), and Training (6 percent). The remaining 28 percent of the relative time in this job is spread among the other 15 duties. The incumbents all have a 55151 or 55171 DAFSC. The average grade for the job is E-6, with 89 percent of the individuals reporting being supervisors. The airmen in this job average 149 months TICF and 155 months TAFMS. Of the average 148 tasks performed in this job, the following are representative:

- determine safe lifting capacity using load charts
- drive wheel-mounted cranes to or from work areas
- inspect crane cables
- prepare loads for lifting by chains
- set outriggers for crane operation
- perform operator inspections and maintenance on tractor trailers

VIII. DOZER/SCRAPER OPERATOR (ST317, N=10). The 10 airmen found in this small independent job perform a full gamut of tasks related to the construction equipment operator career ladder, with particular emphasis on dozer and scraper operations. There are five duties which account for 81 percent of the relative time of this job--Operating Track-Mounted or Wheel-Mounted Dozers and Attachments (23 percent); Operating Dump Trucks, Front-End Loaders, and Forklifts (19 Percent); Operating Scrapers (15 percent); Operating Miscellaneous Equipment (13 percent); and Operating Graders and Attachments (11 percent). The remaining 19 percent of their relative time is spent on 15 other duties. This job includes a relatively junior group of personnel (average grade E-3), with 60 percent reporting a DAFSC of 55131, 30 percent with DAFSC 55151, and 10 percent holding a 55150 DAFSC. The incumbents of this job come from only two bases, Vandenberg AFB CA (70 percent) and Edwards AFB CA (30 percent). The survey data show that 90 percent of the incumbents are in their first enlistment, with an average 29 months TICF and 31 months TAFMS. These airmen perform an average of 74 tasks, with the following being typical:

- perform operator inspections and maintenance on track-mounted dozers
- haul materials using motorized scrapers
- backdrag using track-mounted dozers
- backfill using track-mounted dozers
- stockpile materials using track-mounted dozers
- maintain sanitary fills using track-mounted dozers

IX. SNOW REMOVAL SPECIALIST (ST206, N=10). This independent job entails mainly tasks associated with snow removal and the equipment used for that purpose. Tasks from only 16 of the 25 duties are performed by the incumbents of this job. Performing Snow Removal and Ice Control Activities, with 39 percent relative time spent, and Operating Dump Trucks, Front-End Loaders, and Forklifts, with 25 percent, are the major duties found in this job. Four

other duties (Performing General Pavements Activities (8 percent), Operating Miscellaneous Equipment (7 percent), Constructing and Maintaining Flexible Pavements (5 percent), and Performing Fencing and Grounds Maintenance Activities (5 percent)) account for another 25 percent of their relative time, with the remaining 10 percent being divided among the other 10 duties. Both AFSCs are represented in this job, with 90 percent assigned to Alaska and 10 percent to Griffiss AFB NY. The average grade for personnel holding this job is E-3, and they report averages of 21 months TICF and 23 months TAFMS. There are no supervisors among the incumbents. The job includes an average of 49 tasks, with the following being typical:

- haul materials using dump trucks
- clean snow from snow removal equipment
- haul snow using dump trucks
- load snow into trucks using track-mounted or wheel-mounted front-end loaders
- remove snow using air blast snow sweepers
- perform operator inspections and maintenance on snow removal equipment
- clear snow or ice from runway lights

X. RANGE OPERATIONS SPECIALIST (ST265, N=5). This small, independent job provides support for gunnery ranges, which includes positioning or clearing target vehicles and constructing targets. The major duties found in this job take up 77 percent of the relative time and are: Performing Range Support Activities (42 percent); Performing Rapid Runway Repair (RRR) Activities (17 percent); Operating Dump Trucks, Front-End Loaders, and Forklifts (11 percent); and Operating Miscellaneous Equipment (7 percent). Fifteen other duties take up the remaining 33 percent of their relative time. Airmen in this job report an average grade of E-5, a TICF average of 118 months, and a TAFMS average of 119 months. The incumbents of this job are all assigned to Eglin AFB FL, hold a 55151 or 55171 DAFSC, and average 90 tasks performed, with the following being representative:

- clear destroyed heavy armor from range
- construct wooden targets or storage areas
- coordinate bomb removal with Explosive Ordnance Disposal (EO)
- coordinate clearance for range targets with Range Operations Control Center
- install target areas
- load or off-load damaged armored equipment onto or from trailers

XI. CONSTRUCTION EQUIPMENT INSPECTOR (ST145, N=5). This small, independent job is rather narrow and requires the performance of tasks associated with inspecting and performing operator maintenance on construction

equipment. They inspect equipment prior to and after use by equipment operators. These five individuals report spending 67 percent of their relative time performing tasks in four duties--Operating Miscellaneous Equipment (29 percent); Operating Dump Trucks, Front-End Loaders, and Forklifts (17 percent); Performing Administrative Activities (12 percent); and Operating Backhoe and Industrial Tractors with Attachments (9 percent). The remaining 33 percent of the relative time is divided among 15 of the other 21 duties. Both AFSCs are represented in this job. The average grade for personnel holding this job is E-5, and they report averages of 159 months TICF and 168 months TAFMS. The job includes an average of 38 tasks, with the following being typical:

- perform operator inspections and maintenance on
dump trucks
- perform operator inspections and maintenance on
wheel-mounted front-end loaders
- perform operator inspections and maintenance on
graders
- perform operator inspections and maintenance on
backhoes
- perform operator inspections and maintenance on
forklifts
- perform operator inspections and maintenance on
track-mounted front-end loaders

XII. HEAVY EQUIPMENT INSTRUCTOR (ST164, N=11). Training individuals on how to operate pieces of construction heavy equipment is the main thrust of this job. Forty-nine percent of the incumbent's relative time is spent performing tasks in the training duty. An additional 25 percent of the time is spent performing tasks in three supervisory and one administrative duties; Directing and Implementing (8 percent), Organizing and Planning (7 percent), Inspecting and Evaluating (6 percent), and Performing Administrative Activities (4 percent). Operating Graders (10 percent); Operating Miscellaneous Equipment (5 percent); Operating Dump Trucks, Front-End Loaders, and Forklifts (4 percent); and the other eight duties (7 percent) represent the technical aspects and tasks taught in the course. All of the incumbents have AFSC 551X1 and are assigned to Fort Leonard Wood MO, where the construction equipment school is located. Airmen in this job report an average grade of E-5, a TICF average of 105 months, and TAFMS average of 124 months. The airmen holding this job average 37 tasks performed, with the following being representative:

- administer tests
- conduct resident course classroom training
- counsel trainees on training progress
- prepare lesson plans
- prepare training aids
- evaluate progress of trainees

XIII. SUPPLY NCO (ST150, N=6). The Supply NCO is an independent job and encompasses normal supply functions of receiving, storing, and issuing supplies and equipment. The incumbents report spending 58 percent of their relative time performing tasks in the supervisory and administrative duties; Performing Administrative Activities (23 percent), Inspecting and Evaluating (11 percent), Directing and Implementing (9 percent), Organizing and Planning (9 percent), and Training (6 percent). Additionally, two technical duties, Operating Miscellaneous Equipment and Operating Dump Trucks, Front-End Loaders, and Forklifts, each account for 10 percent of the relative time spent in this job. The remaining 22 percent of the relative time is divided among 13 of the remaining 18 duties. Five- and 7-skill level personnel from both AFSCs are represented in this job. The average grade for personnel holding this job is E-6, and they report averages of 133 months TICF and 153 months TAFMS. The job includes an average of 76 tasks, with the following being typical:

- determine requirements for space, personnel, equipment, or supplies
- annotate or initiate AF Forms 1806 (Operator's Inspection Guide and Trouble Report (Special Equipment))
- annotate or initiate AF Forms 2005 (Issue/Turn in Request)
- attach or annotate equipment status labels or tags, such as DD Forms 1574 (Serviceable Tag - Materiel)
- inventory equipment, tools, or supplies
- evaluate procedures for storage, inventory, or inspection of property items

XIV. SUPERVISOR (ST083, N=246). This job cluster, with 10 percent of the survey sample, provides the higher level supervision and enlisted management for both career ladders and the previous 13 jobs reported. Eighty-five percent of the relative time for this job is spent on the performance of tasks found in the 5 administrative and supervisory duties of Directing and Implementing (23 percent), Organizing and Planning (22 percent), Inspecting and Evaluating (19 percent), Performing Administrative Activities (14 percent), and Training (7 percent). The remaining 15 percent relative time is divided among the remaining 20 duties. There are eight major subgroups in this cluster, which differ based on where specific supervisory and managerial emphasis is placed and the number and types of extraneous tasks performed which are not necessarily associated with supervision. One subgroup is concerned with grounds maintenance organizations, another deals with pavement maintenance organizations, while another supervises construction equipment organizations, one includes combined pavement and equipment shop superintendents, and another includes supervisors of organizations concerned with well digging. Overall, however, the primary thrust of this job is supervising and managing organizations, and all subgroups perform the same basic job. The incumbents average 92 tasks performed, with the following being representative:

- counsel subordinates on personal or military-related problems
- coordinate work activities with other civil engineering shops
- determine work priorities
- write EPRs
- determine requirements for space, personnel, equipment, or supplies
- schedule leaves or passes

Airmen in this job report an average grade of E-6, a TICF average of 183 months, and TAFMS average of 196 months. Personnel with 5- and 7-skill levels from both AFSCs and the 9-skill level and CEM are found in this job. Ninety-one percent of these individuals report supervising at least one individual.

XV. VEHICLE CONTROLLER (ST081, N=28). This small job cluster, with 1 percent of the survey sample, entails the administrative control of vehicles used by pavement maintenance and construction equipment organizations. Thirty-nine percent of the incumbents' relative time is spent performing administrative tasks, while 56 percent is spent performing tasks in the three supervisory and one training duty (Directing and Implementing (18 percent), Inspecting and Evaluating (14 percent), Organizing and Planning (24 percent), and Training (10 percent)). The remaining 5 percent of the relative time is spread among nine other duties. There are two subgroups identified in this cluster, and they vary based on slight differences in relative time spent on tasks and the overall number of tasks performed. The airmen holding this job average 29 tasks performed, with the following being typical:

- annotate or initiate AF Forms 171 (Request for Driver's Tng and Additions to U.S. Government Motor Veh Opr's Permit)
- annotate or initiate AF Forms 1806 (Operator's Inspection Guide and Trouble Report (Special Equipment))
- annotate or initiate AF Forms 1800 (Operator's Inspection Guide and Trouble Report (General Purpose Vehicles))
- write correspondence
- complete accident or incident report forms
- plan or prepare briefings

The average grade for incumbents of this job is E-6, and they average 133 months TICF and 157 months TAFMS. Personnel with 5- and 7-skill level from both AFSCs and CEM personnel are found in this job.

XVI. ENGINEERING SUPPORT MANAGER (ST137, N=5). The Engineering Support manager is an independent job which encompasses high level managing of engineering support activities. The incumbents report spending 100 percent of their relative time performing tasks in only five duties. These duties are

the four supervisory and administrative duties; Directing and Implementing (45 percent), Organizing and Planning (28 percent), Inspecting and Evaluating (20 percent), Performing Administrative Activities (6 percent); and one technical duty, Performing General Pavements Activities (1 percent). Seven-skill level personnel from both AFSCs and CEM personnel are represented in this job. This job has the most senior personnel of the survey sample, with the average grade reported as E-8 and averages of 240 months TICF and 246 months TAFMS. None of the incumbents indicated they supervise anyone. The job includes an average of only eight tasks, with the following most common:

- conduct or participate in staff meetings
- write correspondence
- plan or prepare briefings
- implement self-inspection programs
- evaluate new equipment
- evaluate suggestions
- write staff studies, surveys, or special reports,
other than training reports

XVII. QUALITY ASSURANCE NCO (ST159, N=7). This independent job, with less than 1 percent of the survey sample, provides specialized quality assurance for the engineering projects worked on by members of the surveyed population. The incumbents report spending 94 percent of their relative time performing tasks in the five supervisory administrative and training duties; Inspecting and Evaluating (31 percent), Organizing and Planning (27 percent), Directing and Implementing (25 percent), Performing Administrative Activities (6 percent), and Training (5 percent). The remaining 6 percent of the relative time is spent performing four technical duties. Seven-skill level personnel from both AFSCs and 9-skill level personnel are represented in this job. The average grade of the incumbents is E-7, and they average 199 months TICF and 199 months TAFMS. The job includes an average of 26 tasks, with the following being representative:

- plan or prepare briefings
- conduct or participate in staff meetings
- write correspondence
- develop self-inspection programs
- draft budget requirements
- evaluate inspection reports or procedures

Summary

Although analysis of the survey data identified 17 jobs (7 job clusters and 10 independent jobs), accounting for 93 percent of the survey sample, these career ladders are not as diverse as might appear. The previously mentioned fact that a number of bases established single Pavement and Equipment shops in the mid-1980's, utilizing all personnel for base-area maintenance activities, resulted in a great deal of cross-training and

cross-utilization over the past few years. As a consequence, the Base Area Maintenance Technician job cluster, which includes both DAFSCs 551X0 and 551X1 personnel and accounts for 66 percent of the sample population, was identified as the primary core job of the sample. Four smaller job clusters, including 22 percent of the survey population and personnel with both DAFSCs, were identified as secondary jobs. The remaining 12 job clusters and independent jobs, account for 5 percent of the sample and are specialized jobs covering limited areas. Four of these jobs include only DAFSC 551X1 personnel. Seven percent of the airmen in the sample were not found in any of the identified jobs.

Comparison of Current Survey to Previous Survey

The results of the specialty job analysis were compared to those of Occupational Survey Report (OSR) AFPT 90-551-443, PAVEMENT MAINTENANCE SPECIALIST (AFSC 551X0) AND CONSTRUCTION EQUIPMENT OPERATOR (AFSC 551X1), dated August 1982. Table 5 displays a comparison of the specialty jobs identified in each of the two studies. After reviewing the tasks comprising the jobs identified in 1982, it was determined that 11 of the 12 groups could be linked with similar task performances of the 1991 sample groups. The appearance of differences (i.e., some of the specific job titles) is a surface difference only and can be attributed to modifications to the task list or to the analysis and the analytical approach used.

Although 7 of the 17 jobs in the 1991 survey are not identified with jobs of the 1982 survey, they account for less than 3 percent of the population and are indicative of minor variations involving small numbers of specialized personnel (i.e., the identification of the Grader Operator personnel). It can be stated that the vast majority of the current sample could be matched to jobs identified in 1982. The major difference between the two studies is the percent of personnel found in each job. An example is the greater percent of personnel in the Base Area Maintenance Technician job of the present sample compared to the small percent in the 1982 sample. This can be attributed to the combined Pavement Maintenance and Equipment shops found at many bases now, as opposed to separate shops prior to the previous survey and, as a result, a different concept of utilizing personnel. This also accounts for the decrease in percent of personnel previously found in the Pavement Maintenance Personnel and Construction Equipment Operator clusters compared to the present jobs.

ANALYSIS OF DUTY AIR FORCE SPECIALTY CODE (DAFSC) GROUPS

Duty Air Force Specialty Code (DAFSC) group analysis allows identification of similarities and differences in task and duty performance at the various skill levels. This information may be used to evaluate how well career ladder documents, such as AFR 39-1 Specialty Descriptions and the Specialty Training Standard (STS) reflect what is actually being done by career ladder personnel in the field.

TABLE 5

JOB SPECIALTY COMPARISONS BETWEEN CURRENT AND 1982 SURVEYS

SPECIALTY JOBS CURRENT SURVEY (N=2,488)	PERCENT OF SAMPLE	SPECIALTY JOBS 1982 SURVEY (N=1,643)	PERCENT OF SAMPLE
DUMP TRUCK DRIVER CLUSTER	-	DUMP TRUCK AND FRONT-END LOADER OPERATORS	1%
PAVEMENT MAINTENANCE SPECIALIST CLUSTER	6%	PAVEMENT MAINTENANCE PERSONNEL CLUSTER	28%
CONSTRUCTION EQUIPMENT OPERATOR CLUSTER	3%	CONSTRUCTION EQUIPMENT OPERATOR CLUSTER	30%
GROUND MAINTENANCE SPECIALIST CLUSTER	3%	GROUND MAINTENANCE PERSONNEL	2%
BASE AREA MAINTENANCE TECHNICIAN CLUSTER	66%	BASE AREA MAINTENANCE PERSONNEL	2%
		MISSILE SUPPORT PERSONNEL	1%
SNOW REMOVAL SPECIALIST	-	SNOW REMOVAL EQUIPMENT OPERATORS	2%
RANGE OPERATIONS SPECIALIST	-	GUNNERY RANGE PERSONNEL	2%
HEAVY EQUIPMENT INSTRUCTOR	-	TRAINERS	1%
SUPERVISOR	10%	MANAGERIAL PERSONNEL CLUSTER	8%
ENGINEERING SUPPORT MANAGER	-	SNOW REMOVAL SUPERVISORS	3%
NOT IDENTIFIED		SWEEPER OPERATORS	1%
GRADER OPERATOR	-	NOT IDENTIFIED	
CRANE OPERATOR	-	NOT IDENTIFIED	
DOZER/SCRAPER OPERATOR	-	NOT IDENTIFIED	
ENGINEERING EQUIPMENT INSPECTOR	-	NOT IDENTIFIED	
SUPPLY NCO	-	NOT IDENTIFIED	
VEHICLE CONTROLLER	1%	NOT IDENTIFIED	
QUALITY CONTROL NCO	-	NOT IDENTIFIED	
NOT GROUPED	8%	NOT GROUPED	18%

The distribution of skill-level personnel across the 17 specialty jobs is shown in Table 6. Table 7 reflects the relative time spent by the DAFSC groups on each duty. Tables 8 through 15 provide listings of representative tasks performed by personnel in the different DAFSCs.

Both the Pavements Maintenance and Construction Equipment Operator career ladders show a typical progression pattern as one advances from skill level to skill level. As experience is gained in the career ladder, the nature of the job expands. It goes from a narrow semi-skilled job at the 3-skill level, where personnel perform limited AFSC-related tasks, through the broader and more technically skilled 5-skill level jobs, to the extensive jobs of the 7-skill level technician supervisor. The career ladders most appropriately merge into the 9-skill level superintendent responsible for broad supervision and management, with little, if any, technical task performance. The final step is to the CEM level, with the enlisted managerial responsibility for Pavements Maintenance and Construction Equipment in the Air Force.

AFSC 551X0

DAFSC 55130. The 508 individuals in this group (representing 20 percent of the overall survey sample and 43 percent of the 551X0 sample), have a comparatively narrow role in the career ladder. Incumbents are found in only 7 of the 13 identified jobs for the career ladder, as shown in Table 6. The 3-skill level is the stage where individuals start to learn their jobs through limited responsibility and task performance. As can be seen in Table 7, 78 percent of the relative time for this skill level is spent in six duties--Constructing and Maintaining Rigid Pavements and Concrete Structures (21 percent); Operating Dump Trucks, Front-End Loaders, and Forklifts (20 percent); Performing General Pavements Activities (12 percent); Performing Fencing and Grounds Maintenance Activities (10 percent); Operating Miscellaneous Equipment (8 percent), and Constructing and Maintaining Flexible Pavements (7 percent). These airmen report performing an average of 128 tasks, with 50 percent of their relative time spent on 74 of those tasks. Table 8 provides a representative list of the tasks performed by a majority of the incumbents.

DAFSC 55150. Comprising 18 percent of the overall sample and 38 percent of the 551X0 sample, the 444 individuals holding DAFSC 55150 do a technical job similar to the 3-skill level personnel, with increased aspects of supervision (Table 7). Table 6 shows the 10 jobs performed by 5-skill level personnel. The majority (78 percent) are found in the Base Area Maintenance Technician job. Sixty-three percent of the relative time for this group is spent in the same major duties found for the 3-skill level group, but 13 percent of the time is found in the five duties (A through E) having supervisory, managerial, training, and administrative tasks. This reflects the difference in the two skill levels. An average of 155 tasks is performed by the incumbents, with 75 accounting for 50 percent of the time. Representative tasks for this group are displayed in Table 9. Forty-five percent of the 5-skill level personnel indicate they supervise another airman.

TABLE 6

DISTRIBUTION OF DAFSC 551XX MEMBERS ACROSS SPECIALTY JOBS

SPECIALTY JOBS	DAFSC 55130 (N=508)		DAFSC 55150 (N=444)		DAFSC 55170 (N=227)	
	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT
I. DUMP TRUCK DRIVER	7	1%	1	-	0	0
II. PAVEMENT MAINTENANCE SPECIALIST	89	18%	20	5%	1	-
III. CONSTRUCTION EQUIPMENT OPERATOR	2	-	4	1%	1	-
IV. GROUNDS MAINTENANCE SPECIALIST	37	7%	19	4%	2	1%
V. BASE AREA MAINTENANCE TECHNICIAN	348	69%	345	78%	116	51%
VI. GRADER OPERATOR	0	0	0	0	0	0
VII. CRANE OPERATOR	0	0	0	0	0	0
VIII. DOZER/SCRAPER OPERATOR	0	0	1	-	0	0
IX. SNOW REMOVAL SPECIALIST	4	1%	2	-	0	0
X. RANGE OPERATIONS SPECIALIST	0	0	0	0	0	0
XI. CONSTRUCTION EQUIPMENT INSPECTOR	0	0	0	0	2	1%
XII. HEAVY EQUIPMENT INSTRUCTOR	0	0	0	0	0	0
XIII. SUPPLY NCO	0	0	1	-	1	-
XIV. SUPERVISOR	1	-	13	3%	72	32%
XV. VEHICLE CONTROLLER	0	0	5	1%	5	2%
XVI. ENGINEERING SUPPORT MANAGER	0	0	0	0	1	-
XVII. QUALITY ASSURANCE NCO	0	0	0	0	3	1%
NOT GROUPED	20	4%	33	7%	23	0%
		100%		100%		100%

- Indicates less than 1 percent

TABLE 6 (CONTINUED)

DISTRIBUTION OF DAFSC 551XX MEMBERS ACROSS SPECIALTY JOBS

SPECIALTY JOBS	DAFSC 55131 (N=334)		DAFSC 55151 (N=616)		DAFSC 55171 (N=291)	
	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT
I. DUMP TRUCK DRIVER	4	1%	0	0	0	0
II. PAVEMENT MAINTENANCE SPECIALIST	29	9%	8	1%	2	1%
III. CONSTRUCTION EQUIPMENT OPERATOR	25	7%	49	8%	4	1%
IV. GROUNDS MAINTENANCE SPECIALIST	10	3%	8	1%	0	0
V. BASE AREA MAINTENANCE TECHNICIAN	225	67%	467	76%	136	47%
VI. GRADER OPERATOR	0	0	3	-	4	1%
VII. CRANE OPERATOR	0	0	2	-	7	2%
VIII. DOZER/SCRAPER OPERATOR	6	2%	3	-	0	0
IX. SNOW REMOVAL SPECIALIST	4	1%	0	0	0	0
X. RANGE OPERATIONS SPECIALIST	0	0	4	1%	1	-
XI. CONSTRUCTION EQUIPMENT INSPECTOR	0	0	3	-	0	0
XII. HEAVY EQUIPMENT INSTRUCTOR	0	0	8	1%	3	1%
XIII. SUPPLY NCO	0	0	1	-	3	1%
XIV. SUPERVISOR	1	-	13	2%	85	29%
XV. VEHICLE CONTROLLER	0	0	6	1%	11	4%
XVI. ENGINEERING SUPPORT MANAGER	0	0	0	0	1	-
XVII. QUALITY ASSURANCE NCO	0	0	0	0	2	1%
NOT GROUPED	30	9%	41	7%	29	10%
		100%		100%		100%

- Indicates less than 1 percent

TABLE 6 (CONTINUED)

DISTRIBUTION OF DAFSC 551XX MEMBERS ACROSS SPECIALTY JOBS

SPECIALTY JOBS	DAFSC 55199 (N=44)		DAFSC 55100 (N=24)	
	NUMBER	PERCENT	NUMBER	PERCENT
I. DUMP TRUCK DRIVER	0	0	0	0
II. PAVEMENT MAINTENANCE SPECIALIST	0	0	0	0
III. CONSTRUCTION EQUIPMENT OPERATOR	0	0	0	0
IV. GROUNDS MAINTENANCE SPECIALIST	0	0	0	0
V. BASE AREA MAINTENANCE TECHNICIAN	0	0	0	0
VI. GRADER OPERATOR	0	0	0	0
VII. CRANE OPERATOR	0	0	0	0
VIII. DOZER/SCRAPER OPERATOR	0	0	0	0
IX. SNOW REMOVAL SPECIALIST	0	0	0	0
X. RANGE OPERATIONS SPECIALIST	0	0	0	0
XI. CONSTRUCTION EQUIPMENT INSPECTOR	0	0	0	0
XII. HEAVY EQUIPMENT INSTRUCTOR	0	0	0	0
XIII. SUPPLY NCO	0	0	0	0
XIV. SUPERVISOR	42	95%	19	79%
XV. VEHICLE CONTROLLER	0	0	1	4%
XVI. ENGINEERING SUPPORT MANAGER	0	0	3	13%
XVII. QUALITY ASSURANCE NCO	2	5%	0	0
NOT GROUPED	0	<u>0</u>	1	<u>4%</u>
		100%		100%

- Indicates less than 1 percent

TABLE 7

AVERAGE PERCENT TIME SPENT PERFORMING DUTIES BY DAFSC 551XX GROUPS

DUTIES	DAFSC 55130 (N=508)	DAFSC 55131 (N=334)	DAFSC 55150 (N=444)	DAFSC 55151 (N=616)	DAFSC 55170 (N=227)	DAFSC 55171 (N=291)	DAFSC 55199 (N=44)	DAFSC 55100 (N=24)
A ORGANIZING AND PLANNING	-	-	2	2	11	11	26	25
B DIRECTING AND IMPLEMENTING	-	1	3	3	12	13	27	23
C INSPECTING AND EVALUATING	-	-	2	2	9	9	28	30
D TRAINING	-	-	2	3	5	6	5	5
E PERFORMING ADMINISTRATIVE ACTIVITIES	1	1	4	4	11	10	12	12
F PERFORMING GENERAL PAVEMENTS ACTIVITIES	12	9	9	6	6	3	0	1
G CONSTRUCTING AND MAINTAINING RIGID PAVEMENTS AND CONCRETE STRUCTURES	21	11	17	9	11	4	-	-
H CONSTRUCTING AND MAINTAINING FLEXIBLE PAVEMENTS	7	4	6	3	4	2	0	-
I CONSTRUCTING AND MAINTAINING DRAINAGE SYSTEMS	3	2	3	2	2	1	-	-
J CONSTRUCTING BUNKERS AND REVETMENTS	-	-	-	-	-	-	0	-
K PERFORMING RAPID RUNWAY REPAIR (RRR) ACTIVITIES	4	3	4	4	3	3	1	-
L PERFORMING FENCING AND GROUNDS MAINTENANCE ACTIVITIES	10	7	7	5	4	2	-	-
M OPERATING DUMP TRUCKS, FRONT-END LOADERS, AND FORKLIFTS	20	25	16	19	9	10	-	1

- Indicates less than 1 percent

TABLE 7 (CONTINUED)

AVERAGE PERCENT TIME SPENT PERFORMING DUTIES BY DAFSC 551XX GROUPS

DUTIES	DAFSC 55130 (N=508)	DAFSC 55131 (N=334)	DAFSC 55150 (N=444)	DAFSC 55151 (N=616)	DAFSC 55170 (N=227)	DAFSC 55171 (N=291)	DAFSC 55199 (N=44)	DAFSC 55100 (N=24)
N OPERATING BACKHOES AND INDUSTRIAL TRACTORS WITH ATTACHMENTS	4	7	5	7	3	3	-	0
O OPERATING GRADERS AND ATTACHMENTS	1	4	2	6	1	5	0	-
P OPERATING TRACK-MOUNTED OR WHEEL-MOUNTED DOZERS AND ATTACHMENTS	2	5	2	5	1	3	-	-
Q OPERATING SCRAPERS	-	1	-	6	-	-	0	0
R OPERATING CRANES AND ATTACHMENTS	-	1	1	3	-	4	0	0
S OPERATING MISCELLANEOUS EQUIPMENT	8	11	8	11	4	6	-	1
T PERFORMING SNOW REMOVAL AND ICE CONTROL ACTIVITIES	4	6	3	4	3	3	1	-
U PERFORMING MISSILE SUPPORT ACTIVITIES	-	-	-	-	-	-	0	0
V RIGGING OR HOISTING EQUIPMENT	-	1	-	1	-	-	0	0
W PERFORMING WELL-DRILLING ACTIVITIES	-	-	1	-	-	-	0	0
X PERFORMING RANGE SUPPORT ACTIVITIES	-	-	-	1	-	-	0	0
Y PERFORMING SPECIALIZED ACTIVITIES	-	1	1	1	1	1	-	1

- Indicates less than 1 percent

TABLE 8
REPRESENTATIVE TASKS PERFORMED BY DAFSC 55130 PERSONNEL

TASKS	PERCENT MEMBERS PERFORMING (N=508)
M523 Haul materials using dump trucks	90
M518 Dump materials from dump trucks with tailgate up	90
M517 Dump materials from dump trucks with tailgate down	88
M538 Perform operator inspections and maintenance on dump trucks	85
M554 Tow equipment using dump trucks	81
G188 Break concrete using jackhammers	86
H259 Break asphalt using jackhammers	83
F162 Clear vegetation or debris from area using handtools	80
F171 Excavate areas using handtools	76
F166 Compact base course materials or subgrade using small powered equipment or hand tampers	80
F160 Break asphalt or concrete using handtools, other than jackhammers	81
G208 Finish concrete pavements using brooms	82
G207 Finish concrete pavements by hand	82
F174 Install or remove signs	77
G218 Level concrete using hand screeds	75

TABLE 9
REPRESENTATIVE TASKS PERFORMED BY DAFSC 55150 PERSONNEL

TASKS	PERCENT MEMBERS PERFORMING (N=444)
M523 Haul materials using dump trucks	88
M518 Dump materials from dump trucks with tailgate up	88
M538 Perform operator inspections and maintenance on dump trucks	85
M517 Dump materials from dump trucks with tailgate down	84
M554 Tow equipment using dump trucks	82
G208 Finish concrete pavements using brooms	82
G207 Finish concrete pavements by hand	81
G188 Break concrete using jackhammers	78
H259 Break asphalt using jackhammers	78
F162 Clear vegetation or debris from area using handtools	78
M549 Spread materials from dump trucks	77
F166 Compact base course materials or subgrade using small powered equipment or hand tampers	77
M542 Perform operator inspections and maintenance on wheel-mounted front-end loaders	76
F171 Excavate areas using handtools	75
G218 Level concrete using hand screeds	75
G211 Finish concrete surfaces using bullfloats	75

DAFSC 55170. This group, 9 percent of the overall survey sample and 19 percent of the 551X0 sample, are the expert technicians and the supervisors for the Pavements Maintenance career ladder. They perform an average of 151 tasks. These incumbents are found in 10 of the jobs identified, as shown in Table 6. Seventy-four percent of the 55170 personnel report supervising at least one individual, and the entire group indicates that 48 percent of their relative time is spent on tasks in the supervisory, managerial and administrative duties (A through E), as reflected in Table 7. These data indicate that, in addition to supervisory tasks, 55170 personnel are also involved, to a limited degree, in performing technical AFSC-related tasks associated with day-to-day Pavements Maintenance operations. Table 10 provides a listing of representative tasks performed by a majority of the incumbents.

AFSC 551X1

DAFSC 55131. Personnel with DAFSC 55131 make up 13 percent of the overall sample and 27 percent of the 551X1 sample. These are the beginners in the operation of construction equipment who have learned how to do it, but must gain the experience to become true operators. Their limited role is evident in the fact that they are found in only 8 of the 17 jobs held by 551X1 personnel. Sixty-seven percent are found in the Base Area Maintenance job. Twenty-five percent of the incumbents' relative time is spent operating dump trucks, front-end loaders, and forklifts, while an additional 31 percent is spent performing tasks in three other duties (Constructing and Maintaining Rigid Pavements and Concrete Structures (11 percent), Operating Miscellaneous Equipment (11 percent), and Performing General Pavements Activities (9 percent)). These personnel indicate they perform an average of 126 tasks, with 50 percent of their relative time spent on 85 of those tasks. Table 11 provides a representative list of the tasks performed by a majority of these incumbents.

DAFSC 55151. The 616 personnel holding DAFSC 55151 constitute 25 percent of the total survey population and 50 percent of the 551X1 sample. These personnel are more proficient than the 3-skill level airmen and are more likely to operate different pieces of equipment. They perform in 13 of the 17 jobs identified (see Table 6), with 76 percent found in the Base Area Maintenance Technician job. Eighty-six percent of the relative time for this group is spent in technical duties (see Table 7), with only two duties having greater than 10 percent; Operating Dump Trucks, Front-End Loaders, and Forklifts (19 percent) and Operating Miscellaneous Equipment (11 percent). The 14 percent relative time in the supervisory, managerial, training, and administrative duties provides a difference between the 5- and 3-skill level jobs. The incumbents perform an average of 182 tasks, with 50 percent of the time taken up by 137 tasks. Representative tasks for this group are displayed in Table 12. Forty-four percent of this group indicate they are supervisors.

DAFSC 55171. This group of 291 airmen consists of the expert construction equipment operators and provide the supervision for the career ladder. The group represents 12 percent of the total sample and 23 percent of the 551X1 sample. These incumbents are found in 12 of the jobs identified, as shown in Table 6. The data reflected in Table 7 indicate the incumbents spend an average of 49 percent of their relative time in the supervisory, managerial,

TABLE 10
REPRESENTATIVE TASKS PERFORMED BY DAFSC 55170 PERSONNEL

TASKS	PERCENT MEMBERS PERFORMING (N=227)
C89 Write EPRs	76
B27 Counsel subordinates on personal or military-related problems	70
E132 Annotate or initiate AF Forms 1800 (Operator's Inspection Guide and Trouble Report (General Purpose Vehicles))	67
A3 Coordinate work activities with other civil engineering shops	62
B55 Supervise Apprentice Pavements Maintenance Specialists (AFSC 55130)	62
B60 Supervise Pavements Maintenance Specialists (AFSC 55150)	59
G197 Compute concrete requirements	59
M518 Dump materials from dump trucks with tailgate up	59
M538 Perform operator inspections and maintenance on dump trucks	59
M523 Haul materials using dump trucks	58
G207 Finish concrete pavements by hand	57
G208 Finish concrete pavements using brooms	56
A15 Plan or schedule daily work requirements	56
F171 Excavate areas using handtools	56
M517 Dump materials from dump trucks with tailgate down	56

TABLE 11
REPRESENTATIVE TASKS PERFORMED BY DAFSC 55131 PERSONNEL

TASKS	PERCENT MEMBERS PERFORMING (N=334)
M523 Haul materials using dump trucks	92
M518 Dump materials from dump trucks with tailgate up	91
M538 Perform operator inspections and maintenance on dump trucks	90
M517 Dump materials from dump trucks with tailgate down	87
M553 Stockpile materials using wheel-mounted front-end loaders	84
M528 Level areas by backdragging using wheel-mounted front-end loaders	79
M542 Perform operator inspections and maintenance on wheel-mounted front-end loaders	78
F161 Clear vegetation or debris from area using construction equipment	77
M549 Spread materials from dump trucks	76
M554 Tow equipment using dump trucks	75
G188 Break concrete using jackhammers	73
M511 Backfill excavations using wheel-mounted front-end loaders	71
F171 Excavate areas using handtools	70
M551 Spread materials using wheel-mounted front-end loaders	70
M524 Haul materials using forklifts	70

TABLE 12
REPRESENTATIVE TASKS PERFORMED BY DAFSC 55151 PERSONNEL

TASKS	PERCENT MEMBERS PERFORMING (N=616)
M523 Haul materials using dump trucks	88
M518 Dump materials from dump trucks with tailgate up	88
M538 Perform operator inspections and maintenance on dump trucks	88
M517 Dump materials from dump trucks with tailgate down	84
M542 Perform operator inspections and maintenance on wheel-mounted front-end loaders	82
M528 Level areas by backdragging using wheel-mounted front-end loaders	81
M524 Haul materials using forklifts	81
M553 Stockpile materials using wheel-mounted front-end loaders	80
M551 Spread materials using wheel-mounted front-end loaders	80
M532 Load or off-load materials or equipment using forklifts	80
M554 Tow equipment using dump trucks	79
M549 Spread materials from dump trucks	79
M539 Perform operator inspections and maintenance on forklifts	78
F161 Clear vegetation or debris from area using construction equipment	76
M511 Backfill excavations using wheel-mounted front-end loaders	75

training, and administrative duties (A through E). Seventy-nine percent of this group report being supervisors. In addition to supervisory responsibilities, 55171 personnel are also involved to a limited degree in performing AFSC-related tasks associated with day-to-day Construction Equipment operations. A listing of representative tasks performed by a majority of these personnel is found in Table 13.

DAFSC 55199/00

DAFSC 55199. The 44 individuals holding DAFSC 55199 represent 2 percent of the survey sample. They are the supervisors and managers of the combined career ladders, as evidenced by the data showing 95 percent of them are in the Supervisor job (see Table 6) and 98 percent indicating they are supervisors. To a great extent, these individuals are supervisors of supervisors. Ninety-eight percent of the incumbent's time is spent performing tasks in duties A through E (see Table 7), the supervisory, managerial, and administrative duties. These airmen perform an average of 68 tasks, with representative tasks shown in Table 14.

DAFSC 55100. The CEMs of this career ladder, representing 1 percent of the survey sample, are the senior enlisted managers for the Pavements Maintenance and Construction Equipment functional areas. These individuals are found in three of the identified jobs (see Table 6). Seventy-nine percent of the 55100 personnel report supervising at least one individual, and they report 95 percent of their relative time is spent on tasks in the supervisory, managerial, training, and administrative duties (A through E) (see Table 7). These data indicate that with the increased managerial responsibilities, CEM personnel have a very limited association with day-to-day AFSC-related duties. The incumbents report an average of only 54 tasks performed. A listing of representative tasks is found in Table 15.

Summary

AFSC 551XX personnel follow an orderly skill-level progression. The 3-skill level personnel in both DAFSCs have the narrowest technical job for their career ladders, while 5-skill level personnel have a broader job with increased responsibility which includes some first-line supervision. The 7-skill level personnel are the technical experts of the career ladders, with supervisory and managerial responsibilities added to the AFSC-specific technical tasks. The 9-skill level personnel become involved in supervisory and managerial responsibilities for both career ladders, while the CEM are the senior enlisted managers for Pavements Maintenance and Construction Equipment personnel. There is a very clear delineation of the typical career progression from the 3-skill level to the CEM-level in these career ladders.

TABLE 13
REPRESENTATIVE TASKS PERFORMED BY DAFSC 55171 PERSONNEL

TASKS	PERCENT MEMBERS PERFORMING (N=291)
C89 Write EPRs	76
B27 Counsel subordinates on personal or military-related problems	76
E132 Annotate or initiate AF Forms 1800 (Operator's Inspection Guide and Trouble Report (General Purpose Vehicles))	75
B57 Supervise Construction Equipment Operators (AFSC 55151)	70
E133 Annotate or initiate AF Forms 1806 (Operator's Inspection Guide and Trouble Report (Special Equipment))	65
A3 Coordinate work activities with other civil engineering shops	62
E130 Annotate or initiate AF Forms 171 (Request for Driver's Tng and Additions to U.S. Government Motor Veh Opr's Permit)	61
M523 Haul materials using dump trucks	60
C64 Conduct performance feedback worksheet (PFW) sessions	59
B54 Supervise Apprentice Construction Equipment Operators	59
M518 Dump materials from dump trucks with tailgate up	59
A6 Determine work priorities	58
M538 Perform operator inspections and maintenance on dump trucks	57
B26 Conduct or participate in staff meetings	56
A15 Plan or schedule daily work requirements	56
A5 Determine requirements for space, personnel, equipment, or supplies	56

TABLE 14
REPRESENTATIVE TASKS PERFORMED BY DAFSC 55199 PERSONNEL

TASKS	PERCENT MEMBERS PERFORMING (N=44)
A6 Determine work priorities	98
B26 Conduct or participate in staff meetings	98
A3 Coordinate work activities with other civil engineering shops	95
C89 Write EPRs	93
B27 Counsel subordinates on personal or military-related problems	91
C83 Indorse enlisted performance reports (EPRs)	91
B53 Interpret policies, directives, or procedures for subordinates	89
A5 Determine requirements for space, personnel, equipment, or supplies	86
B58 Supervise Construction Equipment Technicians (AFSC 55171)	86
C68 Evaluate job descriptions	84
A4 Coordinate work progress with base civil engineering scheduling	82
A8 Develop self-inspection programs	82
B62 Write correspondence	82
C63 Analyze workload requirements	82
B61 Supervise Pavements Maintenance Technicians (AFSC 55170)	77

TABLE 15
REPRESENTATIVE TASKS PERFORMED BY DAFSC 55100 PERSONNEL

TASKS	PERCENT MEMBERS PERFORMING (N=24)
B26 Conduct or participate in staff meetings	96
A5 Determine requirements for space, personnel, equipment, or supplies	92
B62 Write correspondence	88
A6 Determine work priorities	83
B27 Counsel subordinates on personal or military-related problems	83
A14 Plan or prepare briefings	79
C66 Evaluate budget requirements	79
C83 Indorse enlisted performance reports (EPRs)	79
C89 Write EPRs	79
A10 Draft budget requirements	75
A25 Schedule leaves or passes	75
B53 Interpret policies, directives, or procedures for subordinates	75
B64 Conduct performance feedback worksheet (PFW) sessions	75
C73 Evaluate personnel for compliance with performance standards	75
A9 Develop work methods or procedures	71

ANALYSIS OF AFR 39-1 SPECIALTY DESCRIPTIONS

Occupational survey data were compared to five AFR 39-1 Specialty Descriptions for Pavements and Construction Equipment Superintendent, Pavements Maintenance Technician, Pavements Maintenance Specialist, Construction Equipment Technician, and Construction Equipment Operator, all dated 1 February 1988. The AFR 39-1 descriptions are intended to provide a broad overview of the duties and tasks in each skill level of a specialty.

The Specialty Descriptions accurately reflect the nature of the 3-, 5-, and 7-skill level jobs within both the 551X0 and 551X1 career ladders and the 9-skill level and CEM in their combined role. Three- and 5-skill level jobs are basically composed of technical tasks, 7-skill level jobs are a mix of technical and supervisory tasks, and 9-skill level and CEM jobs are focused on management, supervision, and administrative tasks. The specialty descriptions do not, however, reflect the fact that individuals with one AFSC are performing tasks which are associated with and which are the responsibility of the other AFSC. No major changes are recommended at this time due to the impending merger.

OCCUPATIONAL SURVEY TRAINING ANALYSIS

Occupational survey data are one of the many sources of information that can be used to assist in the development of a training program which is relevant to the needs of personnel in their first enlistment. Factors which may be used in evaluating training include the overall description of the job being performed by first-enlistment personnel and their overall distribution across career ladder jobs, percentages of first-job (1-24 month TAFMS) or first-enlistment (1-48 months TAFMS) members performing specific tasks or using certain equipment or materials, as well as TE and TD ratings.

To assist specifically in the evaluation of the Specialty Training Standards (STS) and the Plans of Instruction (POI), technical school personnel matched job inventory tasks to appropriate sections and subsections of the pertinent STS and POI. Training personnel from the Sheppard Technical Training Center matched the 551X0 STS and 3ABR55130 001 POI, while training personnel from Fort Leonard Wood Training Center matched the 551X1 STS and 3ABR55131 000 POI. Additionally, the proposed draft STS, which is to be used for the upcoming merger of the two career ladders, was also matched by personnel from both training centers. Analysis of those documents was based on these matchings. A complete computer listing displaying the percent members performing tasks, TE and TD ratings for each task, along with the STS and POI matchings, has been forwarded to the technical schools for their use in further detailed reviews of training documents. A summary of this information is presented below.

First-Enlistment Personnel

There are 655 Pavements Maintenance and 529 Construction Equipment personnel in their first enlistment (1-48 months TAFMS), representing 48 percent of the total survey sample. As reflected in Table 16, the majority of their duty time is devoted to performing tasks in AFSC-specific duties. Distribution of these personnel across the specialty jobs is displayed in Figure 2 for the combined group, Figure 2A for 551X0 personnel, and Figure 2B for 551X1 personnel. This shows that the combined group of first-enlistment personnel perform in 10 of the 17 identified jobs, with 70 percent of them found in the Base Area Maintenance Technician job, 11 percent in the Pavements Maintenance Specialist job, and 4 percent in each of the Construction Equipment Specialist and Grounds Maintenance Specialist jobs. Four percent of the personnel are performing the other six jobs, while the remaining 7 percent perform tasks or series of tasks which did not group them with any of the defined jobs. Table 17 shows representative tasks performed by all 551XX first-enlistment personnel.

One of the objectives of this survey project was to gather data for the technical training centers pertaining to types of equipment used by personnel in the field. Table 18 presents a listing of equipment used by greater than 30 percent of the personnel in any of the first-enlistment groups. This type of information is useful to both technical schools and MAJCOM training personnel to assist them in focusing limited training time or other resources on the most appropriate types of equipment used by these personnel. These data should be of value during the merger and as a basis for the critical pieces of equipment that should be used for training in a new combined course.

DAFSC 551X0 First-Enlistment Personnel. Of the 655 DAFSC 551X0 members in their first enlistment, representing 56 percent of the 551X0 survey sample, 94 percent of them are found in three jobs (Figure 2A). These are Base Area Maintenance Technician (71 percent), Pavement Maintenance Specialist (16 percent), and Grounds Maintenance Specialist (7 percent). Two percent of this group perform in the remaining six jobs, with another 4 percent not grouped in any job. Table 16 shows these personnel spend approximately 97 percent of their duty time performing technical tasks, with the majority of this time (51 percent) spent in three duties, Constructing and Maintaining Rigid Pavements and Concrete Structures (20 percent); Operating Dump Trucks, Front-End Loaders, and Forklifts (19 percent); and Performing General Pavements Activities (12 percent). Table 17 shows representative tasks performed by first-enlistment 551X0 personnel, and Table 18 provides a list of the equipment used by this same group.

DAFSC 551X1 First-Enlistment Personnel. The 529 DAFSC 551X1 personnel in their first enlistment account for 43 percent of the 551X1 sample. They can be found in 10 of the 17 specialty jobs (Figure 2B), with the Base Area Maintenance Technician job accounting for 71 percent of these airmen. The next largest percentage (8 percent) of personnel is found in the Construction Equipment Specialist job. Seven percent of these individuals are not grouped in any job, leaving the remaining 14 percent working in the other eight jobs.

FIRST-ENLISTMENT AFSC 551XX PERSONNEL IN SPECIALTY JOBS (N= 1,194)

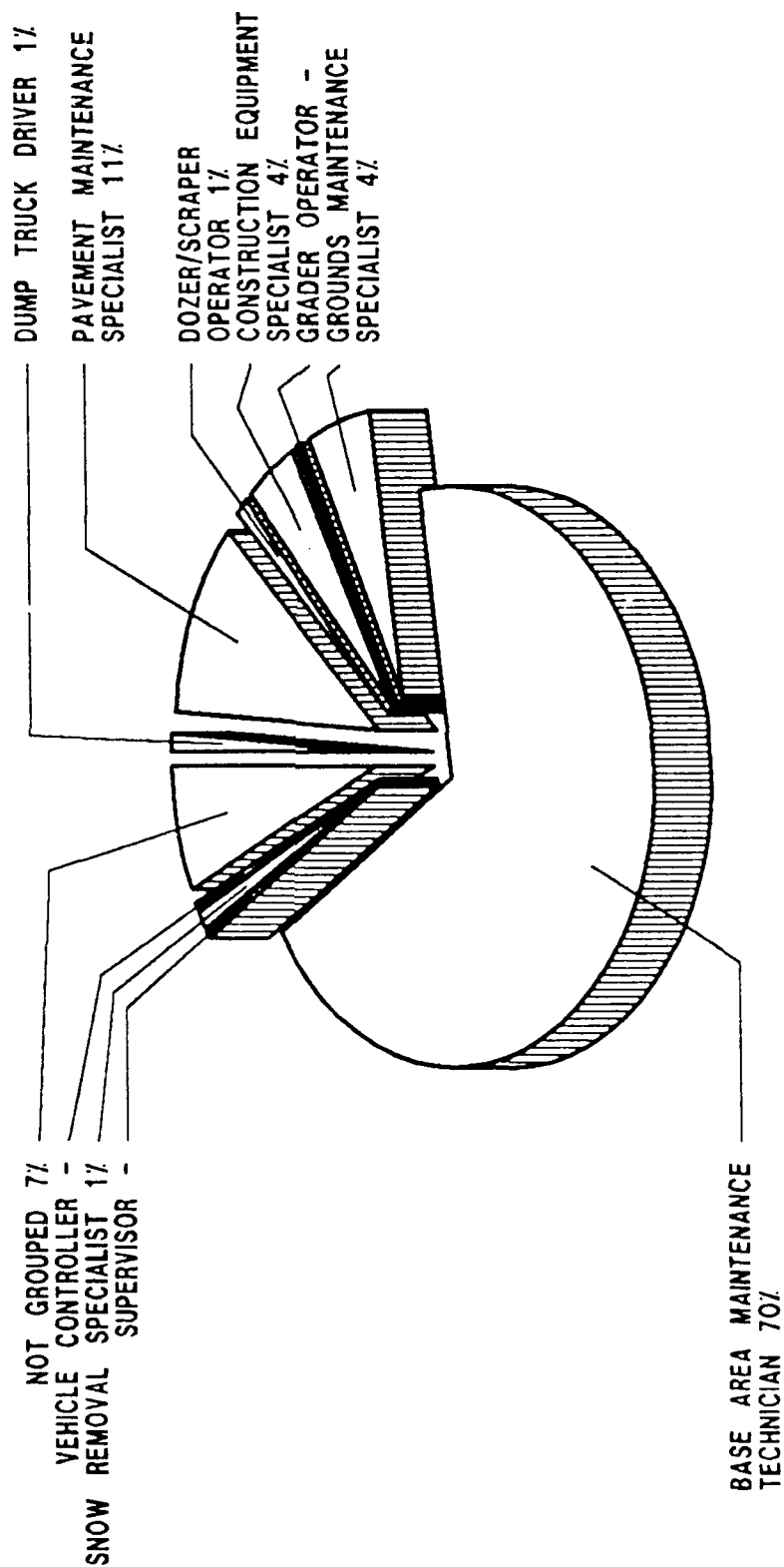


FIGURE 2

- Indicates less than 1 percent

FIRST-ENLISTMENT AFSC 551X0 PERSONNEL IN SPECIALTY JOBS (N= 655)

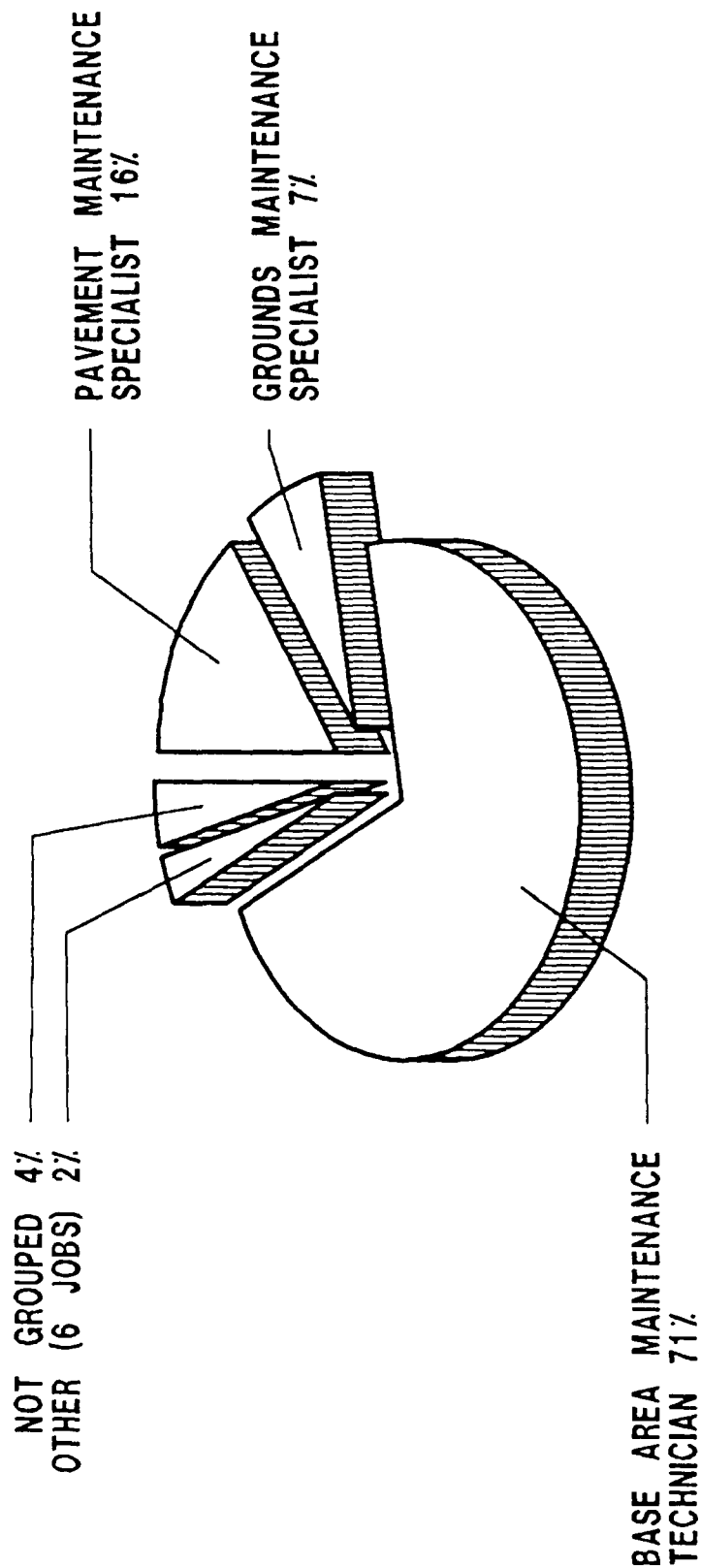


FIGURE 2A

FIRST-ENLISTMENT AFSC 551X1 PERSONNEL IN SPECIALTY JOBS (N= 529)

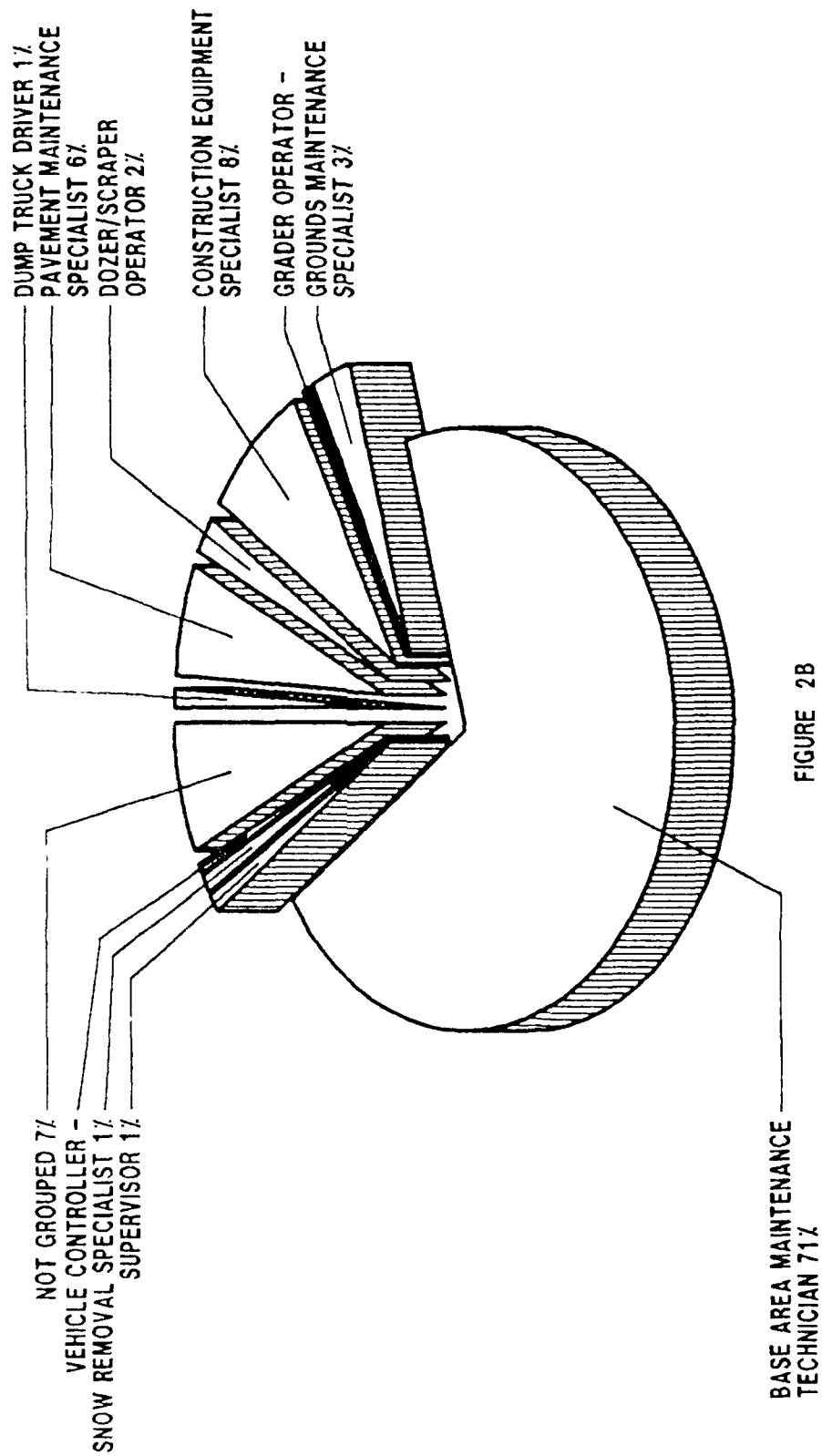


FIGURE 2B

- Indicates less than 1 percent

TABLE 16

RELATIVE PERCENT TIME SPENT ON DUTIES BY
FIRST-TERM DAFSC 551X0 AND 551X1 PERSONNEL
(TAFMS 1-48 MONTHS)

DUTIES	DAFSC 551X0/X1 (N=1,184)	DAFSC 551X0 (N=655)	DAFSC 551X1 (N=529)
A ORGANIZING AND PLANNING	1	-	1
B DIRECTING AND IMPLEMENTING	1	1	1
C INSPECTING AND EVALUATING	-	-	-
D TRAINING	-	-	-
E PERFORMING ADMINISTRATIVE ACTIVITIES	1	1	1
F PERFORMING GENERAL PAVEMENTS ACTIVITIES	10	12	8
G CONSTRUCTING AND MAINTAINING RIGID PAVEMENTS AND CONCRETE STRUCTURES	16	20	11
H CONSTRUCTING AND MAINTAINING FLEXIBLE PAVEMENTS	6	7	4
I CONSTRUCTING AND MAINTAINING DRAINAGE SYSTEMS	3	3	2
J CONSTRUCTING BUNKERS AND REVETMENTS	-	-	-
K PERFORMING RAPID RUNWAY REPAIR (RRR) ACTIVITIES	4	4	3
L PERFORMING FENCING AND GROUNDS MAINTENANCE ACTIVITIES	8	9	7
M OPERATING DUMP TRUCKS, FRONT-END LOADERS, AND FORKLIFTS	21	19	24
N OPERATING BACKHOES AND INDUSTRIAL TRACTORS WITH ATTACHMENTS	6	4	7
O OPERATING GRADERS AND ATTACHMENTS	3	2	4
P OPERATING TRACK-MOUNTED OR WHEEL-MOUNTED DOZERS AND ATTACHMENTS	3	2	5
Q OPERATING SCRAPERS	-	-	1
R OPERATING CRANES AND ATTACHMENTS	1	-	2
S OPERATING MISCELLANEOUS EQUIPMENT	9	8	11
T PERFORMING SNOW REMOVAL AND ICE CONTROL ACTIVITIES	5	4	5
U PERFORMING MISSILE SUPPORT ACTIVITIES	-	-	1
V RIGGING OR HOISTING EQUIPMENT	-	-	1
W PERFORMING WELL-DRILLING ACTIVITIES	-	-	-
X PERFORMING RANGE SUPPORT ACTIVITIES	-	-	-
Y PERFORMING SPECIALIZED ACTIVITIES	1	1	1

TABLE 17

REPRESENTATIVE TASKS PERFORMED BY AFSC 551XX PERSONNEL
WITH 1-48 MONTHS TAFMS
(PERCENT MEMBERS PERFORMING)

TASKS	DAFSC 551X0/X1 (N=1,184)	DAFSC 551X0 (N=655)	DAFSC 551X1 (N=529)
M523 Haul materials using dump trucks	91	90	93
M518 Dump materials from dump trucks with tailgate up	91	90	92
M517 Dump materials from dump trucks with tailgate down	88	89	87
M538 Perform operator inspections and maintenance on dump trucks	88	85	90
M554 Tow equipment using dump trucks	80	81	79
G188 Break concrete using jackhammers	80	85	74
F161 Clear vegetation or debris from area using construction equipment	78	77	79
H259 Break asphalt using jackhammers	76	83	68
F162 Clear vegetation or debris from area using handtools	76	81	70
M549 Spread materials from dump trucks	76	72	80
M528 Level areas by backdragging using wheel-mounted front-end loaders	76	70	82
F171 Excavate areas using handtools	75	77	74
F166 Compact base course materials or subgrade using small powered equipment or hand tampers	75	79	71
F160 Break asphalt or concrete using handtools, other than jackhammers	75	81	68
G208 Finish concrete pavements using brooms	74	83	64
G207 Finish concrete pavements by hand	74	83	64
M542 Perform operator inspections and maintenance on wheel-mounted front-end loaders	74	69	82
M553 Stockpile materials using wheel-mounted front-end loaders	72	63	83
F167 Compact base course materials or subgrade using steel wheel rollers	70	74	52
F174 Install or remove signs	70	76	62

AVERAGE NUMBER OF TASKS PERFORMED:	551X0/X1 PERSONNEL	139
	551X0 PERSONNEL	133
	551X1 PERSONNEL	146

CUMULATIVE AVERAGE PERCENT TIME SPENT BY MEMBERS ON ABOVE TASKS:	551X0/X1 PERSONNEL	18%
	551X0 PERSONNEL	17%
	551X1 PERSONNEL	19%

TABLE 18

EQUIPMENT USED BY 30 PERCENT OR MORE OF
AFSC 551XX PERSONNEL WITH 1-48 MONTHS TAFMS
(PERCENT MEMBERS RESPONDING)

<u>EQUIPMENT</u>	<u>DAFSC 551X0/X1 (N=1,184)</u>	<u>DAFSC 551X0 (N=655)</u>	<u>DAFSC 551X1 (N=529)</u>
AIR COMPRESSORS	91	95	87
ASPHALT LUTES	53	66	38
ASPHALT PAVING MACHINES	54	58	50
BACKHOES	85	82	89
BULLFLOATS	70	80	58
CRANES WHEEL-MOUNTED HYDRAULIC	29	22	38
DISTRIBUTORS, ASPHALT	35	39	31
DISTRIBUTORS, WATER	67	64	70
DOZER, TRACK MOUNTED	80	73	88
DRILLS, ELECTRIC	57	60	53
DRILLS, PNEUMATIC	39	50	25
EARTH AUGARS, HANDHELD	41	43	38
EDGERS	43	51	33
EXCAVATORS	35	31	40
FORKLIFTS	79	75	85
FRONT-END LOADERS, TRACK-MOUNTED	28	23	34
FRONT-END LOADERS, WHEEL-MOUNTED	92	90	94
GRADERS, ARTICULATED	68	55	84
HANDHELD SPRAYERS	35	41	28
JACKHAMMERS	88	92	84
JITTER BUGS	38	45	29
JOINT AND CRACK CLEANING MACHINES	34	44	23
JOINT SEALING MACHINES	26	33	18
MOWERS, HAND	37	41	32
MOWERS, SELF-PROPELLED	29	31	27
PORTABLE CONCRETE MIXERS	48	54	41
PORTABLE GENERATORS	40	42	38
ROLLERS, PACTOR	26	22	32
ROLLERS, PNEUMATIC TIRED	48	49	47
ROLLERS, STEELWHEELED	79	81	77
ROLLERS, TOWED	37	33	41
ROLLERS, VIBRATOR (PATCH)	41	44	36
ROLLERS, VIBRATORY	52	49	56

TABLE 18 (CONTINUED)

EQUIPMENT USED BY 30 PERCENT OR MORE OF
AFSC 551XX PERSONNEL WITH 1-48 MONTHS TAFMS
(PERCENT MEMBERS RESPONDING)

EQUIPMENT	DAFSC	DAFSC	DAFSC
	551X0/X1 (N=1,184)	551X0 (N=655)	551X1 (N=529)
SAWS, CONCRETE	81	87	73
SCREED BEAMS	46	53	36
SCREED, HAND	57	69	43
SKID-STEER LOADERS	32	30	36
SNOW BLOWERS, HIGH SPEED ROTARY	27	23	32
SNOWPLOW, ROLLOVER	35	31	39
STEAM CLEANERS	37	34	41
SWEEPERS, MAGNETIC	28	24	33
SWEEPERS, AIR BLAST SNOW	34	30	40
SWEEPERS, MULTIPURPOSE	45	36	57
SWEEPERS, STREET	68	68	69
SWEEPERS, TOWED	52	47	59
SWEEPERS, VACUUM	53	52	55
TAMPERS, PNEUMATIC	42	54	28
TAMPERS, VIBRATOR	70	75	63
TRACTORS, INDUSTRIAL	36	14	46
TRACTORS, 5-TON	46	41	52
TRACTORS, 10-TON	54	43	69
TRAILERS, FLATBED	54	46	64
TRAILERS, LOWBOY	48	37	61
TRAILERS, TILT	52	47	58
TRAILERS, WATER BUFFALO	30	28	32
TRENCHING MACHINES	36	32	40
TRUCKS, DUMP NOT M-SERIES	74	77	77
WEED EATERS	41	43	37

Approximately 96 percent of this group's relative time is spent performing tasks in the technical duties (Table 16). The duties where the most time is spent are Operating Dump Trucks, Front-End Loaders, and Forklifts (24 percent), Operating Miscellaneous Equipment (11 percent), Constructing and Maintaining Rigid Pavements and Concrete Structures (11 percent), and Performing General Pavements Activities (8 percent). Representative tasks performed by first-enlistment 551X1 personnel are listed in Table 17.

DAFSC 551XX First-Enlistment Personnel Summary. The first-enlistment personnel with both DAFSCs 551X0 and 551X1 perform very similar jobs, with a great deal of their relative time spent performing tasks associated with the operation of dump trucks and pavement maintenance. These two groups have a 78 percent overlap of time spent on performance of common tasks. From the above survey data, the merger of these personnel into a single AFSC is fully supported.

Training Emphasis (TE) and Task Difficulty (TD) Data

TE and TD data are secondary factors that can assist technical school personnel in deciding what tasks should be emphasized in entry-level training. These ratings, based on the judgements of senior Pavements Maintenance and Construction Equipment NCOs working in the field, were collected to provide training personnel with a rank-ordering of those tasks considered important for an individual being trained (TE), along with a measure of the difficulty of those tasks (TD). When combined with data on the percentages of first-enlistment personnel performing tasks, comparisons can then be made to determine if training adjustments are necessary. For example, tasks receiving high ratings on both task factors, accompanied by moderate to high percentages performing, may warrant resident training. Those tasks receiving high task factor ratings, but low percentages performing, may be more appropriately planned for OJT programs within the career ladder. Low task factor ratings may highlight tasks best omitted from training for first-term personnel, but this decision must be weighed against percentages of personnel performing the tasks, command concerns, and criticality of the tasks. Various lists of tasks, accompanied by TE and TD ratings, are contained in the TRAINING EXTRACT package and should be reviewed in detail by technical school personnel. (For additional information on TE and TD ratings, see Task Factor Administration in the SURVEY METHODOLOGY section of this report.)

Tasks having the highest TE ratings are listed in Tables 19 (AFSC 551XX), 19A (AFSC 551X0), and 19B (AFSC 551X1). Included for each task are also the percent of first-enlistment personnel performing and the TD rating. The tasks listed are predominately AFSC-related in nature, and most reflect a good percentage of first-enlistment personnel performing them. The tasks in these tables should not be considered as all inclusive or the only ones to be reviewed.

Tables 20 (AFSC 551XX), 20A (AFSC 551X0), and 20B (AFSC 551X1) list the tasks having the highest TD ratings. The percentages for first-enlistment, 5- and 7-skill level personnel performing, and the TE ratings are also

TABLE 19

TASKS WITH HIGHEST TRAINING EMPHASIS (TE) RATINGS
(AFSC 551XX)

TASKS	TRAINING EMPHASIS*	PERCENT 551XX FIRST ENLISTMENT (N=1,184)	TASK DIFFICULTY**
N578 Expose underground utilities using backhoes	6.28	39	6.41
G207 Finish concrete pavements by hand	6.21	74	5.86
G203 Cut concrete using saws	6.14	67	4.59
O617 Perform operator inspections and maintenance on graders	6.14	39	4.67
G236 Perform operator inspections and maintenance on concrete saws	5.91	58	4.18
O604 Cut and fill using graders	5.89	29	6.36
M542 Perform operator inspections and maintenance on wheel- mounted front-end loaders	5.87	74	3.95
P673 Load or off-load track-mounted dozers onto or from trailers	5.87	33	5.53
G211 Finish concrete surfaces using bullfloats	5.84	65	5.29
G201 Construct concrete forms	5.79	66	5.46
G242 Place concrete forms	5.79	65	5.06
M538 Perform operator inspections and maintenance on dump trucks	5.79	88	3.54
H268 Cut asphalt using saws	5.70	60	4.47
R742 Direct crane operators using hand signals	5.68	12	6.00
H265 Compact asphalt using steel wheeled rollers	5.66	61	4.87
S845 Perform operator inspections and maintenance on multi- purpose sweepers	5.66	47	4.47
N576 Excavate trenches using backhoes	5.63	41	5.19
G197 Compute concrete requirements	5.62	33	5.10
M539 Perform operator inspections and maintenance on forklifts	5.62	59	3.60
G208 Finish concrete pavements using brooms	5.61	74	4.50

* Mean rating is 2.71, and Standard Deviation is 1.42 (High TE=4.13)

** Average TD rating is 5.00

TABLE 19A

TASKS WITH HIGHEST TRAINING EMPHASIS (TE) RATINGS
(AFSC 551X0)

TASKS	TRAINING EMPHASIS*	PERCENT 551X0 FIRST ENLISTMENT (N=655)	TASK DIFFICULTY**
G197 Compute concrete requirements	6.86	44	4.59
G207 Finish concrete pavements by hand	6.74	83	5.62
G242 Place concrete forms	6.57	74	4.82
G211 Finish concrete surfaces using bullfloats	6.43	75	5.00
G203 Cut concrete using saws	6.34	75	4.30
G236 Perform operator inspections and maintenance on concrete saws			
G201 Construct concrete forms	6.29	67	3.77
G215 Install concrete joints	6.26	75	5.15
G233 Perform operator inspections and maintenance on air compressors	6.23	64	4.25
H267 Compute quantity of asphalt	6.17	71	3.54
H265 Compact asphalt using steel wheeled rollers	6.14	33	5.00
L435 Construct chain-link fences	6.14	67	4.58
G208 Finish concrete pavements using brooms	6.06	58	5.66
G237 Perform operator inspections and maintenance on portable concrete mixers	6.03	83	4.43
O617 Perform operator inspections and maintenance on graders	6.03	35	3.76
H268 Cut asphalt using saws	5.97	28	4.79
K419 Repair Spalls on airfield surfaces	5.94	68	4.31
M542 Perform operator inspections and maintenance on wheel- mounted front-end loaders		19	4.74
N578 Expose underground utilities using backhoes	5.94	69	3.83
H279 Perform operator inspections and maintenance on asphalt heating kettles	5.94	28	6.36
	5.89	12	5.23

* Mean rating is 2.71, and Standard Deviation is 1.44 (High TE=4.15)

** Average TD rating is 5.00

TABLE 19B

TASKS WITH HIGHEST TRAINING EMPHASIS (TE) RATINGS
(AFSC 551X1)

TASKS	TRAINING EMPHASIS*	PERCENT 551X1 FIRST ENLISTMENT (N=529)	TASK DIFFICULTY**
0604 Cut and fill using graders	6.30	43	6.08
N578 Expose underground utilities using backhoes	6.14	53	6.25
0617 Perform operator inspections and maintenance on graders	6.02	54	4.54
R742 Direct crane operators using hand signals	6.02	21	5.36
P673 Load or off-load track-mounted dozers onto or from trailers	5.79	46	5.49
0611 Finish grade areas using graders	5.79	35	7.09
0616 Perform operator inspections and maintenance on grader attachments	5.77	36	4.38
N576 Excavate trenches using backhoes	5.72	56	5.19
M537 Perform dozer, scraper, or clamshell operations using wheel-mounted front-end loader with multipurpose buckets	5.70	68	5.56
G203 Cut concrete using saws	5.65	57	4.85
M511 Backfill excavations using wheel-mounted front-end loaders	5.65	75	4.14
0603 Crown dirt roads using graders	5.65	36	6.15
M532 Load or off-load materials or equipment using forklifts	5.63	73	4.23
0615 Maintain unpaved roads using graders	5.63	39	5.63
M524 Haul materials using forklifts	5.58	75	3.88
S875 Sweep areas using multipurpose sweepers	5.58	49	3.97
R741 Determine safe lifting capacity using load charts	5.56	14	5.74
S845 Perform operator inspections and maintenance on multi- purpose sweepers	5.56	57	4.60
M530 Level materials using wheel-mounted front-end loaders with multipurpose buckets	5.53	70	4.49
0614 Maintain road shoulders using graders	5.53	26	5.69

* Mean rating is 2.59, and Standard Deviation is 1.42 (High TE=4.01)

** Average TD rating is 5.00

TABLE 20

TASKS WITH HIGHEST TASK DIFFICULTY (TD) RATINGS
(AFSC 551XX)

TASKS	TASK DIFF*	PERCENT MEMBERS PERFORMING			TNG EMPH**
		FIRST ENLISTMENT (N=1,184)	5-SKILL LEVEL (N=1,060)	7-SKILL LEVEL (N=518)	
O611 Finish grade areas using graders	8.03	40	48	30	4.66
R775 Remove damaged aircraft using cranes	7.90	2	4	5	2.88
R749 Excavate footings or foundations using draglines	7.84	1	1	1	2.82
P670 Finish grade using track-mounted dozers	7.60	11	16	10	3.87
A10 Draft budget requirements	7.60	4	7	28	.34
Y1067 Wire electrical series for explosive charges	7.53	1	3	2	1.75
Y1052 Lay out and connect electrical blasting caps and firing wire circuits for explosive charges	7.51	2	3	3	1.67
J369 Erect roof spans for aircraft shelters using cranes	7.51	1	1	1	1.29
R738 Clean or shape drainage ditches using draglines	7.48	2	3	4	3.39
R749 Excavate footings or foundations using draglines	7.44	1	1	1	2.82
B47 Direct well-drilling operations	7.42	2	2	3	.26
P671 Finish grade using wheel-mounted dozers	7.39	1	2	3	2.20
B30 Direct building construction operations	7.34	4	2	3	.47
R788 Slope embankments using draglines	7.30	1	2	2	2.82
Y1030 Connect detonating cord or sensitized detonating cord to explosive charges	7.27	2	3	3	1.79
R750 Excavate sanitary fills using draglines	7.22	1	2	1	2.61

* Average TD rating is 5.00

** Mean rating is 2.71, and Standard Deviation is 1.42 (High TE=4.13)

TABLE 20A

TASKS WITH HIGHEST TASK DIFFICULTY (TD) RATINGS
(AFSC 551X0)

TASKS	TASK DIFF*	PERCENT MEMBERS PERFORMING			TNG EMPH**
		FIRST ENLISTMENT (N=665)	5-SKILL LEVEL (N=444)	7-SKILL LEVEL (N=227)	
R775 Remove damaged aircraft using cranes	8.14	1	1	1	2.86
R749 Excavate footings or foundations using draglines	7.92	0	0	0	2.91
O611 Finish grade areas using graders	7.86	18	22	17	4.66
R738 Clean or shape drainage ditches using draglines	7.83	1	1	1	3.34
R748 Excavate borrow pits using draglines	7.74	0	0	1	2.40
R750 Excavate sanitary fills using draglines	7.74	1	0	0	2.37
R769 Position prefabricated structures using cranes	7.59	2	3	2	2.89
R787 Shape stream beds using draglines	7.55	1	0	1	2.31
J369 Erect roof spans for aircraft shelters using cranes	7.54	1	0	1	1.40
Y1044 Install or remove aircraft arresting systems	7.50	2	2	1	.77
R740 Determine required boom angles	7.48	2	4	6	4.26
R788 Slope embankments using draglines	7.48	1	0	1	2.51
R741 Determine safe lifting capacity using load charts	7.39	3	6	4	4.54
R747 Excavate areas using cranes with clamshells	7.35	1	2	3	3.23
Y1030 Connect detonating cord or sensitized detonating cord to explosive charges	7.24	1	2	3	2.06
Y1031 Connect safety fuses with nonelectric blasting caps to explosive charges	7.24	1	2	2	2.31
Y1067 Wire electrical series for explosive charges	7.24	1	2	1	1.69
A10 Draft budget requirements	7.21	3	6	30	.63
R773 Prepare loads for lifting by spreader bars	7.20	1	3	6	4.14

* Average TD rating is 5.00

** Mean rating is 2.71, and Standard Deviation is 1.44 (High TE=4.15)

TABLE 20B

TASKS WITH HIGHEST TASK DIFFICULTY (TD) RATINGS
(AFSC 551X1)

TASKS	TASK DIFF*	PERCENT MEMBERS PERFORMING			
		FIRST ENLISTMENT (N=529)	5-SKILL LEVEL (N=616)	7-SKILL LEVEL (N=291)	TNG EMPH**
P670 Finish grade using track-mounted dozers	7.91	15	21	15	3.70
O611 Finish grade areas using graders	7.90	35	49	39	5.79
P671 Finish grade using wheel-mounted dozers	7.82	2	3	2	2.28
Y1052 Lay out and connect electrical blasting caps and firing wire circuits for explosive charges	7.81	2	4	3	1.53
P672 Install or remove tracks on or from track-mounted dozers	7.69	3	6	3	2.51
A10 Draft budget requirements	7.67	4	7	26	.09
R760 Load materials into dump trucks using draglines	7.63	2	2	4	3.37
R775 Remove damaged aircraft using cranes	7.54	4	6	8	2.77
B47 Direct well-drilling operations	7.53	2	3	3	.30
R749 Excavate footings or foundations using draglines	7.52	1	2	1	2.60
Y1067 Wire electrical series for explosive charges	7.45	2	3	3	1.91
B30 Direct building construction operations	7.35	4	9	20	.53
K396 Finish grade-to-surface roughness specifications using excavators	7.33	6	11	10	3.21
R763 Load or off-load track-mounted cranes onto or from trailers	7.33	3	5	6	3.40
J368 Erect arches for aircraft shelters	7.27	1	2	2	1.16
D104 Develop resident course curriculum materials	7.20	2	4	7	.00
J369 Erect roof spans for aircraft shelters using cranes	7.19	1	2	1	1.44
B29 Direct asphalt plant operations	7.17	3	4	5	.19
C90 Write staff studies, surveys, or special reports, other than training reports	7.16	2	3	17	.07
C66 Evaluate budget requirements	7.15	2	2	19	.30

* Average TD rating is 5.00

** Mean rating is 2.59, and Standard Deviation is 1.42 (High TE=4.01)

included for each task. These tasks are considered by the raters as the most difficult to learn. As can be seen, most of the tasks shown are performed by a greater percentage of the more experienced 5- and 7-skill level personnel, than by the other two categories of personnel. These data indicate that great numbers of first-termers are less likely to perform the more difficult tasks of the career ladders, because of the necessity of gaining experience in order to properly perform the tasks.

Specialty Training Standards (STS)

A comprehensive review of STSs for AFSC 551X0, dated March 1984, AFSC 551X1, dated April 1984, and proposed AFSC 551XX (draft) was accomplished by comparing STS items to occupational survey data (based on the previously mentioned assistance from technical school personnel in matching job inventory tasks to STS elements). STS paragraphs containing general knowledge information, subject-matter knowledge-only requirements, or basic supervisory responsibilities were not examined. Task knowledge and performance elements of the STS were compared against the standard set forth in AFR 8-13 (dated 1 August 1986), AFR 8-13/ATC Supplement 1 (dated 2 March 1987), Attachment 1, paragraph A1-3c(4) (i.e., include tasks performed or knowledge required by 20 percent or more of the personnel in a skill level (criterion group) of the AFSC, and ATC Regulation 52-22. Data were displayed for the first-job (1-24 months TAFMS), first-enlistment (1-48 months TAFMS), 5-skill level, and 7-skill level groups matched to the elements of the STS. Where a change is suggested by the survey data, the paragraph or subparagraph is listed in the appropriate Appendix. Complete data are available in the computer printouts provided with this report.

551X0 STS: Occupational survey data support inclusion of the majority of the matched paragraphs and subparagraphs in the 551X0 STS. There are, however, 21 of 125 paragraphs or subparagraphs that do not have a matched task with 20 percent or more members performing. Examples of these STS items are shown in Table 21.

There are 13 STS paragraphs or subparagraphs which reflect training proficiency codes for the basic course, but have less than the recommended 30 percent members performing by first-job or first-enlistment categories of personnel. Examples of these STS items are shown in Table 22.

Two areas, Publications with six subparagraphs not supported, and Paint Striping, with five subparagraphs not supported, reflect trends in areas not supported. Overall, however, the number of STS paragraphs or subparagraphs in question indicates that discussion of individual paragraphs or subparagraphs is unwarranted. A complete listing of all DAFSC 551X0 paragraphs and subparagraphs referred to can be found in Appendix B.

Tasks not matched to any paragraph or subparagraph of the STS are listed at the end of the STS computer listing. These were reviewed to determine if there were any tasks concentrated around any particular functions or jobs. No particular trends were noted. Examples of tasks performed by 20 percent or

TABLE 21

EXAMPLES OF 551X0 STS ELEMENTS REQUIRING REVIEW
(LESS THAN 20 PERCENT MEMBERS PERFORMING)

STS ITEM (WITH SELECTED SAMPLE TASK)	PERCENT MEMBERS PERFORMING						TE RATING*	TD RATING**
	3LVL PROF CODE	1ST JOB (N=409)	1ST ENL (N=655)	DAFSC 55150 (N=444)	DAFSC 55170 (N=227)			
4. PUBLICATIONS								
a. Use Indexes to identify technical order numbers and titles	-							
E158 Maintain TO files		1	1	5	13		1.11	5.15
7. HAND TOOLS AND EQUIPMENT								
e. Use water blaster	2b/-							
F181 Remove paint from concrete surfaces or pavements using water blasters (hydro brooms)		13	12	11	10		2.82	5.02

* Mean rating is 2.71, and Standard Deviation is 1.44 (High TE=4.15)

** Average TD rating is 5.00

TABLE 22

EXAMPLES OF 551X0 STS ELEMENTS REQUIRING REVIEW
(QUESTIONABLE PROFICIENCY CODES)

STS ITEM (WITH SELECTED SAMPLE TASK)	PERCENT MEMBERS PERFORMING					TE RATING*	TD RATING**
	3LVL PROF CODE	1ST JOB (N=409)	1ST ENL (N=655)	DAFSC 55150 (N=444)	DAFSC 55170 (N=227)		
8. MATERIAL LOADING, HAULING AND TOWING EQUIPMENT							
d. Industrial tractors (5). Tow Equipment							
	2b/b						
N596 Tow equipment using tractors		18	22	30	19	3.49	3.42
9. COMPACTION EQUIPMENT							
b. Pneumatic tired roller							
(2). Accomplish operator maintenance	2b/b						
S847 Perform operator inspections and maintenance on pneumatic tired rollers		18	21	22	18	3.74	3.82

* Mean rating is 2.71, and Standard Deviation is 1.44 (High TE=4.15)

** Average TD rating is 5.00

more respondents of the STS target groups, but not referenced to any STS element, are shown in Table 23. Training personnel and MAJCOM subject-matter experts should review unreferenced tasks to determine if the areas they pertain to are justified to be included in the STS.

551X1 STS: The majority of the matched paragraphs and subparagraphs in the 551X1 STS are supported by survey data. Thirty-eight of the 117 matched paragraphs or subparagraphs, however, are not supported. They do not have a matched task with 20 percent or more members performing. Examples of these STS items are shown in Table 24.

There are 22 STS paragraphs or subparagraphs which reflect training proficiency codes for the basic course, but have less than the recommended 30 percent members performing by first-job or first-enlistment categories of personnel. Examples of these STS items are shown in Table 25.

The number of STS elements in question precludes individual discussion of each; however, there are four areas that have multiple elements or proficiency codes not supported. These areas are:

- Publications (five out of five subparagraphs not supported)
- Cranes (9 out of 15 subparagraphs not supported)
- Rigging and Lifting (7 of 13 subparagraphs not supported,
and 5 subparagraphs with proficiency codes not supported)
- Explosives Materials (six of six elements not supported)

A complete listing of DAFSC 551X1 paragraphs and subparagraphs not supported and those with unsupported proficiency code can be found in Appendix C.

Tasks not matched to any paragraph or subparagraph of the STS are listed at the end of the STS computer listing. These were reviewed to determine if there were any tasks concentrated around any particular functions or jobs. No particular trends were noted. Examples of tasks performed by 20 percent or more respondents of the STS target groups, but not referenced to any STS element, are shown in Table 26. Training personnel and MAJCOM subject-matter experts should review unreferenced tasks to determine if the areas they pertain to are justified to be included in the STS.

DRAFT 551XX STS: In order to make analysis of this document possible, personnel from each technical training center matched tasks to portions of the STS which pertain to their areas of responsibility. Combined occupational survey sample data and the data for first-enlistment personnel from both AFSCs were used to analyze this document. The majority of the 185 matched paragraphs and subparagraphs in the draft STS are supported by occupational survey data. Thirty-three areas, however, are not supported, because they do not have a matched task with 20 percent or more members performing. These areas should be reviewed for possible elimination from the STS. Examples of these draft STS items are shown in Table 27.

TABLE 23

EXAMPLES OF TASKS PERFORMED BUT NOT REFERENCED TO 551X0 STS

TASKS	PERCENT MEMBERS PERFORMING					TE RATING*	TD** RATING
	1ST JOB (N=409)	1ST ENL (N=655)	DAFSC 55150 (N=444)	DAFSC 55170 (N=227)			
F170 Compact base course materials or subgrade using vibratory rollers	49	52	55	39		5.20	3.89
F174 Install or remove signs	77	76	68	48		4.40	3.37
F175 Maintain signs	65	64	58	41		4.37	3.18
G240 Place concrete curbs by hand	48	52	50	36		4.86	5.49
M511 Backfill excavations using wheel-mounted front-end loaders	58	61	64	41		4.71	4.16
M517 Dump materials from dump trucks with tailgate down	89	89	84	56		4.29	3.38

* Mean rating is 2.71, and Standard Deviation is 1.44 (High TE=4.15)

** Average TD rating is 5.00

TABLE 24

EXAMPLES OF 551X1 STS ELEMENTS REQUIRING REVIEW
(LESS THAN 20 PERCENT MEMBERS PERFORMING)

STS ITEM (WITH SELECTED SAMPLE TASK)	PERCENT MEMBERS PERFORMING					TE RATING*	TD** RATING
	3LVL PROF CODE	1ST JOB (N=232)	1ST ENL (N=529)	DAFSC 55150 (N=616)	DAFSC 55170 (N=291)		
9. OPERATE MATERIALS-HANDLING EQUIPMENT d. Motorized Scrapers	1b/-						
Q725 Perform operator inspections and maintenance on motorized scrapers		8	13	16	6	3.20	5.71
13. OPERATE CRANES d. Change crane components (1) Booms	-						
R734 Attach or remove crane booms		0	3	7	5	3.42	6.60

* Mean rating is 2.59, and Standard Deviation is 1.42 (High TE=4.01)

** Average TD rating is 5.00

TABLE 25

EXAMPLES OF 551X1 STS ELEMENTS REQUIRING REVIEW
(QUESTIONABLE PROFICIENCY CODES)

STS ITEM (WITH SELECTED SAMPLE TASK)	PERCENT MEMBERS PERFORMING						TE RATING*	TD** RATING
	3LVL PROF CODE	1ST JOB (N=232)	1ST ENL (N=529)	DAFSC 55150 (N=616)	DAFSC 55170 (N=291)			
8. TOOLS AND EQUIPMENT MAINTENANCE								
f. Accomplish required equipment repair	2b/a							
N566 Change teeth on backhoe buckets		21	29	38	24		3.91	3.57
11. OPERATE CRAWLER TRACTORS WITH ATTACHMENTS								
b. Remove trees	2b/b							
P693 Remove large trees using track-mounted dozer		6	15	22	14		3.63	5.80

* Mean rating is 2.59, and Standard Deviation is 1.42 (High TE=4.01)

** Average TD rating is 5.00

TABLE 26

EXAMPLES OF TASKS PERFORMED BUT NOT REFERENCED TO 551X1 STS

TASKS	PERCENT MEMBERS PERFORMING					TE RATING*	TD** RATING
	1ST JOB (N=232)	1ST ENL (N=529)	DAFSC 55150 (N=616)	DAFSC 55170 (N=291)			
F160 Break asphalt or concrete using handtools, other than jackhammers	62	68	66	34		4.12	4.43
F166 Compact base course materials or subgrade using small powered equipment or hand tampers	58	71	67	39		5.02	4.34
F179 Place base course for materials	44	55	62	39		4.35	4.35
G188 Break concrete using jackhammers	69	74	69	36		4.67	3.94
G201 Construct concrete forms	46	56	58	33		5.19	5.64
G203 Cut concrete using saws	47	57	56	31		5.65	4.85

* Mean rating is 2.59, and Standard Deviation is 1.42 (High TE=4.01)

** Average TD rating is 5.00

TABLE 27

EXAMPLES OF DRAFT 551XX STS ELEMENTS REQUIRING REVIEW
(LESS THAN 20 PERCENT MEMBERS PERFORMING)

STS ITEM (WITH SELECTED SAMPLE TASK)	PERCENT MEMBERS PERFORMING						TE RATING*	TD** RATING
	3LVL PROF CODE	1ST JOB (N=641)	1ST ENL (N=1,185)	DAFSC 5515X (N=1,060)	DAFSC 5517X (N=518)			
9. POWERED EQUIPMENT								
b. Use powered equipment (8). High-pressure water blaster	-							
F181 Remove paint from concrete surfaces or pavements using water blasters (hydro brooms)		11	11	8	7	2.26	5.04	
12. COMPACTION EQUIPMENT								
b. Operate compaction equipment (3). Sheepsfeet								
F165 Compact base course materials or subgrades using sheepsfoot rollers		16	17	17	10	3.96	4.05	

* Mean rating is 2.71, and Standard Deviation is 1.42 (High TE=4.13)

** Average TD rating is 5.00

There are 18 STS paragraphs or subparagraphs which reflect training proficiency codes for the basic course, but have less than the recommended 30 percent members performing by first-job or first-enlistment categories of personnel. Examples of these items are shown in Table 28.

Fourteen STS subparagraphs have tasks matched with greater than 30 percent members performing by first-job or first-enlistment categories of personnel, but have dashed proficiency codes for 3-skill level personnel. These subparagraphs should be reviewed for possible upgrading of the proficiency codes. Examples of these items are shown in Table 29.

The number of draft STS elements in question precludes individual discussion of each. There does not appear to be any trend in the elements not supported. A complete listing of all of the elements referred to can be found in Appendix D.

Tasks not matched to any paragraph or subparagraph of the STS are listed at the end of the STS computer listing. These were reviewed to determine if there were any tasks concentrated around any particular functions or jobs. No particular trends were noted. Examples of tasks performed by 20 percent or more respondents of the STS target groups, but not referenced to any STS element, are shown in Table 30. Training personnel and MAJCOM subject-matter experts should review unreferenced tasks to determine if the areas they pertain to are justified to be included in the STS.

Plans of Instruction (POI)

Based on the previously mentioned assistance from subject-matter experts at the technical training centers, inventory tasks were matched to POI J3ABR55130, Pavements Maintenance, dated 2 October 1990 and POI J3ABR55131, Construction Equipment, dated March 1982. The results of the matching process are displayed in a computer-generated product found in the Training Extract. POI blocks and units of instruction were compared against the standard set forth in Attachment 1, ATCR 52-22, dated 17 February 1989 (30 percent or more of the criterion first-enlistment group performing tasks trained, along with sufficiently high TE and TD ratings on those tasks). Per this guidance, tasks trained in the course which do not meet these criteria should be considered for elimination from the formal course, if not justified on some other acceptable basis. Data were displayed for the first-job (1-24 months TAFMS) and first-enlistment (1-48 months TAFMS) groups, for those tasks matched to the POI blocks and units of instruction.

POI J3ABR55130 A review of the tasks matched to the 55130 course POI reveals that eight (15 percent) of the units of instruction or criterion objectives are not supported by OSR data for matched tasks. These blocks or units account for 11.25 hours of instructional time. Examples of two of the units of instruction with matched tasks which were not supported by OSR data are presented in Table 31. A complete listing of the blocks and units of instruction not supported can be found in Appendix E.

TABLE 28

EXAMPLES OF DRAFT 551XX STS ELEMENTS REQUIRING REVIEW
(PROFICIENCY CODE NOT SUPPORTED)

STS ITEM (WITH SELECTED SAMPLE TASK)	3LVL PROF CODE	PERCENT MEMBERS PERFORMING				TE RATING*	TD RATING**
		1ST JOB (N=641)	1ST ENL (N=1,185)	DAFSC 5515X (N=1,060)	DAFSC 5517X (N=518)		
10. MATERIAL-HANDLING EQUIPMENT							
a. Perform operational checks							
(4). Asphalt pavers	b						
H280 Perform operators inspections and maintenance on asphalt paving machines		17	21	25	19	4.71	5.64
10. MATERIAL-HANDLING EQUIPMENT							
g. Operate industrial tractors with attachments							
(1). Auger	b						
N573 Drill holes using tractors with earth auger attachments		12	20	25	15	4.17	4.38

* Mean rating is 2.71, and Standard Deviation is 1.42 (High TE=4.13)

** Average TD training is 5.00

TABLE 29

EXAMPLES OF DRAFT 551XX STS ELEMENTS REQUIRING REVIEW
(QUESTIONABLE PROFICIENCY CODES)

STS ITEM (WITH SELECTED SAMPLE TASK)	3LVL PROF CODE	PERCENT MEMBERS PERFORMING				TE RATING*	TD** RATING
		1ST JOB (N=641)	1ST ENL (N=1,185)	DAFSC 5515X (N=1,060)	DAFSC 5517X (N=518)		
10. MATERIAL-HANDLING EQUIPMENT							
h. Operate crawler tractors with attachments (2). Level	-		44	52	35	4.84	4.25
P640 Backdrag using track-mounted dozers		34					
13. LIQUID MATERIAL DISTRIBUTION							
a. Perform operational checks	-						
S859 Perform operator inspection and maintenance on water distributors		35	41	47	52	5.03	3.97

* Mean rating is 2.71, and Standard Deviation is 1.42 (High TE=4.13)

** Average TD rating is 5.00

TABLE 30

EXAMPLES OF TASKS PERFORMED BUT NOT REFERENCED TO DRAFT 551XX STS

STS ITEM (WITH SELECTED SAMPLE TASK)	PERCENT MEMBERS PERFORMING					TE RATING*	TD RATING**
	1ST JOB (N=641)	1ST ENL (N=1,185)	DAFSC 5515X (N=1,060)	DAFSC 5517X (N=518)			
F160 Break asphalt or concrete using handtools, other than jackhammers	75	75	70	41		4.58	4.24
L463 Maintain chain-link fences	52	54	48	27		4.41	3.86
M541 Perform operator inspections and maintenance on track-mounted or wheel-mounted front-end loader attachments	56	63	68	46		5.20	3.91
F174 Install or remove signs	71	70	57	37		3.71	3.24
F172 Inspect airdrome for foreign objects	32	32	30	23		4.04	3.41
H260 Clean asphalt cracks using compressed air	34	34	29	22		4.13	3.01

* Mean rating is 2.71, and Standard Deviation is 1.42 (High TE=4.13)

** Average TD rating is 5.00

TABLE 31

EXAMPLES OF 55130 POI ELEMENTS REQUIRING REVIEW

POI ITEM (WITH SELECTED SAMPLE TASK)	CLASS HOURS	PERCENT MEMBERS PERFORMING			TE RATING*	TD RATING**
		1ST JOB (N=409)	1ST ENL (N=655)			
I. RIGID PAVEMENT						
5. Drainage Structures ,						
c. Given stated problem situation where debris is found in drainage structures, list the procedures for removing the debris from the structure. STS: 12b Meas: PC, W	.5					
I335 Maintain concrete drains (RCS HAF-SCT(AR)8202)		25	28	4.57	3.50	
II. FLEXIBLE PAVEMENT						
1. Flexible pavement construction						
k. Working as a member of a group with instructor assistance, apply a prime/tack coat to the base course. STS: 11c(3) Meas: PC, W	2					
H291 Regulate rate of prime or tack coat applications		20	18	4.23	5.72	

* Mean rating is 2.71, and Standard Deviation is 1.44 (High TE=4.15)

** Average TD rating is 5.00

Additionally, some tasks not matched to any block or unit of instruction of the POI reflect a high percent member performing for the criterion groups and sufficiently high TE and TD ratings to be considered for POI use. This combination of factors indicates formal training may be required, and resident technical training could be supported. Table 32 lists a sampling of a number of such tasks. Subject-matter experts (SMEs) should perform an in-depth review of these and other qualifying tasks contained in the "Tasks Not Referenced" section of the previously mentioned computer printout to determine the necessity for training and the most effective method to accomplish it.

POI J5ABA55131. A review of the tasks matched to the 55131 course POI reveal that six (15 percent) of the POI units of instruction or criterion objectives are not supported by OSR data for matched tasks. These blocks or units account for 16.50 hours of instructional time. Examples of two of the units of instruction with matched tasks which were not supported by OSR data are presented in Table 33. A complete listing of the blocks and units of instruction not supported can be found in Appendix F.

Additionally, some tasks not matched to any block or unit of instruction of the POI reflect a high percent member performing for the criterion groups and sufficiently high TE and TD ratings to be considered for POI use. This combination of factors indicates formal training may be required and resident technical training could be supported. Table 34 lists a sampling of a number of such tasks. SMEs should perform an in-depth review of these and other qualifying tasks contained in the "Tasks Not Referenced" section of the previously mentioned computer printout to determine the necessity for training and the most effective method to accomplish it. Personnel are encouraged to review the computer printout of the POI matched with survey data, as they undertake future revisions, if any, of the POI.

TRAINING REQUIREMENTS ANALYSIS

Training requirements analysis (TRA), using task analysis, provides a comprehensive database to identify current and projected training issues and requirements, while addressing MAJCOM concerns. TRA information may be used for a wide variety of specialty education and training needs, two of which are to determine where training should be conducted and to enhance on-the-job training (OJT) programs.

The TRA for AFSCs 551X0 and 551X1 addresses areas of concern to the Civil Engineering community relative to training, loss in productivity of direct duty assignees (DDAs), utilization of 3-skill level personnel, overlapping of skills between specialties, and contingency responsibilities. This section provides general training recommendations for the career fields based on data collected from a number of sources to include field interview guides completed by members of each unit visited, course control documents, evaluation reports, and pertinent career field regulations.

TABLE 32

EXAMPLES OF TASKS WITH GREATER THAN 30 PERCENT MEMBERS PERFORMING
AND NOT REFERENCED TO POI 55130

TASKS	PERCENT MEMBERS PERFORMING			TRAINING EMPHASIS RATING*	TASK DIFFICULTY RATING**
	1ST JOB (N=409)	1ST ENL (N=176)			
F160 Break asphalt or concrete using handtools, other than jackhammers	82	81		4.74	4.14
F161 Clear vegetation or debris from area using construction equipment	75	77		5.11	4.43
F163 Compact base course materials or subgrade using pactors	72	72		4.46	3.81
F170 Compact base course materials or subgrade using vibratory rollers	49	52		5.20	3.89
F174 Install or remove signs	77	76		4.40	3.37
F175 Maintain signs	65	64		4.37	3.18

* Mean rating is 2.71, and Standard Deviation is 1.44 (High TE=4.15)

** Average TD rating is 5.00

TABLE 33

EXAMPLES OF 55131 POI ELEMENTS REQUIRING REVIEW

POI ITEM (WITH SELECTED SAMPLE TASK)	CLASS HOURS	PERCENT MEMBERS PERFORMING			TE RATING*	TD RATING**
		1ST JOB (N=232)	1ST ENL (N=529)			
II. HEAVY CONSTRUCTION EQUIPMENT						
4. Crawler tractor phase						
e. Ditching	8					
P662 Cut V-ditches using track-mounted dozers		14	20		3.65	6.17
IV. GENERAL CONSTRUCTION EQUIPMENT						
3. Compaction equipment						
b. Operation compaction equipment						
(2). 9-wheel pneumatic tired roller						
(a). Perform before and after action						
maintenance on the pneumatic						
tired roller	1.5					
S847 Perform operator inspections and maintenance on		16	22		3.70	3.79
pneumatic tired rollers						

* Mean rating is 2.59, and Standard Deviation is 1.42 (High TE=4.01)

** Average TD rating is 5.00

TABLE 34

EXAMPLES OF TASKS WITH GREATER THAN 30 PERCENT
MEMBERS PERFORMING AND NOT REFERENCED TO POI 55131

TASKS	PERCENT MEMBERS PERFORMING				TE RATING*	TD RATING**
	1ST JOB (N=232)	1ST ENL (N=529)				
F160 Break asphalt or concrete using handtools, other than jackhammers	62	68			4.12	4.43
F161 Clear vegetation or debris from area using construction equipment	71	79			5.37	4.21
F166 Compact base course materials or subgrade using small powered equipment or hand tampers	58	71			5.02	4.34
F179 Place base course for materials	44	55			4.35	4.35
G188 Break concrete using jackhammers	69	74			4.67	3.94
G201 Construct concrete forms	46	56			5.19	5.64

* Mean rating is 2.59, and Standard Deviation is 1.42 (High TE=4.01)

** Average TD rating is 5.00

Training Requirements Analysis Survey Procedures

General statistical information from the current USAFOMS occupational survey products and the task statements from job inventory AFPT 90-551-909, dated January 1990, served as the basis for this training analysis. Supervisory and administrative tasks which were not AFSC-specific, were omitted from this analysis. A number of contingency tasks were also determined not to be AFSC-specific and were likewise not analyzed. USAFOMS Job Inventory and occupational survey data were compared with Air Force regulations, publications, minutes from the November 1985 Utilization and Training Workshop, and Air Force Military Personnel data for additional information.

During the next stage of the TRA process, MAJCOM functional managers were contacted for inputs to career ladder issues and concerns. A Task Analysis Workshop was held at Sheppard AFB in February 1990, where TRA team members, technical school personnel, and MAJCOM representatives discussed project methodology and completed initial task clustering and verification of common skill/knowledge lists. A proposed TDY plan was developed with recommended locations for interview of skilled specialty members.

Ninety SMEs in the field, functional managers, and instructors were interviewed. Due to the diversity of the career field, issues could not be properly addressed solely by SME interviews. The TRA team developed a questionnaire to address specific questions relating to DDA upgrade to the 3- and 5-skill level and current training accomplished, through both military and civilian sources. These survey questionnaires were administered to personnel across all using major commands including USAFE and PACAF. Approximately 3,000 questionnaires were mailed as an insert to the job inventory. Sixty-two percent (1,846) of these were usable for the training requirements analysis.

The project team visited 9 installations during the February to September 1990 time frame to interview the 90 (551X0, N=38; 551X1, N=49; and 55199/00, N=3) SMEs. Bases visited include:

- | | |
|----------------------|---|
| Sheppard AFB TX | - location of 3- and 7-skill level Pavements Maintenance resident courses |
| Fort Leonard Wood MO | - location of Construction Equipment Operator 3-skill level resident course |
| Dobbins AFB GA | - location of Regional Equipment Operator Training School (REOTS) |
| Tyndall AFB FL | - location of HQ Air Force Engineering and Services Center (AFESC) |
| Eglin AFB FL | - large base CE operation; gunnery range activities; AFESC Field 4 (PRIME BEEF) |

Hurlburt AFB FL	- RED HORSE unit
Kirtland AFB NM	- Task analysis validation visit
Nellis AFB NV	- Large CE operation; unique organizational structure; TAC sponsored Regional Equipment Training Site (RETS); RED HORSE unit
Barksdale AFB LA	- Unique CE organization (horizontal-vertical); construction of SAC's Warrior Training Center underway

Training Requirements Analysis (TRA) Questionnaire Sample

Table 35 provides a breakout of Pavements Maintenance personnel, by skill level, that are in the TRA sample. The information on the personnel interviewed is also shown. Table 36 shows the same type data for Construction Equipment personnel. This information for the Superintendent skill levels is depicted in Table 37. The data represent an equitable distribution of personnel and is quite adequate for training requirements analysis.

Data concerning sample and interview distribution by MAJCOM are shown in Tables 38 (AFSC 551X0) and 39 (AFSC 551X1). The MAJCOMs are amply represented in the sample to allow for meaningful analysis.

The information in Table 40 reflects composite training received by 551X0/X1 personnel from the TRA sample. It reveals a significant amount of cross utilization training and contingency training is occurring. Additional information concerning the courses listed in the table can be found in Appendix G.

Task Analysis

Task analysis is one of the major aspects of the TRA process. To facilitate task analysis, the functional responsibilities of the AFSCs were broken down into 14 general categories. Each category was further divided into a number of functional TRA task statements which are composites of supporting job inventory tasks. Table 41 lists the 14 general categories developed for AFSCs 551X0 and 551X1 and provides the number of associated TRA tasks statements.

A total of 81 TRA tasks were formulated and analyzed. Each task represents a measurable unit of work, having a beginning and an end that forms a significant part of a duty. A Task Analysis Worksheet is used in the analysis process and describes the task, the conditions for performing the task, cues, acceptable standards of performance, resources required, skills necessary, knowledge needed, and related occupational survey report task data. Figure 3 provides an example of a task analysis worksheet. The results of the task analysis process and copies of all Task Analysis Worksheets can be found in the Task Analysis Extract.

TABLE 35

DISTRIBUTION OF DAFSC 551X0 PERSONNEL
ACROSS DUTY SKILL-LEVEL GROUPS
(TRAINING REQUIREMENTS SURVEY DATA)

<u>SKILL LEVEL</u>	<u>PERCENT MEMBERS</u>	
	<u>SURVEYED (N=915)</u>	<u>INTERVIEWED (N=38)</u>
55130	23	11
55150	54	53
55170	22	36

NOTE: Percentages may add to more or less than
100 percent due to rounding

TABLE 36

DISTRIBUTION OF DAFSC 551X1 PERSONNEL
ACROSS DUTY SKILL-LEVEL GROUPS
(TRAINING REQUIREMENTS SURVEY DATA)

<u>SKILL LEVEL</u>	<u>PERCENT MEMBERS</u>	
	<u>SURVEYED (N=931)</u>	<u>INTERVIEWED (N=49)</u>
55131	12	10
55151	60	33
55171	28	57

NOTE: Percentages may add to more or less than
100 percent due to rounding

TABLE 37
DISTRIBUTION OF DAFSC 55199
AND 55100 PERSONNEL
(TRAINING REQUIREMENTS SURVEY DATA)

<u>SKILL LEVEL</u>	<u>PERCENT MEMBERS</u>	
	<u>SURVEYED (N=60)</u>	<u>INTERVIEWED (N=3)</u>
55199	67	67
55100	32	33

NOTE: Percentages may add to more or less than
100 percent due to rounding

TABLE 38
DISTRIBUTION OF DAFSC 551X0 PERSONNEL
ACROSS MAJOR COMMANDS
(TRAINING REQUIREMENTS SURVEY DATA)

<u>MAJCOM</u>	<u>PERCENT MEMBERS</u>	
	<u>SURVEYED</u> <u>(N=915)</u>	<u>INTERVIEWED</u> <u>(N=38)</u>
TAC	24	37
SAC	19	13
MAC	10	2
AFSC	3	45
AFRES	-	0
AFESC	-	2
OTHERS	43	-

* AAC, ACD, AFE, ATC, LOG, PAF, CMC
- Indicates less than 1 percent

NOTE: Percentages may add to more or less than
100 percent due to rounding

TABLE 39
DISTRIBUTION OF DAFSC 551X1 PERSONNEL
ACROSS MAJOR COMMANDS
(TRAINING REQUIREMENTS SURVEY DATA)

<u>MAJCOM</u>	<u>PERCENT MEMBERS</u>	
	<u>SURVEYED</u> <u>(N=931)</u>	<u>INTERVIEWED</u> <u>(N=52)</u>
TAC	21	60
SAC	18	12
MAC	12	3
AFSC	5	8
AFRES	-	15
AFESC	-	2
OTHERS*	44	-

* AAC, ACD, AFE, ATC, LOG, PAF, CMC
- Indicates less than 1 percent

NOTE: Percentages may add to more or less than
100 percent due to rounding

TABLE 40

CAREER LADDER TRAINING RECEIVED
(TRAINING REQUIREMENTS SURVEY DATA)

COURSES	PERCENT MEMBERS RESPONDING							
	55130 (N=212)	55150 (N=498)	55170 (N=205)	55131 (N=112)	55151 (N=557)	55171 (N=262)	55199 (N=41)	55100 (N=19)
J5ABR55131-001 (CONSTRUCTION EQUIPMENT OPERATOR)	6	9	-	96	95	80	39	21
AFESC 551X2 (HEAVY EQUIPMENT WARSKILLS TRAINING (REOTS))	16	23	-	7	23	9	5	16
J3ABR55130-001 (PAVEMENTS MAINTENANCE SPECIALIST)	78	80	-	0	4	5	41	26
J3ABR55170-000 (PAVEMENTS MAINTENANCE TECHNICIAN)	3	8	-	0	1	6	32	21
SEA BEE TRAINING (PROVIDED BY NAVY)	0	0	-	0	-	3	12	5
ASPHALT INST (ARMY CORPS OF ENGINEERS)	-	1	7	0	0	3	5	0
CONCRETE INST (ARMY CORPS OF ENGINEERS)	-	1	4	0	0	-	2	5
OTHER TRAINING (SUCH AS BRATS, EXPLOSIVE ORDNANCE, FIELD 4)	-	10	11	2	7	13	10	16

- Indicates less than 1 percent

TABLE 41
TASK ANALYSIS GENERAL CATEGORIES
(TRAINING REQUIREMENTS SURVEY DATA)

<u>GENERAL CATEGORY</u>	<u>NUMBER OF TRA TASKS</u>
ASPHALT	7
BASE BEAUTIFICATION	3
BUNKERS	3
CONCRETE	11
DRAINAGE	10
EXCAVATE	3
FILL	2
FIRE	2
LOAD	5
MATTING	6
MISCELLANEOUS	15
SNOW	6
WATER WELLS	2
NEW TASKS*	5

* Represents tasks not identified in job inventory

EXAMPLE OF TASK ANALYSIS WORKSHEET

CATEGORY: ASPHALT

TASK: TREAT ASPHALT SURFACES

NOTES: NA

EQUIPMENT: DUMP TRUCK WITH SPREADER BOX ATTACHMENT, LOADER,
ASPHALT DISTRIBUTOR, HAND TOOLS, TOWED SWEEPER,
PNEUMATIC TIRE ROLLER, GRADER

MATERIALS: AGGREGATE, BITUMINOUS MATERIAL, CHIP ROCK,

REFERENCES: ASPHALT TECHNOLOGY

CONDITIONS: 15 PEOPLE TO DO TASK

CUE: WORK ORDER

CONSTRAINTS: WET WEATHER, TEMPERATURE NOT BELOW 50 DEGREES

JOB STANDARDS: IAW REFERENCES

ACTIVITIES: SPREAD ASPHALT MIXTURE, DUMP AND SPREAD CHIP ROCK,
BOND/ROLL/COMPACT LOOSE MATERIALS, REMOVE EXCESS
MATERIALS, ALLOW TO SET 12 HOURS

SKILLS: OPERATE ASPHALT DISTRIBUTORS, USE TOWED-TYPE SWEEPER,
USE ASPHALT CHIP SPREADER, USE HANDTOOLS

KNOWLEDGE: APPLY PROCEDURES FOR BONDING AGENTS
DETERMINE PERCENTAGES OF ASPHALT/AGGREGATE MATERIALS
DETERMINE SIZE GRADATION OF GRAVEL SAMPLES

RELATED OCCUPATIONAL SURVEY REPORT (OSR) TASK DATA:

DUTY/TASK	TNG EMP	1ST JOB	1ST ENL	5 LVL	7 LVL	TSK DIF	ATI
H297 TREAT ASPHALT SURFACES WITH MULTIPLE-PASS SURFACE	1.95	3	3	2	2	5.90	2
H298 TREAT ASPHALT SURFACES WITH SINGLE-PASS SURFACE	1.53	0	2	2	2	5.72	2
H299 TREAT ASPHALT SURFACES WITH SLURRY SEAL COATS	1.58	0	2	1	2	5.40	2
H300 CONSTRUCT ASPHALT DRAINS	2.42	5	6	7	4	5.35	2

FIGURE 3

Future Developments

AFSC 551X0. Pavements Maintenance personnel identified a number of areas which they think will, in the future, have an impact on the career ladder. The following areas should be monitored by the functional community to determine what repercussions, if any, there will be on operations and training.

- (a) New polymer asphalts (a type of petromat membrane for paving purposes)
- (b) New rubber asphalts
- (c) Concrete polymers
- (d) Certified base course geotextiles
- (e) Rheoplastic concrete
- (f) Incorporation of industrial backhoes as assigned equipment
- (g) Micropaver system (computerized pavements program)

The 3-skill level Pavements Maintenance Specialist course has recently been lengthened. Areas identified in the Training Evaluation Report for Course J3ABR55130-001, Pavement Maintenance Specialist, September 1987 through November 1988, dated November 1988, were similar to those identified by interviewees and survey respondents for this study. Reportedly, the school has incorporated training in the computation of concrete and bituminous materials for pavement construction and added hands-on training for the front-end loader and dump truck.

AFSC 551X1. While no future developments were identified for the Construction Equipment Operator Specialty, training in the form of Mobility Training Teams was offered as a method to better train the RRR mini kit.

Training Issues and Recommendations

This section provides a summary of training issues, concerns, and problems identified during the project initiation workshop held at Sheppard AFB in February 1990 and during the task analysis phase. These issues were consolidated during months of interviews with technicians at all levels and most major commands. The questionnaire, designed to address specific issues, also served as an invaluable tool for obtaining responses across a broad spectrum of both specialties. In addition, issues were developed by reviewing Air Force regulations, evaluation reports, Task Analysis Data, and course control documents.

Several issues have reappeared from previous studies of these AFSCs and are directly related to initial skills training received before the first assignment. Each issue generates a corresponding general recommendation following a discussion in this section of this report.

ISSUE #1. Collocation of Pavements Maintenance and Construction Equipment Operator Work Centers. The issue of merging these two AFSCs has been addressed by the functional community for some time. Many bases have established work centers with both Pavements Maintenance and Construction Equipment personnel assigned, resulting in their being cross-utilized and cross-trained. During the field interviews, the impact of these collocated work centers was specifically explored. The results of the discussions were not conclusive, with interviewees being evenly divided for and against merged work centers. The main reason for combined work centers is that people with these AFSCs must work together as a team to accomplish base area engineering maintenance. Being collocated facilitates this teamwork. The main rationale for not having collocated work centers is that personnel will not maintain proficiency because of ineffective training in their specific AFSC. A collateral concern was that collocation of work centers, without career ladder merger, could cause personnel to lose their skills due to spending time on duties and tasks of the adjacent AFSC rather than those of their primary AFSC.

The merger of the two career ladders into a single AFSC would support the concept of team work, help diminish ineffective training, and alleviate the concern about training on tasks outside their specific AFSC.

ISSUE #2. Utilization and Upgrade of DDAs. One of the major concerns in the field was the use and upgrade of Direct Duty Assignment (DDA) personnel. Many felt DDAs did not receive the same training through OJT that they would receive through the technical school. In the case of base CE squadrons, there appeared to be limited opportunity to train (practical application), and in the case of RED HORSE, adequate time to train DDAs was a problem. Most field personnel suggested that Pavements Maintenance personnel should attend the basic course as a prerequisite for entry into the career ladder. Upgrade time-in-skill-level (TISL) and average Total Active Federal Military Service (TAFMS) for both DDAs and members entering by means other than DDA (ODDA), through basic course attendance, are displayed in Tables 42 through 45.

Table 42 shows that of the 212 AFSC 55130 personnel responding to the survey, 51 percent were DDA. Their average TISL at the 1-skill level is 8 months compared to 1 month for the ODDA personnel (length of initial skills training at the technical school). Tables 43 through 45 show that 5- and 7-skill level personnel in both AFSCs, whether DDA or not, averaged 6 to 7 months TISL to upgrade to the 5-skill level from the 3-skill level.

Therefore, differences in time to upgrade between DDA and ODDA personnel are only evident in time to upgrade to the 3-skill level. DDA respondents took eight times longer to upgrade than those who entered through formal technical training. Besides the obvious drawback of having to use unskilled labor, the local unit must also devote resources to on-the-job training (OJT) in order to upgrade DDA personnel. DDA should be further reviewed to determine if it is still a viable method of entry into the career field.

ISSUE #3. Three-skill level utilization. The utilization of apprentice level airmen is addressed from a training perspective; i.e., what should be trained. CE organizations operate to meet the specific mission needs of their base.

TABLE 42

TIME REQUIRED 55130 PERSONNEL TO UPGRADE TO 3-SKILL LEVEL
(TRAINING REQUIREMENTS SURVEY DATA)

<u>TYPE TRAINING</u>	<u>MEMBERS RESPONDING</u>	<u>TIME IN MONTHS</u>					
		<u>MIN AT 1SL</u>	<u>MAX AT 1SL</u>	<u>AVG AT 1SL</u>	<u>MIN TAFMS</u>	<u>MAX TAFMS</u>	<u>AVG TAFMS</u>
DDA	107	3	19	8	6	215	23
ODDA	105	1*	1*	1*	2	3	2

* Reflects completion of formal technical training, J3ABR55130-001,
Pavements Maintenance Specialist Course

TABLE 43

TIME REQUIRED 55150 PERSONNEL TO UPGRADE TO 5-SKILL LEVEL
(TRAINING REQUIREMENTS SURVEY DATA)

<u>TYPE TRAINING</u>	<u>MEMBERS RESPONDING</u>	<u>TIME IN MONTHS</u>					
		<u>MIN AT 3SL</u>	<u>MAX AT 3SL</u>	<u>AVG AT 3SL</u>	<u>MIN TAFMS</u>	<u>MAX TAFMS</u>	<u>AVG TAFMS</u>
DDA	175	1	24	7	13	606	56
ODDA	298	2	24	7	4	246	48

TABLE 44

TIME REQUIRED 55170 PERSONNEL TO UPGRADE TO 5-SKILL LEVEL
(TRAINING REQUIREMENTS SURVEY DATA)

<u>TYPE TRAINING</u>	<u>MEMBERS RESPONDING</u>	<u>TIME IN MONTHS</u>					
		<u>MIN AT 3SL</u>	<u>MAX AT 3SL</u>	<u>AVG AT 3SL</u>	<u>MIN TAFMS</u>	<u>MAX TAFMS</u>	<u>AVG TAFMS</u>
DDA	90	2	17	6	20	307	149
ODDA	102	2	18	7	7	333	158

TABLE 45

TIME REQUIRED 551X1 PERSONNEL TO UPGRADE TO 5-SKILL LEVEL
(TRAINING REQUIREMENTS SURVEY DATA)

<u>SKILL LEVEL</u>	<u>MEMBERS RESPONDING</u>	<u>TIME IN MONTHS</u>					
		<u>MIN AT 3SL</u>	<u>MAX AT 3SL</u>	<u>AVG AT 3SL</u>	<u>MIN TAFMS</u>	<u>MAX TAFMS</u>	<u>AVG TAFMS</u>
55151	469	2	36	7	8	229	53
55171	152	1	24	7	11	436	145

The utilization of 3-skill level members in Pavements Maintenance and Construction Equipment varies according to the base-level CE maintenance concept. A review of OSR data for DAFSCs 55130/55131 personnel in regard to percent members operating or using various equipment items and the time spent on tasks in which those items are used provides hard data upon which to make training decisions. Table 17 shows tasks most commonly performed by first-enlistment personnel, the majority of whom are 3-skill level airmen. Table 18 lists the equipment operated or used by first-enlistment groups. It shows that both 55130 and 55131 first-enlistment personnel use or operate front-end loaders, backhoes, dozers, forklifts, rollers, dump trucks, sweepers, tampers, and graders.

These data provide the technical training community with the tasks 3-skill level personnel should be trained to perform and identify the equipment that should be used in the training. Emphasizing training on equipment most commonly used will channel limited resources to satisfy the critical requirements.

ISSUE #4 Contingency responsibilities and training for AFSCs 551X0/X1 personnel. The SMEs interviewed expressed concern about a lack of guidance on contingency responsibilities and training for AFSC 551X0/X1 functional areas. In May 1989, AFESC published its PRIME BEEF Wartime Task Standard, which addresses this subject and provides information for Civil Engineering specialties in the following areas:

- (a) description of specific wartime tasks, knowledge levels, and technical references
- (b) resources required to accomplish the task, including materials and equipment requirements, necessary skills, and the number of personnel required
- (c) task accomplishment time in days, hours, and minutes
- (d) training required of PRIME BEEF combat support (CS) squadron and teams
- (e) proficiency codes used to indicate squadron/team training level requirements including Home Station Training (CAT 1, Cat 2); Specialized Training (REOTS, CTS, HB); and Formal Training (OJT/ATC, AFIT)

This comprehensive document should receive widespread distribution to all MAJCOMs and training areas responsible for providing contingency training, including Home Station Training, RETS/REOTS, base OJT managers, AFIT, and ATC Technical Training. The inclusion of the Wartime Task Standard as an attachment to this OSR has been approved by HQ AFESC/DEM, Tyndall AFB, Florida.

Field observations indicate contingency training is also provided by Det 2, AFESC, Eglin AFB, Florida. This unit provides training in the following areas: Air Base Combat Support Training, Rapid Runway Repair Technician Training Course, and Base Recovery After Attack Training (BRAAT). While formal contingency training provided by RETS/REOTS and Det 2 appears adequate, Home Station trainers attribute the deficiency in training to an insufficient amount of equipment and the use of outdated equipment resulting in prolonged downtime.

Supervisors and base OJT managers should continue to submit personnel requirements for readiness training to their respective MAJCOM representatives/training managers, mindful of the fact that these training allocations are prorated by Command. Typically, only Air National Guard and Reserve units are trained as a unit, whereas active duty squadrons are scheduled according to the available slots, not necessarily as an intact unit. Base CE managers should reexamine the adequacy of available equipment for effective Home Station training. Inputs from the field indicate the need to place more emphasis on wartime taskings during formal initial skills training for these two specialties and to expand the RRR section in the 5-skill level CDCs.

Training Requirements Analysis Summary

Information on task analysis development and its use is provided for the functional community. General recommendations for updating Pavements Maintenance Specialist and Construction Equipment Operator training were developed. Included are recommendations such as using PRIME BEEF Wartime Task Standards to upgrade contingency training, reviewing direct duty assignments (DDAs) as entrance into the career ladders, and using the Task Analysis Extract for formal OJT update.

JOB SATISFACTION ANALYSIS

Examination of the job satisfaction indicators for various groups gives career ladder managers a better understanding of some of the factors which may impact on job performance of personnel in the career ladder. Attitude questions covering job interest, perceived utilization of talents and training, sense of accomplishment from work, and reenlistment intentions were included in the survey booklet. The information from these questions is provided in Tables 46 through 49 and discussed below.

Job satisfaction data presented in Table 46 show the TAFMS groups for the combined 551XX career ladders matched with similar data for a comparative sample of Direct Support career ladders surveyed in 1990, which is the latest comparative data available. These data provide a relative measure of how job satisfaction of these personnel from this survey sample compares with that of other similar specialties. The data reflect favorable percentages for the 551XX sample groups in most of the areas, with the exception of reenlistment

TABLE 46

COMPARISON OF AFSC 551XX TAFMS GROUP JOB SATISFACTION INDICATORS
(PERCENT MEMBERS RESPONDING)

JOB SATISFACTION INFORMATION	1-48 MOS TAFMS		49-96 MOS TAFMS		97+ MOS TAFMS	
	551XX (N=1,184)	1990 COMP SAMPLE* (N=424)	551XX (N=489)	1990 COMP SAMPLE* (N=495)	551XX (N=814)	1990 COMP SAMPLE* (N=934)
<u>PERCEIVED JOB:</u>						
INTERESTING	68	74	78	80	77	84
SO-SO	19	15	14	12	15	8
DULL	13	11	8	8	7	8
<u>PERCEIVED USE OF TALENT:</u>						
FAIRLY WELL TO PERFECTLY	78	76	81	83	84	84
LITTLE OR NOT AT ALL	22	24	19	17	16	16
<u>PERCEIVED USE OF TRAINING:</u>						
FAIRLY WELL TO PERFECTLY	80	75	80	72	80	73
LITTLE OR NOT AT ALL	20	25	20	28	20	27
<u>SENSE OF ACCOMPLISHMENT FROM WORK:</u>						
SATISFIED	70	69	79	78	75	75
NEUTRAL	13	11	7	8	9	6
DISSATISFIED	17	20	13	14	16	18
<u>REENLISTMENT INTENTIONS:</u>						
WILL/PROBABLY WILL REENLIST	54	48	81	70	75	72
WILL NOT/PROBABLY WILL NOT REENLIST	45	52	18	29	5	10
WILL RETIRE	0	-	0	-	20	18

* Comparative sample composed of Direct Support career ladders surveyed in 1990 (includes AFSCs 496X0, 553X0, and 751X0)

NOTE: Category percentages may not add to 100 percent due to rounding or nonresponse by members of the sample

TABLE 46A

COMPARISON OF AFSC 551X0 TAFMS GROUP JOB SATISFACTION INDICATORS
(PERCENT MEMBERS RESPONDING)

	<u>1-48 MOS TAFMS</u>		<u>49-96 MOS TAFMS</u>		<u>97+ MOS TAFMS</u>	
	551X0 (N=655)	1990 COMP SAMPLE* (N=424)	551X0 (N=203)	1990 COMP SAMPLE* (N=495)	551X0 (N=321)	1990 COMP SAMPLE* (N=934)
<u>JOB SATISFACTION INFORMATION:</u>						
<u>PERCEIVED JOB</u>						
INTERESTING	63	74	75	80	76	84
SO-SO	22	15	16	12	16	8
DULL	15	11	8	8	7	8
<u>PERCEIVED USE OF TALENT:</u>						
FAIRLY WELL TO PERFECTLY LITTLE OR NOT AT ALL	75 25	76 24	85 15	83 17	86 14	84 16
<u>PERCEIVED USE OF TRAINING:</u>						
FAIRLY WELL TO PERFECTLY LITTLE OR NOT AT ALL	81 19	75 25	77 23	72 28	80 20	73 27
<u>SENSE OF ACCOMPLISHMENT FROM WORK:</u>						
SATISFIED	69	69	75	78	76	75
NEUTRAL	15	11	9	8	4	6
DISSATISFIED	16	20	15	14	20	18
<u>REENLISTMENT INTENTIONS:</u>						
WILL/PROBABLY WILL REENLIST	55	48	79	70	75	72
WILL NOT/PROBABLY WILL NOT REENLIST	45	52	20	29	4	10
WILL RETIRE	0	-	1	-	20	18

* Comparative sample composed of Direct Support career ladders surveyed in 1990 (includes AFSCs 496X0, 553X0, and 751X0)

NOTE: Category percentages may not add to 100 percent due to rounding or nonresponse by members of the sample

TABLE 46B

COMPARISON OF AFSC 551X1 TAFMS GROUP JOB SATISFACTION INDICATORS
(PERCENT MEMBERS RESPONDING)

JOB SATISFACTION INFORMATION	1-48 MOS TAFMS		49-56 MOS TAFMS		97+ MOS TAFMS	
	1990 COMP 551X1 (N=529)	SAMPLE* (N=424)	1990 COMP 551X1 (N=285)	SAMPLE* (N=495)	1990 COMP 551X1 (N=427)	SAMPLE* (N=934)
<u>PERCEIVED JOB:</u>						
INTERESTING	74	74	80	80	75	84
SO-SO	16	15	12	12	16	8
DULL	10	11	7	8	7	8
<u>PERCEIVED USE OF TALENT:</u>						
FAIRLY WELL TO PERFECTLY	82	76	82	83	81	84
LITTLE OR NOT AT ALL	18	24	18	17	18	16
<u>PERCEIVED USE OF TRAINING:</u>						
FAIRLY WELL TO PERFECTLY	78	75	82	72	78	73
LITTLE OR NOT AT ALL	22	25	18	28	21	27
<u>SENSE OF ACCOMPLISHMENT FROM WORK:</u>						
SATISFIED	71	69	81	78	73	75
NEUTRAL	10	11	6	8	5	6
DISSATISFIED	19	20	12	14	17	18
<u>REENLISTMENT INTENTIONS:</u>						
WILL/PROBABLY WILL REENLIST	57	48	82	70	77	72
WILL NOT/PROBABLY WILL NOT REENLIST	42	52	18	29	5	10
WILL RETIRE	0	-	0	-	17	18

* Comparative sample composed of Direct Support career ladders surveyed in 1990 (includes AFSCs 496X0, 553X0, and 751X0)

NOTE: Category percentages may not add to 100 percent due to rounding or nonresponse by members of the sample

TABLE 47

COMPARISON OF JOB SATISFACTION FOR 551X0 CURRENT AND 1982 SURVEYS
(PERCENT MEMBERS RESPONDING POSITIVELY)

JOB SATISFACTION INFORMATION	1-48 MOS TAFMS		49-96 MOS TAFMS		97+ MOS TAFMS	
	CURRENT (N=655)	1982 (N=531)	CURRENT (N=203)	1982 (N=125)	CURRENT (N=321)	1982 (N=182)
JOB FAIRLY INTERESTING OR BETTER	63	47	75	58	76	70
TALENT UTILIZED FAIRLY WELL OR BETTER	75	60	85	70	86	82
TRAINING UTILIZED FAIRLY WELL OR BETTER	81	65	77	65	80	87
FAVORABLY CONSIDERING REENLISTMENT	55	38	79	64	75	75

TABLE 48

COMPARISON OF JOB SATISFACTION FOR 551X1 CURRENT AND 1982 SURVEYS
(PERCENT MEMBERS RESPONDING POSITIVELY)

JOB SATISFACTION INFORMATION	1-48 MOS TAFMS		49-96 MOS TAFMS		97+ MOS TAFMS	
	CURRENT (N=529)	1982 (N=425)	CURRENT (N=285)	1982 (N=139)	CURRENT (N=427)	1982 (N=180)
JOB FAIRLY INTERESTING OR BETTER	74	68	80	67	75	73
TALENT UTILIZED FAIRLY WELL OR BETTER	82	71	82	73	81	78
TRAINING UTILIZED FAIRLY WELL OR BETTER	78	71	82	73	78	74
FAVORABLY CONSIDERING REENLISTMENT	57	36	82	66	77	74

TABLE 49

COMPARISON OF JOB SATISFACTION INDICATORS FOR SPECIALTY JOBS
(PERCENT MEMBERS RESPONDING)

JOB SATISFACTION INFORMATION	DUMP TRUCK DRIVER (N=12)		PAVEMENT MAINT (N=149)		CONST EQUIP OPR (N=85)		GROUNDS MAINT (N=76)		BASE AREA MAINT TECH (N=1637)		GRADER OPR (N=7)		CRANE OPR (N=9)		DOZER/SCRAPER OPR (N=10)	
<u>PERCEIVED JOB:</u>																
INTERESTING	42		63		69		37		75		86		78		80	
SO-SO	33		23		15		34		16		14		11		20	
DULL	25		13		15		29		9		0		11		0	
<u>PERCEIVED USE OF TALENT:</u>																
FAIRLY WELL TO PERFECTLY	50		72		75		53		83		86		88		90	
LITTLE OR NOT AT ALL	50		28		25		47		17		14		11		10	
<u>PERCEIVED USE OF TRAINING:</u>																
FAIRLY WELL TO PERFECTLY	33		81		68		38		85		86		66		100	
LITTLE OR NOT AT ALL	67		19		32		63		15		14		33		0	
<u>SENSE OF ACCOMPLISHMENT FROM WORK:</u>																
SATISFIED	50		68		62		50		76		86		89		80	
NEUTRAL	8		15		11		20		10		0		0		0	
DISSATISFIED	42		17		27		30		13		14		11		20	
<u>REENLISTMENT INTENTIONS:</u>																
WILL/PROBABLY WILL REENLIST	50		48		68		61		68		71		89		30	
WILL NOT/PROBABLY WILL NOT REENLIST	50		52		28		39		28		14		11		70	
WILL RETIRE	0		1		4		0		4		14		11		0	

NOTE: Category percentages may not add to 100 percent due to rounding or nonresponse by members of the sample

TABLE 49 (CONTINUED)

COMPARISON OF JOB SATISFACTION INDICATORS FOR SPECIALTY JOBS
(PERCENT MEMBERS RESPONDING)

JOB SATISFACTION INFORMATION	SNOW REMOVAL SPECL (N=10)		RANGE OPNS SPECL (N=5)		CONST EQUIP INSP (N=5)		HEAVY EQUIP INSTR (N=11)		SUPPLY NCO (N=6)		SUPVR (N=246)		VEHICLE CON (N=28)		ENGRG SPT MGR (N=5)		QUALITY ASSURANCE NCO (N=7)	
<u>PERCEIVED JOB:</u>																		
INTERESTING	50		80		50		91		50		86		75		100		86	
SO-SO	20		20		20		0		50		11		18		0		0	
DULL	20		0		20		9		0		3		7		0		14	
<u>PERCEIVED USE OF TALENT:</u>																		
FAIRLY WELL TO PERFECTLY	70		80		70		91		100		91		78		100		71	
LITTLE OR NOT AT ALL	30		20		30		9		0		9		18		0		29	
<u>PERCEIVED USE OF TRAINING</u>																		
FAIRLY WELL TO PERFECTLY	80		60		80		82		100		86		57		60		71	
LITTLE OR NOT AT ALL	20		40		20		18		0		14		43		40		29	
<u>SENSE OF ACCOMPLISHMENT FROM WORK:</u>																		
SATISFIED	50		60		50		73		100		80		71		100		86	
NEUTRAL	20		20		20		0		0		6		14		0		0	
DISSATISFIED	30		20		30		23		0		14		14		0		14	
<u>REENLISTMENT INTENTIONS:</u>																		
WILL/PROBABLY WILL REENLIST	40		100		40		82		100		67		71		60		40	
WILL NOT/PROBABLY WILL NOT REENLIST	60		0		60		9		0		7		11		20		60	
WILL RETIRE	0		0		0		9		0		26		18		20		0	

NOTE: Category percentages may not add to 100 percent due to rounding or nonresponse by members of the sample

intentions for second enlistment personnel. The 551XX sample is 11 percentage points better than the comparative group, while no other comparisons exceed 8 percent.

Table 46A provides the same type data for the 551X0 and comparative groups. This table reflects the majority of the areas are favorable for the 551X0 sample, with one major exception. The job interest factor for the 551X0 first-enlistment personnel is 11 percentage points below the comparative group, while all the other differences are within 9 percentage points of each other.

The data shown in Table 46B for 551X1 personnel and the comparative group reflect that the majority of the areas favor the 551X1 sample. All of the differences are within 10 percentage points.

Tables 47 and 48 show comparison data for the present 551X0 and 551X1 TAFMS sample groups and those same groups from the previous sample. With only one exception, utilization of training for career personnel in AFSC 551X0, the present percentages are at least equal to or better than those of the previous survey.

Table 49 provides data on personnel in the specialty jobs discussed in the SPECIALTY JOBS section of this report. An examination of the data may show how overall job satisfaction may be influenced by the type of job performed. Most jobs appear to have favorable percentages for the job satisfaction indicators. There are two jobs, however, that reflect lower than expected percentages in at least two indicators. Less than 50 percent of the personnel in the Dump Truck Driver and Grounds Maintenance Specialist jobs perceive their jobs as being interesting or feel they are using their training. This may be accounted for by the type of jobs they are, being entry-level jobs, and the incumbents doing mostly manual tasks and having limited responsibilities. This would also reduce the ability to use more advanced training they may have received.

When there are serious problems in an occupation, survey respondents are usually quite free with write-in comments to complain about perceived problems in the field. Fifteen percent of the individuals in the survey sample used the write-in feature. The majority of the write-in comments (88 percent) deal with explaining the type of job held, tasks not listed but performed, expansion on answers to background questions, etc. The remaining comments dealt with areas that could impact on effectiveness or morale.

There were 45 responses, 2 percent of the sample, which could be considered specific complaints or recommendations. These airmen did not necessarily limit their comments to a single idea. The following are synopses of the most frequently mentioned:

Most duty time spent cutting grass and not doing what trained for (seven comments).

On-the-job training (OJT) for equipment operators (DAFSC 551X1) is either inadequate or non existent. Personnel do not get experience operating equipment, such as cranes or graders because civilians or contractors operate them. (24 Comments)

Assigned to work outside of AFSC, wasting valuable training (4 comments)

AFSC should not be merged, will not allow for trained heavy equipment operators (3 comments).

The comments represent a small percentage of the surveyed population and do not necessarily reflect large scale dissatisfaction with the career ladder, but do provide at least one area that should be carefully reviewed by functional managers. OJT or work experience on equipment such as graders, cranes, and dozers may not be available to personnel, especially junior individuals, in the field now. How will the Air Force get trained and experienced heavy equipment operator personnel for contingency operations in the future, if they do not do it as part of their normal job?

IMPLICATIONS

The 551X0 and 551X1 career ladders appear to have drawn closer together in actual responsibility and job performance since the last survey. This is due, in great part, to the combining of the two functional areas into a single work center at many installations. This provided personnel the opportunity to learn how to do tasks of the other AFSCs, allowed more latitude in tasks performed and afforded supervisors the ability to cross-utilize personnel to meet the needs of the organization. This cross-utilization may have detracted from the equipment operators getting to use the equipment on which they were trained. This is particularly evident in the percentages of personnel from both AFSCs performing the core specialty job of Base Area Maintenance Technician. The survey data appear to support the proposed merger of the two AFSCs. The 551X0 STS, with 18 percent of the matched elements not supported and 10 percent having inappropriate proficiency codes, should be reviewed for possible revision. The 551X1 STS, with 32 percent of the matched elements not supported and 19 percent having inappropriate training codes, should be reviewed for possible revision. If the merger of AFSCs 551X0 and 551X1 is

approved and to be effected, the proposed draft STS, with 18 percent of the subparagraphs not supported and 18 percent of the subparagraphs having inappropriate proficiency codes, should be reviewed for potential modification, prior to its approval and implementation. Tasks not matched to any of the STSs elements need to be reviewed for possible creation of additional elements to the STSs. The 55130 POI and the 55131 POI, each with 15 percent of their matched blocks not supported, should be reviewed for possible revision. The tasks not matched to the POI elements should also be reviewed for possible creation of additional elements in the POIs. Task analysis provides an excellent tool for functional personnel to use in developing on-the-job training.

APPENDIX A
SELECTED REPRESENTATIVE TASKS PERFORMED
BY CAREER LADDER JOB GROUPS

TABLE I

GROUP NUMBER AND TITLE: STG170, DUMP TRUCK DRIVER
 GROUP SIZE: 12 PERCENT MEMBERS OF SAMPLE: -
 AVERAGE GRADE: E-3 AVERAGE TAFMS: 18
 AVERAGE TICF: 16 AVERAGE TASKS PERFORMED: 21

TASKS ARE LISTED IN DESCENDING ORDER OF PERCENT MEMBERS PERFORMING:

<u>Tasks</u>	<u>Percent of Members Performing</u>
M517 Dump materials from dump trucks with tailgate down	100
M518 Dump materials from dump trucks with tailgate up	100
M523 Haul materials using dump trucks	100
M538 Perform operator inspections and maintenance on dump trucks	67
M554 Tow equipment using dump trucks	67
L444 Cut grass using weed eaters	58
M524 Haul materials using forklifts	50
L440 Cut grass using hand mowers or self-propelled mowers	42
L443 Cut grass using tractors with mower attachments	42
F160 Break asphalt or concrete using handtools, other than jackhammers	33
L446 Edge grass areas using weed eaters	33
L462 Maintain barbed wire fences	33
L472 Perform operator inspections and maintenance on mowers	33
L480 Remove trees or shrubs by hand	33
L485 Seed grass by hand	33
M509 Attach or remove trailers to or from dump trucks	33
M553 Stockpile materials using wheel-mounted front-end loaders	33
F162 Clear vegetation or debris from area using handtools	25
S873 Sweep airfield pavements using vacuum sweepers	25
S875 Sweep areas using multipurpose sweepers	25

- Indicates less than 1 percent

TABLE II

GROUP NUMBER AND TITLE: STG96, PAVEMENT MAINTENANCE SPECIALIST
 GROUP SIZE: 149 PERCENT MEMBERS OF SAMPLE: 6%
 AVERAGE GRADE: E-3 AVERAGE TAFMS: 29
 AVERAGE TICF: 23 AVERAGE TASKS PERFORMED: 54

TASKS ARE LISTED IN DESCENDING ORDER OF PERCENT MEMBERS PERFORMING:

Tasks	Percent of Members Performing
G188 Break concrete using jackhammers	91
M518 Dump materials from dump trucks with tailgate up	84
M523 Haul materials using dump trucks	83
F160 Break asphalt or concrete using handtools, other than jackhammers	78
G208 Finish concrete pavements using brooms	77
H259 Break asphalt using jackhammers	77
G207 Finish concrete pavements by hand	76
M517 Dump materials from dump trucks with tailgate down	75
M538 Perform operator inspections and maintenance on dump trucks	72
F166 Compact base course materials or subgrade using small powered equipment or hand tampers	72
F171 Excavate areas using handtools	68
F162 Clear vegetation or debris from area using handtools	67
F163 Compact base course materials or subgrade using pactors	67
F174 Install or remove signs	66
G203 Cut concrete using saws	64
M554 Tow equipment using dump trucks	64
G201 Construct concrete forms	62
G211 Finish concrete surfaces using bullfloats	62
G218 Level concrete using hand screeds	58
G250 Remove concrete forms	58

TABLE III

GROUP NUMBER AND TITLE: STG153, CONSTRUCTION EQUIPMENT OPERATOR
 GROUP SIZE: 85 PERCENT MEMBERS OF SAMPLE: 3%
 AVERAGE GRADE: E-4 AVERAGE TAFMS: 63
 AVERAGE TICF: 57 AVERAGE TASKS PERFORMED: 81

TASKS ARE LISTED IN DESCENDING ORDER OF PERCENT MEMBERS PERFORMING:

Tasks	Percent of Members Performing
M523 Haul materials using dump trucks	98
M518 Dump materials from dump trucks with tailgate up	95
M538 Perform operator inspections and maintenance on dump trucks	95
M528 Level areas by backdragging using wheel-mounted front-end loaders	93
M553 Stockpile materials using wheel-mounted front-end loaders	93
M517 Dump materials from dump trucks with tailgate down	89
M524 Haul materials using forklifts	87
M542 Perform operator inspections and maintenance on wheel-mounted front-end loaders	87
M532 Load or off-load materials or equipment using forklifts	85
M541 Perform operator inspections and maintenance on track-mounted or wheel-mounted front-end loader attachments	82
M551 Spread materials using wheel-mounted front-end loaders	80
M539 Perform operator inspections and maintenance on forklifts	79
M549 Spread materials from dump trucks	75
M531 Load materials using track-mounted or wheel-mounted front-end loaders with buckets	74
M554 Tow equipment using dump trucks	73
M511 Backfill excavations using wheel-mounted front-end loaders	72
F161 Clear vegetation or debris from area using construction equipment	71
M530 Level materials using wheel-mounted front-end loaders with multipurpose buckets	69
M537 Perform dozer, scraper, or clamshell operations using wheel-mounted front-end loader with multipurpose buckets	69
M525 Haul materials using track-mounted or wheel-mounted front-end loaders with multipurpose buckets	67

TABLE IV

GROUP NUMBER AND TITLE: GRP214, GROUNDS MAINTENANCE SPECIALIST
 GROUP SIZE: 76 PERCENT MEMBERS OF SAMPLE: 3%
 AVERAGE GRADE: E-3 AVERAGE TAFMS: 37
 AVERAGE TICF: 31 AVERAGE TASKS PERFORMED: 62

TASKS ARE LISTED IN DESCENDING ORDER OF PERCENT MEMBERS PERFORMING:

Tasks	Percent of Members Performing
L444 Cut grass using weed eaters	92
L440 Cut grass using hand mowers or self-propelled mowers	88
L446 Edge grass areas using weed eaters	76
L443 Cut grass using tractors with mower a attachments	74
M518 Dump materials from dump trucks with tailgate up	72
M538 Perform operator inspections and maintenance on dump trucks	72
M523 Haul materials using dump trucks	70
F162 Clear vegetation or debris from area using handtools	68
L485 Seed grass by hand	67
M517 Dump materials from dump trucks with tailgate down	67
L442 Cut grass using towed mowers	64
L476 Plant trees or shrubs	61
L441 Cut grass using handtools	59
M554 Tow equipment using dump trucks	57
K381 Camouflage equipment or materials	55
M549 Spread materials from dump trucks	54
L472 Perform operator inspections and maintenance on mowers	51
L480 Remove trees or shrubs by hand	51
L429 Apply fertilizers using hand equipment	50
M542 Perform operator inspections and maintenance on wheel-mounted front-end loaders	50

TABLE V

GROUP NUMBER AND TITLE: STG112, BASE AREA MAINTENANCE TECHNICIAN
 GROUP SIZE: 1,637 PERCENT MEMBERS OF SAMPLE: 66%
 AVERAGE GRADE: E-4 AVERAGE TAFMS: 68
 AVERAGE TICF: 62 AVERAGE TASKS PERFORMED: 192

TASKS ARE LISTED IN DESCENDING ORDER OF PERCENT MEMBERS PERFORMING:

<u>Tasks</u>	<u>Percent of Members Performing</u>
M518 Dump materials from dump trucks with tailgate up	96
M523 Haul materials using dump trucks	96
M538 Perform operator inspections and maintenance on dump trucks	94
M517 Dump materials from dump trucks with tailgate down	93
M554 Tow equipment using dump trucks	89
G188 Break concrete using jackhammers	88
M549 Spread materials from dump trucks	87
F161 Clear vegetation or debris from area using construction equipment	86
G207 Finish concrete pavements by hand	86
G208 Finish concrete pavements using brooms	86
M528 Level areas by backdragging using wheel-mounted front-end loaders	86
M542 Perform operator inspections and maintenance on wheel-mounted front-end loaders	86
F166 Compact base course materials or subgrade using small powered equipment or hand tampers	85
H259 Break asphalt using jackhammers	85
M553 Stockpile materials using wheel-mounted front-end loaders	85
F171 Excavate areas using handtools	84
M551 Spread materials using wheel-mounted front-end loaders	84
F167 Compact base course materials or subgrade using steel wheel rollers	82
M524 Haul materials using forklifts	82
F160 Break asphalt or concrete using handtools, other than jackhammers	81

TABLE VI

GROUP NUMBER AND TITLE: STG144, GRADER OPERATOR
 GROUP SIZE: 7 PERCENT MEMBERS OF SAMPLE: -
 AVERAGE GRADE: E-5 AVERAGE TAFMS: 110
 AVERAGE TICC: 104 AVERAGE TASKS PERFORMED: 112

TASKS ARE LISTED IN DESCENDING ORDER OF PERCENT MEMBERS PERFORMING:

<u>Tasks</u>	<u>Percent of Members Performing</u>
M517 Dump materials from dump trucks with tailgate down	100
M518 Dump materials from dump trucks with tailgate up	100
O603 Crown dirt roads using graders	100
O604 Cut and fill using graders	100
O617 Perform operator inspections and maintenance on graders	100
O629 Windrow materials using graders	100
M523 Haul materials using dump trucks	86
O597 Attach or remove grader attachments	86
O598 Backfill using graders	86
O599 Blend materials using graders	86
O602 Construct road shoulders using graders	86
O613 Maintain ditches using graders	86
O615 Maintain unpaved roads using graders	86
O624 Rough grade areas using graders	86
O626 Spread materials other than asphalt using graders	86
R786 Set outriggers for crane operation	86
O614 Maintain road shoulders using graders	71
R742 Direct crane operators using hand signals	71
R765 Perform operator inspections and maintenance on hydraulic cranes	71
O619 Remove or replace grader cutting edges or end-bits	71

- Indicates less than 1 percent

TABLE VII

GROUP NUMBER AND TITLE: STG197, CRANE OPERATOR

GROUP SIZE: 9

PERCENT MEMBERS OF SAMPLE: -

AVERAGE GRADE: E-6

AVERAGE TAFMS: 155

AVERAGE TICF: 149

AVERAGE TASKS PERFORMED: 148

TASKS ARE LISTED IN DESCENDING ORDER OF PERCENT MEMBERS PERFORMING:

<u>Tasks</u>	<u>Percent of Members Performing</u>
B27 Counsel subordinates on personal or military-related subjects	100
E132 Annotate or initiate AF Forms 1800 (Operator's Inspection Guide and Trouble Report (General Purpose Vehicles))	100
E133 Annotate or initiate AF Forms 1806 (Operator's Inspection Guide and Trouble Report (Special Equipment))	100
M518 Dump materials from dump trucks with tailgate up	100
M523 Haul materials using dump trucks	100
M538 Perform operator inspections and maintenance on dump trucks	100
R741 Determine safe lifting capacity using load charts	100
R745 Drive wheel-mounted cranes to or from work areas	100
R751 Inspect crane cables	100
R770 Prepare loads for lifting by chains	100
R786 Set outriggers for crane operation	100
S854 Perform operator inspections and maintenance on tractor trailers	100
B57 Supervise Construction Equipment Operators (AFSC 55151)	89
D97 Conduct OJT	89
R740 Determine required boom angles	89
R742 Direct crane operators using hand signals	89
R772 Prepare loads for lifting by slings	89
S820 Haul construction equipment using lowboys	89

- Indicates less than 1 percent

TABLE VIII

GROUP NUMBER AND TITLE: STG 265, DOZER/SCRAPER OPERATOR
 GROUP SIZE: 10 PERCENT MEMBERS OF SAMPLE: -
 AVERAGE GRADE: E-3 AVERAGE TAFMS: 31
 AVERAGE TICF: 29 AVERAGE TASKS PERFORMED: 74

TASKS ARE LISTED IN DESCENDING ORDER OF PERCENT MEMBERS PERFORMING:

Tasks	Percent of Members Performing
M542 Perform operator inspections and maintenance on wheel-mounted front-end loaders	100
P681 Perform operator inspections and maintenance on track-mounted dozers	100
Q719 Haul materials using motorized scrapers	100
M523 Haul materials using dump trucks	90
M538 Perform operator inspection and maintenance on dump trucks	90
P640 Backdrag using track-mounted dozers	90
P642 Backfill using track-mounted dozers	90
P702 Stockpile materials using track-mounted dozers	90
Q723 Load motorized scrapers on level ground	90
Q725 Perform operator inspections and maintenance on motorized scrapers	90
P679 Maintain sanitary fills using track-mounted dozers	80
M518 Dump materials from dump trucks with tailgate up	80
M528 Level areas by backdragging using wheel-mounted front-end loaders	80
O604 Cut and fill using graders	80
O615 Maintain unpaved roads using graders	80
O617 Perform operator inspections and maintenance on graders	80
Q715 Cut sanitary fills using motorized scrapers	80
Q721 Load downhill using motorized scrapers	80
Q717 Excavate areas using motorized scrapers	70

- Indicates less than 1 percent

TABLE IX

GROUP NUMBER AND TITLE: STG206, SNOW REMOVAL SPECIALIST

GROUP SIZE: 10

PERCENT MEMBERS OF SAMPLE: -

AVERAGE GRADE: E-3

AVERAGE TAFMS: 23

AVERAGE TICF: 21

AVERAGE TASKS PERFORMED: 49

TASKS ARE LISTED IN DESCENDING ORDER OF PERCENT MEMBERS PERFORMING:

<u>Tasks</u>	<u>Percent of Members Performing</u>
M517 Dump materials from dump trucks with tailgate down	100
M518 Dump materials from dump trucks with tailgate up	100
M523 Haul materials using dump trucks	100
T885 Clean snow from snow removal equipment	90
T890 Haul snow using dump trucks	90
T897 Load snow into trucks using track-mounted or wheel-mounted front-end loaders	90
T914 Remove snow using air blast snow sweepers	90
M538 Perform operator inspections and maintenance on dump trucks	80
T894 Install or remove underbody blades	80
T900 Perform operator inspections and maintenance on snow removal equipment	80
T903 Remove or replace air blast snow sweeper cores	80
T886 Clear snow or ice from runway lights	70
F160 Break asphalt or concrete using handtools, other than jackhammers	60
T921 Remove snow using rollover snowplows	60
F171 Excavate areas using handtools	60
F174 Install or remove signs	60
T902 Remove ice using underbody scrapers	60
T913 Remove snow or ice using wheel-mounted front-end loaders	60
M554 Tow equipment using dump trucks	50
T918 Remove snow using high speed ribbon blowers	50

- Indicates less than 1 percent

TABLE X

GROUP NUMBER AND TITLE: STG92, RANGE OPERATIONS SPECIALIST
 GROUP SIZE: 5 PERCENT MEMBERS OF SAMPLE: -
 AVERAGE GRADE: E-5 AVERAGE TAFMS: 118
 AVERAGE TICF: 111 AVERAGE TASKS PERFORMED: 90

TASKS ARE LISTED IN DESCENDING ORDER OF PERCENT MEMBERS PERFORMING:

<u>Tasks</u>	<u>Percent of Members Performing</u>
X998 Clear destroyed heavy armor from range	100
X999 Construct wooden targets or storage areas	100
X1000 Coordinate bomb removal with Explosive Ordnance Disposal X1000 (EOD)	100
X1001 Coordinate clearance for range targets with Range Operations Control Center	100
X1003 Install target areas	100
X1004 Load or off-load damaged armored equipment onto or from trailers	100
X1005 Load or off-load undamaged armored equipment onto or from trailers	100
X1010 Operate armored vehicles	100
X1011 Perform operator inspections and maintenance on armored vehicles	100
X1014 Perform operator inspections and maintenance on tank haulers	100
X1015 Perform winch operations on tank haulers	100
X1018 Position armored vehicles	100
X1019 Prepare target vehicles for range use	100
X997 Clean asphalt or concrete range grids	80
X1007 Maintain range gates	80
X1009 Maintain target areas	80
X1013 Perform operator inspections and maintenance on recovery vehicles	80
X1016 Pick up expended bombs using recovery vehicles	80
X1017 Pick up expended shells by hand	80
X1021 Tow wheel targets	80

- Indicates less than 1 percent

TABLE XI

GROUP NUMBER AND TITLE: STG164, CONSTRUCTION EQUIPMENT INSPECTOR
 GROUP SIZE: 5 PERCENT MEMBERS OF SAMPLE: -
 AVERAGE GRADE: E-5 AVERAGE TAFMS: 168
 AVERAGE TICF: 159 AVERAGE TASKS PERFORMED: 38

TASKS ARE LISTED IN DESCENDING ORDER OF PERCENT MEMBERS PERFORMING:

Tasks	Percent of Members Performing
M538 Perform operator inspections and maintenance on dump trucks	100
M542 Perform operator inspections and maintenance on wheel-mounted front-end loaders	100
O617 Perform operator inspections and maintenance on graders	100
N586 Perform operator inspections and maintenance on backhoes	100
M539 Perform operator inspections and maintenance on forklifts	80
M540 Perform operator inspections and maintenance on track-mounted front-end loaders	80
N588 Perform operator inspections and maintenance on tractors	80
O616 Perform operator inspections and maintenance on grader attachments	80
R765 Perform operator inspections and maintenance on hydraulic cranes	80
S838 Perform operator inspections and maintenance on cargo vehicles	80
S847 Perform operator inspections and maintenance on pneumatic tired rollers	80
S851 Perform operator inspections and maintenance on steel-wheel rollers	80
S853 Perform operator inspections and maintenance on towed-type sweepers	80
S854 Perform operator inspections and maintenance on tractor trailers	80
E132 Annotate or initiate AF Forms 1800 (Operator's Inspection Guide and Trouble Report (General Purpose Vehicles))	60
E155 Maintain maintenance data records	60
M541 Perform operator inspections and maintenance on track-mounted or wheel-mounted front-end loader attachments	60
S852 Perform operator inspections and maintenance on street sweepers	60
S855 Perform operator inspections and maintenance on vacuum sweepers	60
S845 Perform operator inspections and maintenance on multipurpose sweepers	60

- Indicates less than 1 percent

TABLE XII

GROUP NUMBER AND TITLE: STG164, HEAVY EQUIPMENT INSTRUCTOR
 GROUP SIZE: 11 PERCENT MEMBERS OF SAMPLE: -
 AVERAGE GRADE: E-5 AVERAGE TAFMS: 124
 AVERAGE TICF: 105 AVERAGE TASKS PERFORMED: 37

TASKS ARE LISTED IN DESCENDING ORDER OF PERCENT MEMBERS PERFORMING:

<u>Tasks</u>	<u>Percent of Members Performing</u>
D91 Administer tests	100
D98 Conduct resident course classroom training	100
D100 Counsel trainees on training progress	100
D111 Prepare lesson plans	100
D112 Prepare training aids	100
D107 Evaluate progress of trainees	91
D115 Score tests	91
D117 Write test questions	91
D113 Procure training aids, space, or equipment	64
A14 Plan or prepare briefings	55
B27 Counsel subordinates on personal or military-related problems	55
C73 Evaluate personnel for compliance with performance standards	55
D099 Conduct training conferences or briefings	55
D104 Develop resident course curriculum materials	55
D109 Maintain training records, charts, or graphs	55
A12 Establish performance standards	45
E154 Maintain dispatch logs	45
M524 Haul materials using forklifts	45
S845 Perform operator inspections and maintenance	45
S875 Sweep areas using multipurpose sweepers on multipurpose sweepers	45

- Indicates less than 1 percent

TABLE XIII

GROUP NUMBER AND TITLE: STG150, SUPPLY NCO

GROUP SIZE: 6

PERCENT MEMBERS OF SAMPLE: -

AVERAGE GRADE: E-5

AVERAGE TAFMS: 153

AVERAGE TICF: 133

AVERAGE TASKS PERFORMED: 76

TASKS ARE LISTED IN DESCENDING ORDER OF PERCENT MEMBERS PERFORMING:

<u>Tasks</u>	<u>Percent of Members Performing</u>
A5 Determine requirements for space, personnel, equipment or supplies	100
E133 Annotate or initiate AF Forms 1806 (Operator's Inspection Guide and Trouble Report (Special Equipment))	100
E137 Annotate or initiate AF Forms 2005 (Issue/Turn in Request)	100
E148 Attach or annotate equipment status labels or tags, such as DD Forms 1574 (Serviceable Tag - Materiel)	100
E153 Inventory equipment, tools, or supplies	100
C75 Evaluate procedures for storage, inventory, or inspection of property items	83
E126 Annotate or initiate AF Forms 1297 (Temporary Issue Receipt)	83
E142 Annotate or initiate AF Forms 601 (Equipment Action Request)	83
E143 Annotate or initiate AF Forms 9 (Request for Purchase)	83
S867 Secure equipment or materials for transport	83
C69 Evaluate job hazards or compliance with Air Force Occupational Safety and Health (AFOSH) program standards	67
C71 Evaluate maintenance or use of workspace, equipment, or supplies	67
C72 Evaluate new equipment	67
C73 Evaluate personnel for compliance with performance standards	67
C89 Write EPRs	67
E130 Annotate or initiate AF Forms 171 (Request for Driver's Tng and Additions to U.S. Government Motor Veh Opr's Permit)	67
E132 Annotate or initiate AF Forms 1800 (Operator's Inspection Guide and Trouble Report (General Purpose Vehicles))	67
E146 Annotate or initiate DD Forms 1348-6 (DOD Single Line Item Requisition System Document (Manual-Long Form))	67
M524 Haul materials using forklifts	67
S838 Perform operator inspections and maintenance on cargo vehicles	67

- Indicates less than 1 percent

TABLE XIV

GROUP NUMBER AND TITLE: STG83, SUPERVISOR

GROUP SIZE: 246

PERCENT MEMBERS OF SAMPLE: 10%

AVERAGE GRADE: E-7

AVERAGE TAFMS: 196

AVERAGE TICF: 183

AVERAGE TASKS PERFORMED: 92

TASKS ARE LISTED IN DESCENDING ORDER OF PERCENT MEMBERS PERFORMING:

Tasks	Percent of Members Performing
B27 Counsel subordinates on personal or military-related problems	94
A3 Coordinate work activities with other civil engineering shops	93
A6 Determine work priorities	92
C89 Write EPRs	89
A5 Determine requirements for space, personnel, equipment, or supplies	85
A25 Schedule leaves or passes	83
A4 Coordinate work progress with base civil engineering scheduling	82
A16 Plan or schedule weekly work requirements	80
A2 Assign sponsors for newly assigned personnel	78
A15 Plan or schedule daily work requirements	78
B26 Conduct or participate in staff meetings	78
C64 Conduct performance feedback worksheet (PFW) sessions	78
A1 Assign personnel to duty positions	76
C73 Evaluate personnel for compliance with performance standards	76
A8 Develop self-inspection programs	75
A9 Develop work methods or procedures	75
A17 Plan or schedule work assignments	73
E132 Annotate or initiate AF Forms 1800 (Operator's Inspection Guide and Trouble Report (General Purpose Vehicles))	72
C63 Analyze workload requirements	70
C83 Indorse enlisted performance reports (EPRs)	69

TABLE XV

GROUP NUMBER AND TITLE: STG81, VEHICLE CONTROLLER

GROUP SIZE: 28

PERCENT MEMBERS OF SAMPLE: 1%

AVERAGE GRADE: E-6

AVERAGE TAFMS: 157

AVERAGE TICF: 133

AVERAGE TASKS PERFORMED: 29

TASKS ARE LISTED IN DESCENDING ORDER OF PERCENT MEMBERS PERFORMING:

<u>Tasks</u>	<u>Percent of Members Performing</u>
E130 Annotate or initiate AF Forms 171 (Request for Driver's Tng and Additions to U.S. Government Motor Veh Opr's Permit)	89
E133 Annotate or initiate AF Forms 1806 (Operator's Inspection Guide and Trouble Report (Special Equipment))	79
E132 Annotate or initiate AF Forms 1800 (Operator's Inspection Guide and Trouble Report (General Purpose Vehicles))	72
B62 Write correspondence	71
E149 Complete accident or incident report forms	68
A14 Plan or prepare briefings	61
B26 Conduct or participate in staff meetings	61
E136 Annotate or initiate AF Forms 198 (Report of Survey for Air Force Property)	57
C84 Investigate accidents or incidents	54
A8 Develop self-inspection programs	50
A19 Plan safety or security programs	50
B49 Implement safety or security programs or procedures	50
A22 Prepare operating instructions	43
D111 Prepare lesson plans	43
E134 Annotate or initiate AF Forms 1812 (Operator's Inspection Guide and Trouble Report (Special Equipment))	43
B27 Counsel subordinates on personal or military-related problems	39
E143 Annotate or initiate AF Forms 9 (Request for Purchase)	39
E142 Annotate or initiate AF Forms 601 (Equipment Action Request)	36
B39 Direct maintenance or utilization of equipment	32
C67 Evaluate inspection reports or procedures	32

TABLE XVI

GROUP NUMBER AND TITLE: STG137, ENGINEERING SUPPORT MANAGER
 GROUP SIZE: 5 PERCENT MEMBERS OF SAMPLE: -
 AVERAGE GRADE: E-8 AVERAGE TAFMS: 246
 AVERAGE TICF: 240 AVERAGE TASKS PERFORMED: 8

TASKS ARE LISTED IN DESCENDING ORDER OF PERCENT MEMBERS PERFORMING:

Tasks	Percent of Members Performing
B26 Conduct or participate in staff meetings	100
B62 Write correspondence	80
A14 Plan or prepare briefings	60
A8 Develop self-inspection programs	40
A10 Draft budget requirements	40
B50 Implement self-inspection programs	40
C72 Evaluate new equipment	40
C79 Evaluate suggestions	40
C90 Write staff studies, surveys, or special reports, other than training reports	40
A5 Determine requirements for space, personnel, equipment, or supplies	20
A6 Determine work priorities	20
A9 Develop work methods or procedures	20
A11 Establish organizational policies such as, office instructions (OIs) or standard operating procedures (SOPs)	20
B37 Direct maintenance of administrative files	20
B49 Implement safety or security programs or procedures	20
B51 Implement suggestion programs	20
B53 Interpret policies, directives, or procedures for subordinates	20
C66 Evaluate budget requirements	20
E130 Annotate or initiate AF Forms 171 (Request for Driver's Tng and Additions to US Government Motor Veh Opr's Permit)	20
E136 Annotate or initiate AF Forms 198 (Report of Survey for Air Force Property)	20

- Indicates less than 1 percent

TABLE XVII

GROUP NUMBER AND TITLE: STG159, QUALITY ASSURANCE NCO
 GROUP SIZE: 7 PERCENT MEMBERS OF SAMPLE: -
 AVERAGE GRADE: E-7 AVERAGE TAFMS: 199
 AVERAGE TICF: 199 AVERAGE TASKS PERFORMED: 26

TASKS ARE LISTED IN DESCENDING ORDER OF PERCENT MEMBERS PERFORMING:

Tasks	Percent of Members Performing
A14 Plan or prepare briefings	100
B26 Conduct or participate in staff meetings	100
B62 Write correspondence	86
A8 Develop self-inspection programs	71
A10 Draft budget requirements	71
C67 Evaluate inspection reports or procedures	71
C90 Write staff studies, surveys, or special reports, other than training reports	71
A5 Determine requirements for space, personnel, equipment, or supplies	57
A11 Establish organizational policies such as, office instruc- tions (OIs) or standard operating procedures (SO's)	57
A18 Plan Rapid Runway Repair (RRR) operations	57
B28 Develop tables, graphs, or diagrams for technical reports	57
B33 Direct development or maintenance of status boards, graphs, or charts	57
B48 Implement cost-reduction programs	57
B44 Direct Rapid Runway Repair (RRR) exercises	57
C65 Evaluate administrative forms, files, or procedures	57
B53 Interpret policies, directives, or procedures for subordinates	43
C66 Evaluate budget requirements	43
C71 Evaluate maintenance or use of workspace, equipment, or supplies	43
C73 Evaluate personnel for compliance with performance standards	43
C76 Evaluate Rapid Runway Repair (RRR) exercises	43

- Indicates less than 1 percent

APPENDIX B
551X0 STS SUBPARAGRAPHS REQUIRING REVIEW

UNSUPPORTED AFSC 551X0 STS SUBPARAGRAPHS

The following is a listing of the subparagraph numbers for the 551X0 STS elements not supported by the survey data. The subparagraph numbers correspond to those found in the STS section of the training extract (PRTMOD 23).

4a	13b(1)
4b	13b(1)
4c	13b(2)
4d	15b(1)
4e	15b(2)
7e	15b(3)
8d(6)	15c(1)
11d(3)(a)	15c(2)
11e(4)(c)	16a
13a(4)	

UNSUPPORTED AFSC 551X0 STS PROFICIENCY CODES

The following is a listing of the subparagraph numbers for the 551X0 STS elements with proficiency codes not supported by the survey data. The subparagraph numbers correspond to those found in the STS section of the training extract (PRTMOD 23).

7a	11c(3)
8d(3)	11d(6)
8d(4)	11d(11)
8d(5)	11e(4)(a)
9b(1)	13a(3)
9b(2)	13a(6)
10c	

APPENDIX C
551X1 STS SUBPARAGRAPHS REQUIRING REVIEW

UNSUPPORTED AFSC 551X1 STS SUBPARAGRAPHS

The following is a listing of the subparagraph numbers for the 551X1 STS elements not supported by the survey data. The subparagraph numbers correspond to those found in the STS section of the training extract (PRTMOD 24).

3a	7f	13e(3)	20b(4)
3b	9d	18b(1)	21a
3c	13b(2)	18b(2)	21c
3d	13b(3)	18c(1)	21d
3e	13c	18c(2)	21e(1)
4	13d(1)	18d	21e(2)(a)
5c(1)	13d(2)	18e(1)	21e(2)(b)
6d	13d(4)	18e(2)	21d
6f(5)	13d(5)	19c	22e(2)
7d	13d(6)	20b(2)	

UNSUPPORTED AFSC 551X1 STS PROFICIENCY CODES

The following is a listing of the subparagraph numbers for the 551X1 STS elements with proficiency codes not supported by the survey data. The subparagraph numbers correspond to those found in the STS section of the training extract (PRTMOD 23).

5c(2)	6i	11f	18a(2)
6f(3)	8b(2)	12b	18a(3)
6f(6)	8f	16c	18a(4)
6f(7)	11b	16d	22e(1)
6f(11)	11d	18a(1)	22d(5)
6f(12)			

APPENDIX D

551XX DRAFT STS SUBPARAGRAPHS REQUIRING REVIEW

UNSUPPORTED AFSC 551XX DRAFT STS SUBPARAGRAPHS

The following is a listing of the subparagraph numbers for the 55XX draft STS elements not supported by the survey data. The subparagraph numbers correspond to those found in the STS section of the training extract (PRTMOD 32).

3a	15c(1)	18c(3)
3c	15c(2)	18d
6e	15c(4)	19b(3)(b)1
7c(5)	15c(6)	19b(3)(b)3
8a	15d(3)	22a(2)(a)
9b(8)	15e(1)(a)	22a(2)(b)
10h(5)	15e(1)(c)	22a(2)(c)
10h(8)	17b(1)	22d(2)
12b(3)	18b(1)	22e(1)(b)
15b(2)	18b(2)	22e(1)(c)
15b(3)	18c(2)	23f(2)

UNSUPPORTED AFSC 551XX DRAFT STS PROFICIENCY CODES

The following is a listing of the subparagraph numbers for the 55XX draft STS elements with proficiency codes not supported by the survey data. The subparagraph numbers correspond to those found in the STS section of the training extract (PRTMOD 32).

7c(3)	8c	17b(3)
7c(10)	9a	17c(1)
7c(11)	10a(4)	17c(2)
7g(1)	10e(1)	17c(3)
7g(2)	10g(1)	20a
7g(3)	10g(2)	20c

APPENDIX E

55130 POI BLOCKS OR UNITS
OF INSTRUCTION REQUIRING REVIEW

The following is a listing of the subparagraph numbers for the 55130 POI Blocks or unit of instruction that are not supported by the survey data. The subparagraph numbers correspond to those found in the POI section of the training extract (PRTMOD 25).

<u>Paragraph Number</u>	<u>Number of Hours</u>
I 4e	1.25
I 5c	.50
II 1k	2.00
II 1n	3.25
II 2l	1.75
III 4c	.75
III 4d	.75
III 5a	1.00

APPENDIX F

55131 POI BLOCKS OR UNITS OF INSTRUCTION
REQUIRING REVIEW

The following is a listing of the subparagraph numbers for the 55131 POI Blocks or unit of instruction that are not supported by the survey data. The subparagraph numbers correspond to those found in the POI section of the training extract (PRTMOD 26).

<u>Paragraph Number</u>	<u>Number of Hours</u>
II 1d	2.00
II 4d	8.00
IV 3d(2)(a)	1.50
V 1b	1.00
V 2a	2.00
V 2d	2.00

APPENDIX G

CURRENT CAREER LADDER TRAINING
FOR DAFSC 551X0 AND 551X1 PERSONNEL

TECHNICAL COURSES

The following are descriptions of technical courses available to personnel holding AFSCs 551X0 and 551X1.

J3ABR55130-001, Pavements Maintenance Specialist, PDS YQM, 4 weeks, 1 day. Provides construction, maintenance, and repair of rigid and flexible pavements; subgrade stabilization and base course compaction; rapid runway repair; aircraft revetments; operation and inspection of power tools and equipment; and operation and inspection of dump trucks and front-end loaders.

J3AAR55170-000, Pavements Maintenance Technician, PDS YT7, 2 weeks, 3 days. Rigid pavement construction, maintenance and repair; subgrade stabilization and base course compaction, computing quantities base course, concrete and asphalt materials; flexible pavement construction, inspection, maintenance and repair; prefabrication surface mats and aircraft revetments.

J5ABA55131-001, Construction Equipment Operator, PDS 4GP, 11 weeks. Provides operating principles and techniques, practical field operations, and operator maintenance to include: dump trucks, graders, dozers, forklift, front-end loaders, compactors, street sweeper, and industrial tractors with backhoe attachments.

AFESC 551X2, Heavy Equipment Warskills Training, PDS 9H7, 1 week. Provides "hands-on" proficiency training on four-key pieces of rapid runway repair (RRR) heavy equipment at Regional Equipment Operator Training Sites (REOTS): excavator, crawler tractor 4-yard loader, 8-yard dump truck, and the motor grader.

TECHNICAL TRAINING

The following is a listing of technical training available to personnel holding AFSCs 551X0 and 551X1.

Base Recovery After Attack Training School (BRAATS),
Eglin AFB FL
Advanced Pavements Maintenance Course, Ramstein AB GE
HARVEST BARE Equipment Operations Course, Holloman AFB NM
Tractor Trailer Course (SAC)
Snow Removal Proficiency Training School/Snow Removal and
Ice Control Equipment
Airlift Load Planners Course (MAC)
J4AZT6000-000, Airlift Hazardous Materials Course

U. S. ARMY CORPS OF ENGINEER TRAINING

The following is a listing of technical Army Corps of Engineer training available to personnel holding AFSCs 551X0 and 551X1.

Pavement Construction and Inspection (Corps of Engineers)
Pavement Inspection Procedures (Vicksburg Waterways Experimental Station)
Pavement Construction and Design (Waterways, Mississippi)
Special Training
J4AZT6000-000, Airlift Hazardous Materials Course
TEMCO Sweeper Service School, Waco TX

RED HORSE TRAINING

The following is a listing of Red Horse training available to personnel holding AFSCs 551X0 and 551X1.

Water Well Drilling, Hurlburt FLD FL
Demolition School (Explosives), Red Horse Demolition School, Nellis AFB NV
Explosive Ordnance Disposal Training Demolition Course, Nellis AFB NV; Tyndall AFB FL
Base Denial Training
819th Quarry and Demolition School
Crushing and Screening Operations Course (C-3)