DTIC

UNITED STATES AIR FORCE

OCCUPATIONAL SURVEY REPORT

LIQUID FUEL SYSTEMS MAINTENANCE

AFSC 3E4X2

OSSN 2263

OCTOBER 1997

OCCUPATIONAL ANALYSIS PROGRAM
AIR FORCE OCCUPATIONAL MEASUREMENT SQUADRON
AIR EDUCATION AND TRAINING COMMAND
1550 5TH STREET EAST
RANDOLPH AFB, TEXAS 78150-4449

DISTRIBUTION FOR AFSC 3E4X2 OSR

	OSR	ANL EXT	TNG EXT	JOB INV
AFOMS/OMDQ	1			
AFOMS/OMYXL	10		5	10
AL/HRMM	2			
ARMY OCCUPATIONAL SURVEY BRANCH	1			
CCAF/AYX	1			
DEFENSE TECHNICAL INFORMATION CENTER	2			
HQ ACC/DPTTF	3		3	
HQ AETC/DPPEE	3		3	
HQ AFCESA/CEOT (139 BARNES DRIVE, STE 1, TYNDALL AFB FL 32403-5319)	1		1	
HQ AFCESA/DMG	1		1	
HQ AFMC/DPUE	3		3	
HQ AFPC/DPAAD1	1			
HQ AFPC/DPPAPC	1			
HQ AFSPC/DPAE	3		3	
HQ AMC/DPPET	1			
HQ PACAF/DPAET	3		3	
HQ USAFE/DPATTJ	3		3	
HQ USMC/STANDARDS BRANCH	1			
NAVMAC	1			
366 TRS/TRR (727 MISSILE ROAD, ROOM 70, SHEPPARD AFB TX 76311-2254, ATTENTION: MR. RICHARD MAURER)	3	1	1	1
782 TRG/TTS (826 G AVENUE, STE 4, SHEPPARD AFB TX 76311-2867)	1		1	

TABLE OF CONTENTS

THIS PAGE INTENTIONALLY LEFT BLANK

TABLE OF CONTENTS
(Tables, Figures, Appendices)

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

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

THIS PAGE INTENTIONALLY LEFT BLANK

PREFACE

This report presents the results of an Air Force Occupational Survey of the Liquid Fuel Systems Maintenance (LFM) career ladder, Air Force Specialty Code (AFSC) 3E4X2. Authority for conducting occupational surveys is contained in AFI 36-2623. Copies of this report and pertinent computer printouts are distributed to the Air Force Functional Manager, the operations training location, all major using commands, and other interested operations and training officials.

The survey instrument was developed by First Lieutenant Christopher J. Hays, Inventory Development Specialist, with computer programming support furnished by Mrs. Rebecca R. Hernandez. Mr. Richard G. Ramos provided administrative support. First Lieutenant Teri A. Heitmeyer, Occupational Analyst, analyzed the data and wrote the final report. This report has been reviewed and approved by Lieutenant Colonel Roger W. Barnes, Chief, Airman Analysis Section, Occupational Analysis Flight, Air Force Occupational Measurement Squadron (AFOMS).

Additional copies of this report can be obtained by writing to AFOMS/OMYXI, 1550 5th Street East, Randolph AFB TX 78150-4449, or by calling DSN 487-5543. For information on the Air Force occupational survey process or other on-going projects, visit our web site at http://www.omsq.af.mil.

GEORGE KAILIWAI III, Lt Col, USAF
Commander
Air Force Occupational Measurement Sq

JOSEPH S. TARTELL
Chief, Occupational Analysis Flight
Air Force Occupational Measurement Sq

THIS PAGE INTENTIONALLY LEFT BLANK

SUMMARY OF RESULTS

1. **Survey Coverage**: The LFM career ladder was surveyed to evaluate changes in the AFSC 3E4X2 career ladder and obtain current task and equipment data for use in evaluating current training programs. Results are based on responses from 309 members worldwide (51 percent of the assigned population). Respondents include Active Duty, Air National Guard (ANG) and Air Force Reserve (AFRC) members. All major commands were proportionally represented in the survey sample.

2. **Specialty Jobs**: Structure analysis identified three clusters: Mobility Contingency, General Maintenance and Supervision. The Mobility Contingency Cluster is composed primarily of ANG and AFRC members. The core cluster of the career ladder is in General Maintenance.

3. **Career Ladder Progression**: Nearly all 3-skill level personnel perform only technical duties. Although 5-skill level jobs are technically oriented, they also have a minimal supervisory aspect. Seven-skill level members devote most of their time to supervisory/management and training duties. ANG and AFRC personnel tend to perform more technical tasks at the higher skill levels due to limited personnel in the jobs.

4. **Training Analysis**: Analysis of the Specialty Training Standard (STS) identified several areas that were not supported by the data, and several tasks with a high percent of members performing which were not referenced in the STS. The Plan of Instruction (POI) had five paragraphs which were not supported by the data, as well as having many technical tasks performed by greater than 30 percent of first-job or first-enlistment members not yet referenced to the POI.

5. **Job Satisfaction Analysis**: The majority of job satisfaction measures for the LFM sample were high. Group incumbents are about as satisfied as the previous sample in 1992, as well as a comparative sample. Generally, job satisfaction remains good within the career ladder.

6. **Implications**: The career ladder structure is quite similar to that found in the previous OSR. Career ladder progression is normal, showing a movement away from the technical tasks common at the lower skill levels, as incumbents move toward the 7-skill level. Training documents are somewhat supported, although several areas need review to justify either continued inclusion or exclusion. For this survey, ANG and AFRC AFSC 3E4X2 personnel were included in the survey process and the analysis of the career ladder. While active duty personnel dominate the General Maintenance and Supervision Cluster, the ANG and AFRC appear to be essential in preparing for mobility and contingency activities.

THIS PAGE INTENTIONALLY LEFT BLANK

OCCUPATIONAL SURVEY REPORT (OSR)
LIQUID FUEL SYSTEMS MAINTENANCE (LFM) CAREER LADDER
(AFSC 3E4X2)

INTRODUCTION

This is a report of an occupational survey of the Liquid Fuel Systems Maintenance (LFM) (AFSC 3E4X2) career ladder conducted by the Occupational Analysis Flight of the Air Force Occupational Measurement Squadron (AFOMS). The survey was performed as part of the production cycle to maintain currency of pertinent career ladder training documents. Data collected through this OSR will be utilized by training development personnel to evaluate the effectiveness of training within AFSC 3E4X2. The career ladder was last surveyed as AFSC 545X1 (Converted to AFSC 3E4X2 effective 31 October 1993), and the subsequent OSR is dated October 1992.

Background

The AFMAN 36-2108 *Specialty Descriptions* for this career ladder state that 3-skill level members are responsible for installing, repairing and maintaining liquid fuel storage, distribution and dispensing systems. In addition, 3-skill level members manage and modify liquid fuel systems and components, troubleshoot malfunctions, inspect conditions of grounding conductors and accumulation of explosive vapors in enclosed fuel systems, and perform recurring maintenance and seasonal overhaul on systems and components.

In addition to 3-skill level responsibilities, 5-skill level members must have experience in functions such as installation, maintenance, and repair of liquid fuel systems and components. All 7-skill level members are also responsible for performing or supervising functions such as installation, maintenance, and repair of liquid fuel systems and components.

All new personnel attend the electronic principles course conducted at Lackland AFB TX. In addition, initial 3-skill level training for AFSC 3E4X2 personnel is currently provided through an 8-week course (J3ABR3E432-003) at Sheppard AFB TX. The LFM Apprentice course provides personnel with the knowledge and skills required to perform inspection and maintenance of liquid conventional fuel storage and dispensing systems. Entry into the career ladder requires an Armed Forces Vocational Aptitude Battery minimum score of 51 Mechanical, and a strength factor of G (40 lbs).

SURVEY METHODOLOGY

Inventory Development

The data collection instrument for this occupational survey was USAF Job Inventory (JI), AFPT 90-3E4-096, dated September 1996. A tentative task list was prepared after reviewing pertinent career ladder publications and directives, and tasks from previous applicable OSRs. The preliminary task list was refined and validated through personal interviews with 20 subject-matter experts from 4 operational bases and 1 training unit which were interviewed at the following locations:

BASE	ORGANIZATION
Sheppard AFB TX	366th Technical Training Squadron
Nellis AFB NV	99th Civil Engineering Squadron
McChord AFB WA	62d Civil Engineering Squadron
Kelly AFB TX	76th Civil Engineering Squadron
Little Rock AFB AR	314th Civil Engineering Squadron

Other people contacted included Air Force Personnel Center (AFPC) classification personnel, major command (MAJCOM) functional managers, and the Air Force Career Field Manager.

The resulting JI contained a comprehensive listing of 534 tasks grouped under 18 duty titles, with a background section requesting such information as grade, job title, time in present job, time in service, job satisfaction, functional area of assignment, types of automatic fuel valves, fuel meters, leak detection systems, fuel pumps maintained, and types of equipment and forms used in the incumbent's job.

Survey Administration

From October 1996 to February 1997, base training offices at operational bases worldwide administered the inventory to 576 (DAFSC 3E4X2) personnel holding a 3-, 5-, or 7-skill level. Members eligible for the survey consisted of the total assigned population, excluding the following: (1) hospitalized personnel; (2) personnel in transition for a permanent change of station; (3) personnel retiring within the time the inventories were administered to the field; and (4) personnel in their jobs less than 6 weeks. Members of the Air National Guard (ANG) and Air Force Reserves (AFRC) were also surveyed. Participants were selected from a computer-generated mailing list obtained from AFPC.

Each individual who completed the inventory first filled in an identification and biographical information section and then checked each task performed in his or her current job. After checking tasks performed, each individual rated the tasks checked on a 9-point scale showing relative time spent on that task, compared to other tasks performed. The ratings ranged from 1 (very small amount time spent) to 9 (very large amount time spent).

Data Processing Approach

Using the ratings provided by the respondents, relative time spent for each task was computed by summing all the ratings given by the respondent, dividing each rating by that sum, and multiplying the result by 100. Assuming that all of the incumbent's ratings account for 100 percent of that member's job time, this procedure provides a basis for comparing job descriptions of respondents in terms of percent members performing tasks and average percentage of time spent on tasks.

Survey Sample

Personnel were selected to participate in this study so as to ensure an accurate representation across MAJCOMs and paygrades. Table 1 reflects the percentage of assigned and sampled individuals in AFSC 3E4X2. The 309 respondents in the final sample represent 51 percent of all eligible AFSC 3E4X2 personnel. The data are displayed showing the assigned and sampled populations. Table 2 reflects the percentage distribution by paygrade groups. As shown by both tables, the survey sample closely reflects the overall population of the career ladder.

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, selected senior AFSC 3E4X2 personnel (generally E-6 or E-7 technicians) also completed a second booklet for either training emphasis (TE) or task difficulty (TD). The TE and TD booklets were processed separately from the JIs. The information gained from these task factor data is used in various analyses and is a valuable part of the training decision process.

Training Emphasis (TE). TE is a rating of the amount of emphasis that should be placed on tasks in entry-level training. The 15 senior NCOs who completed the TE booklets were asked to select tasks they felt required some sort of structured training for entry-level personnel, and then indicate how much training emphasis these tasks should receive, from 1 (extremely low emphasis) to 9 (extremely high emphasis). Structured training is defined as training provided by resident technical schools, field training detachments, mobile training teams, formal on-the-job

TABLE 1

MAJCOM REPRESENTATION OF AFSC 3E4X2 SAMPLE

MAJOR COMMAND	PERCENT OF ASSIGNED*	PERCENT OF SAMPLE
AG	35	28
AFRC	17	11
ACC	12	15
PACAF	10	12
AMC	8	8
AFMC	7	11
USAFE	5	6
AETC	4	5
AFSPC	2	4

	AFSC 3E4X2 ACTIVE DUTY	AFSC 3E4X2 GUARD	AFSC 3E4X2 RESERVE
TOTAL ASSIGNED	295	208	101
TOTAL ELIGIBLE**	273	204	99
TOTAL IN SAMPLE	188	87	34
PERCENT OF ASSIGNED IN SAMPLE	64%	42%	34%
PERCENT OF ELIGIBLE IN SAMPLE	69%	43%	34%

* Assigned strength as of October 1996

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

TABLE 2

PAYGRADE DISTRIBUTION OF SURVEY SAMPLE

PAYGRADE	AFSC 3E4X2 (AD) PERCENT OF ASSIGNED* (N=295)	AFSC 3E4X2 (AD) PERCENT OF SAMPLE (N=188)	AFSC 3E4X2 (ANG) PERCENT OF ASSIGNED* (N=208)	AFSC 3E4X2 (ANG) PERCENT OF SAMPLE (N=87)	AFSC 3E4X2 (AFRC) PERCENT OF ASSIGNED* (N=101)	AFSC 3E4X2 (AFRC) PERCENT OF SAMPLE (N=34)
E-1 to E-3	31	32	5	2	3	3
E-4	30	30	12	10	15	17
E-5	21	20	36	43	25	18
E-6	10	10	37	35	39	44
E-7	7	7	10	10	18	18
E-8	1	1	0	0	0	0

* Assigned strength as of October 1996

training (OJT), or any other organized training method. There was acceptable agreement among the 15 raters. The average TE rating was 3.62, with a standard deviation of 1.73. Any task with a TE rating of 5.35 or above is considered to have a high TE.

Task Difficulty (TD). TD is an estimate of the amount of time needed to learn how to do each task satisfactorily. The 15 senior NCOs who completed TD booklets were asked to rate the difficulty of each task using a 9-point scale (extremely low to extremely high). Interrater reliability was acceptable. Ratings were standardized so tasks have an average difficulty of 5.00 and a standard deviation of 1.00. Any task with a TD rating of 6.00 or above is considered to be difficult to learn.

When used in conjunction with the primary criterion of percent members performing, TD and TE ratings can provide insight into first-enlistment personnel training requirements. Such insights may suggest a need for lengthening or shortening portions of instruction in support of first-enlistment jobs.

SPECIALTY JOBS
(Career Ladder Structure)

Each Air Force occupational analysis begins with an examination of the career ladder structure. The structure of jobs within the LFM career ladder was examined on the basis of similarity of tasks performed and the percent of time spent ratings provided by job incumbents.

Each individual in the sample performs a set of tasks called a *Job*. A hierarchical grouping program, which is a basic part of the Comprehensive Occupational Data Analysis Program (CODAP) system, creates an individual job description for each respondent (all the tasks performed by that individual and the relative amount of time spent on those tasks). It then compares each job description to every other job description in terms of tasks performed and the relative amount of time spent on each task in the JI. The automated program locates the two job descriptions with the most similar tasks and percent time ratings and combines them to form a composite job description. In successive stages, the program adds new members to the initial group or forms new groups based on the similarity of tasks performed and similar time ratings in the individual job descriptions.

When there is a substantial degree of similarity between jobs, they are grouped together and identified as a *Cluster*. The job structure resulting from this grouping process (the various jobs and clusters within the career ladder) can be used to evaluate the accuracy of career ladder documents (Career ladder Education and Training Plans, AFMAN 36-2108 *Specialty Description*, and Specialty Training Standards (STS), and to gain a better understanding of current utilization patterns.

Overview of Specialty Jobs

Based on the analysis of tasks performed and the amount of time spent performing each task, three clusters were identified within the surveyed career ladder. Figure 1 illustrates the jobs performed by AFSC 3E4X2 personnel. Active Duty, AFRC, and ANG members can be found in each cluster. All basic duties revolve around the maintenance and repair of fuel systems and their components. Variations existed in all of the identified clusters, and they are defined as clearly identifiable functions within a cluster that are not broken out separately. These variations are listed as jobs in their respective cluster.

A listing of these clusters is provided below. The stage (STG) number shown beside each title references computer-printed information; the letter "N" represents the number of personnel in each group.

I. MOBILITY AND CONTINGENCY CLUSTER (STG35, N=33)

I. GENERAL MAINTENANCE CLUSTER (STG14, N=221)

III. SUPERVISION CLUSTER (STG26, N=34)

The respondents forming these groups account for 94 percent of the survey sample. The remaining 6 percent were performing tasks that did not group with any of the other defined jobs. Some of the job titles given by respondents who did not group which were representative of these personnel include: Utilities Instructor, Shipping Clerk, Safety Manager, and Equipment Monitor.

Group Descriptions

The following paragraphs contain brief descriptions of the three clusters identified through the career ladder structure analysis. Appendix A lists representative tasks performed by identified clusters. Table 3 displays time spent on duties by career ladder jobs, while Table 4 provides Active Duty, ANG and AFRC demographic information for each cluster discussed within this report.

When describing Time In Present Job, Time In Career Ladder, and Total Active Federal Military Service (TAFMS) in the group descriptions below, data for AFRC and ANG personnel are not reflected due to the manner in which these personnel accrue their time (different from Active Duty personnel).

Another way to illustrate these jobs is to summarize tasks performed into groups of tasks (task modules (TMs)). This summary of tasks allows for a very concise display of where job incumbents spend most of their time and develops a comprehensive overview of each job. Each job/cluster description contains a display of related TMs. This display shows the number of tasks

AFSC 3E4X2 IDENTIFIED JOB STRUCTURE AND PERCENTAGES OF TOTAL SURVEY SAMPLE

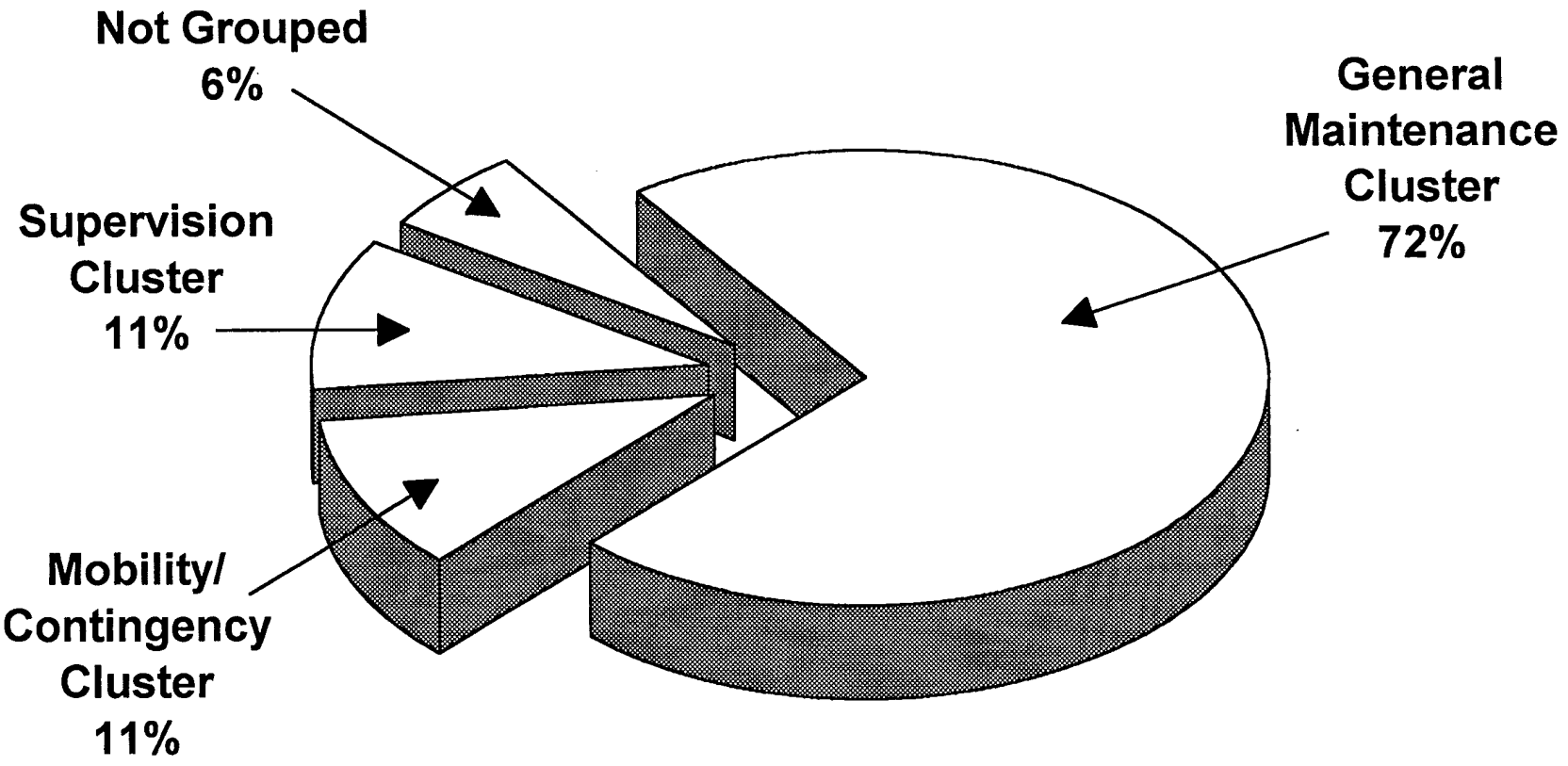

FIGURE 1

TABLE 3

AVERAGE PERCENT TIME SPENT ON DUTIES BY CAREER LADDER JOBS

DUTIES	MOBILITY & CONT CLUSTER (N=33)	GENERAL MAINT CLUSTER (N=221)	SUPERVISION CLUSTER (N=34)
A PERFORMING MANAGEMENT AND SUPERVISORY ACTIVITIES	9	8	45
B PERFORMING TRAINING ACTIVITIES	5	2	14
C PERFORMING GENERAL ADMINISTRATIVE AND TECHNICAL ORDER SYSTEM ACTIVITIES	*	*	3
D PERFORMING GENERAL SUPPLY AND EQUIPMENT ACTIVITIES	5	4	7
E PERFORMING GENERAL MAINTENANCE ACTIVITIES	10	17	6
F CLEANING OR INSPECTING FUEL STORAGE TANKS	*	9	4
G PERFORMING ENVIRONMENTAL OR SAFETY ACTIVITIES	1	4	3
H MAINTAINING FUEL SYSTEM COMPONENTS	*	9	1
I INSTALLING OR MAINTAINING AUTOMATIC VALVES AND COMPONENTS	*	11	1
J INSTALLING OR MAINTAINING MANUAL VALVES AND COMPONENTS	*	3	*
K INSTALLING OR MAINTAINING FUEL STORAGE PUMPS	*	3	*
L INSTALLING OR MAINTAINING PIPELINES AND PITS	*	4	*
M INSTALLING OR MAINTAINING SERVICE STATION PUMP ASSEMBLIES	*	6	*
N INSTALLING OR MAINTAINING FUEL LOADING OR OFF-LOADING EQUIPMENT	*	4	*
O PERFORMING FUEL SYSTEMS DEACTIVATION OR DECOMMISSIONING ACTIVITIES	*	2	*
P INSTALLING OR MAINTAINING PORTABLE OR AIR-TRANSPORTABLE FUELING SYSTEMS	*	*	*
Q PERFORMING ELECTRICAL ACTIVITIES	*	3	*
R PERFORMING MOBILITY AND CONTINGENCY ACTIVITIES	65	8	12

* Indicates less than 1 percent

NOTE: Columns do not total 100 percent due to rounding

TABLE 4

SELECTED BACKGROUND DATA FOR CAREER LADDER JOBS

	MOBILITY & CONT CLUSTER (STG35)	GENERAL MAINT CLUSTER (STG14)	SUPV CLUSTER (STG 26
NUMBER IN GROUP	33	221	34
PERCENT OF SAMPLE	11%	72%	11%
PERCENT IN CONUS	100%	76%	71%
DAFSC DISTRIBUTION:			
3E432	3%	31%	0%
3E452	45%	47%	15%
3E472	52%	22%	85%
COMPONENT STATUS:			
ACTIVE DUTY	3%	73%	60%
GUARD	55%	23%	22%
RESERVE	42%	4%	18%
PREDOMINANT PAYGRADE(S)	E-6	E-4/E-5	E-6/E-7
AVERAGE MONTHS IN CAREER FIELD (ACTIVE DUTY)	0	74	177
AVERAGE MONTHS IN SERVICE (ACTIVE DUTY)	50	77	177
PERCENT IN FIRST ENLISTMENT (ACTIVE DUTY)	0%	28%	0%
PERCENT SUPERVISING	30%	36%	96%
AVERAGE NUMBER OF TASKS PERFORMED	29	184	93

included in a module, the average percent time spent on that module, and an average percent of members performing the particular TM. These modules were identified through CODAP coperformance clustering, which calculates the probability that members who perform one task will also perform a second task or group of related tasks. Representative TMs are listed as part of the job description. A complete list of TMs with respective tasks is presented in Appendix B.

I. MOBILITY AND CONTINGENCY CLUSTER (STG35). The 33 members of this cluster represent 11 percent of the total survey sample. All but one of these members are ANG and AFRC personnel. Members of this group spend 65 percent of their time (more than any other job group) performing tasks pertaining to mobility and contingency activities, and another 10 percent of their time on general maintenance activities on liquid fuel systems. On average, Mobility and Contingency Cluster members perform 29 tasks.

Representative tasks for this job include:

- don or doff chemical warfare personal protective clothing
- inspect chemical warfare personal protective clothing
- inspect mobility bags or kits
- erect tents
- clean chemical warfare personal protective clothing
- tear down, inspect, clean, and reassemble weapons, such as M-16 rifles
- perform chemical warfare agent decontamination procedures
- identify chemical warfare agents

Respondents holding this job (1 active duty, 18 ANG, and 14 AFRC) have a predominant paygrade of E-6 (Table 4). Fifteen members (45 percent) of this group indicate having a 3E452 DAFSC, while another 17 (52 percent) hold the 3E472 DAFSC.

This cluster contains two jobs. The first, the Bulk Storage Maintenance Job, contains six members (five ANG and one Active Duty) whose primary functional area is within bulk storage maintenance. The second job contains 52 percent AFRC and 48 percent ANG members, whose primary functional areas vary between technical training and mobility and contingency activities.

Representative TMs for this cluster include:

TM	Module Title	No. of Tasks	Percent Time Spent Sum	Avg. Percent Members Perf.
0001	Manage mobility/contingency equipment	10	47	84
0003	Perform general maintenance activities	25	10	18
0002	Perform security activities	4	10	51
0030	Participate in or transport equipment for deployment	2	4	48

II. GENERAL MAINTENANCE CLUSTER (STG14). The 221 members of this cluster represent 72 percent of the total survey sample. As reflected in Table 3, 17 percent of the incumbents' job time is spent performing tasks pertaining to general maintenance activities, while another 11 percent of time is spent on installing or maintaining automatic valves and components. Nine percent of their time is spent on cleaning or inspecting fuel storage tanks and another 9 percent of their time is spent maintaining fuel system components.

Representative tasks for this cluster include:

- install or remove filter-separator elements
- operationally inspect filter separators
- cut gasket materials
- inspect grounding cables, rods, or bonding devices
- thread pipes
- operationally inspect automatic pumphouse control valves
- don or doff chemical warfare personal protective clothing
- test vapor levels in enclosed areas

Incumbents have a predominant paygrade of E-4 or E-5 and Active Duty members average 6 years TAFMS. Of the three clusters in this career ladder, the members of this cluster perform the highest average number of tasks (184).

This cluster contains three jobs. The first, the Mobility and Contingency Job, contains primarily ANG and AFRC members who also perform mobility and contingency activities. This is indicated by tasks being performed that relate to chemical warfare agents.

The second job is the Fuel System Components Job. The five active duty members of this job are distinguished from other personnel in this cluster by their performance of tasks relating to fuel gauges, registers and indicators. They perform an average of 86 tasks.

The Automatic Valves and Components Job contains 165 members from all Active Duty, ANG and AFRC components. Personnel in this job perform such duties as cleaning or inspecting fuel storage tanks, installing or maintaining automatic valves and components, and maintaining fuel system components. Members of this job perform an average of 216 tasks.

Representative TMs for this cluster include:

TM	Module Title	No. of Tasks	Percent Time Spent Sum	Avg. Percent Members Perf.
0003	Perform general maintenance activities	25	15	78
0001	Manage mobility/contingency equipment	10	5	69
0006	Maintain service station pumps	9	3	58
0017	Maintain fuel storage tank protective clothing and equipment	8	3	62

III. SUPERVISION CLUSTER (STG26). The 34 personnel (20 Active Duty, 8 ANG, and 6 AFRC) in this cluster perform traditional supervisory duties. In addition, they perform some training and general administrative and technical order activities.

Representative tasks for this cluster include:

- supervise military personnel
- determine or establish work assignments or priorities
- assign personnel to work areas or duty positions
- inspect personnel for compliance with military standards
- conduct self-inspections or self-assessments
- conduct general meetings, such as staff meetings, briefings, conferences, or workshops
- maintain training records or files
- evaluate progress of trainees

Active duty incumbents have a predominant paygrade of E-6 and average 15 years TAFMS. All but 5 of the 34 members of the Supervision Cluster have a 7-skill level.

This cluster contains two jobs. The first job is composed of nine ANG and AFRC members who supervise and train mobility and contingency activities. The second job consists of 29 (25 Active Duty, 2 ANG and 2 AFRC) personnel who primarily supervise general maintenance activities.

Representative TMs for this cluster include:

TM	Module Title	No. of Tasks	Percent Time Spent Sum	Avg. Percent Members Perf.
0026	Establish and evaluate personnel standards	11	11	75
0001	Manage mobility/contingency equipment	10	9	56
0025	Directly supervise trainee/training	6	8	80
0024	Establish work assignments/procedures	6	7	76
0049	Coordinate equipment maintenance or needs	9	5	46

Comparison to Previous Survey

Results of the specialty job analysis were compared to those of the last LFM OSR published in 1992. With some variance in the job titles between the two studies, the tasks that personnel performed in the previous OSR are generally found in the current study. Table 5 shows the comparison of jobs identified in the present study to those identified in 1992. The ANG and AFRC were not surveyed when the last OSR was written. The primary change was the addition of mobility and contingency activities and the supervision of mobility and contingency activities performed primarily by the ANG and AFRC. The basic career ladder structure was not greatly affected.

Summary

In summary, structure analysis reveals the LFM career ladder to be homogenous, with most members performing general maintenance activities. Three clusters were identified: Mobility and Contingency, General Maintenance, and Supervision. The ANG and AFRC perform in all areas of the career ladder, whereas Active Duty personnel are located in the general maintenance and supervisory areas.

ANALYSIS OF DAFSC GROUPS

An analysis of DAFSC groups, in conjunction with the analysis of the career ladder structure, is an important part of each occupational survey. The DAFSC analysis identifies differences in tasks performed at the various skill levels. This information may then be used to evaluate how well career ladder documents, such as AFMAN 36-2108 *Specialty Descriptions* and the STS, reflect what career ladder personnel are actually doing in the field.

The distribution of skill-level groups across the specialty jobs are displayed in Table 6, while Table 7 offers another perspective by displaying the relative percent time spent on each duty across the 3-skill level members. Tables 8 and 9 display the relative percent time spent on duties

TABLE 5

COMPARISON OF JOB GROUPS IN CURRENT STUDY
TO PREVIOUS STUDY

1997 STUDY (AFSC 3E4X2) (N=309)	1992 STUDY (AFSC 545X1) (N=226)
GENERAL MAINTENANCE	GENERAL MAINTENANCE
NO SIMILAR GROUP IDENTIFIED	APPRENTICE
MOBILITY AND CONTINGENCY	*NO SIMILAR GROUP IDENTIFIED*
SUPERVISION	SHOP FOREMAN

TABLE 6

DISTRIBUTION OF SKILL-LEVEL MEMBERS ACROSS SPECIALTY JOBS
(PERCENT RESPONDING)

JOB	DAFSC 3E432	DAFSC 3E452				DAFSC 3E472			
	TOTAL SAMPLE (N=73)	TOTAL SAMPLE (N=136)	AD (N=82)	ANG (N=36)	RES (N=18)	TOTAL SAMPLE (N=100)	AD (N=33)	ANG (N=51)	RES (N=16)
I. MOBILITY AND CONTINGENCY CLUSTER	1	11	0	22	39	17	0	20	44
II. GENERAL MAINTENANCE CLUSTER	95	76	91	61	39	48	48	59	13
III. SUPERVISION CLUSTER	0	4	5	0	6	29	48	16	31
NOT GROUPED	4	9	4	17	16	6	4	5	12

TABLE 7

RELATIVE PERCENT OF TIME SPENT ON DUTIES
BY MEMBERS OF 3-SKILL LEVEL GROUPS

DUTIES		TOTAL 3-SKILL LEVEL (N=73)
A	PERFORMING MANAGEMENT AND SUPERVISORY ACTIVITIES	3
B	PERFORMING TRAINING ACTIVITIES	*
C	PERFORMING GENERAL ADMINISTRATIVE AND TECHNICAL ORDER SYSTEM ACTIVITIES	*
D	PERFORMING GENERAL SUPPLY AND EQUIPMENT ACTIVITIES	3
E	PERFORMING GENERAL MAINTENANCE ACTIVITIES	21
F	CLEANING OR INSPECTING FUEL STORAGE TANKS	10
G	PERFORMING ENVIRONMENTAL OR SAFETY ACTIVITIES	5
H	MAINTAINING FUEL SYSTEM COMPONENTS	11
I	INSTALLING OR MAINTAINING AUTOMATIC VALVES AND COMPONENTS	13
J	INSTALLING OR MAINTAINING MANUAL VALVES AND COMPONENTS	4
K	INSTALLING OR MAINTAINING FUEL STORAGE PUMPS	4
L	INSTALLING OR MAINTAINING PIPELINES AND PITS	4
M	INSTALLING OR MAINTAINING SERVICE STATION PUMP ASSEMBLIES	6
N	INSTALLING OR MAINTAINING FUEL LOADING OR OFF-LOADING EQUIPMENT	4
O	PERFORMING FUEL SYSTEMS DEACTIVATION OR DECOMMISSIONING ACTIVITIES	2
P	INSTALLING OR MAINTAINING PORTABLE OR AIR-TRANSPORTABLE FUELING SYSTEMS	*
Q	PERFORMING ELECTRICAL ACTIVITIES	2
R	PERFORMING MOBILITY AND CONTINGENCY ACTIVITIES	6

* Denotes less than 1 percent

NOTE: Columns may not add exactly to 100 percent due to rounding

TABLE 8

RELATIVE PERCENT OF TIME SPENT ON DUTIES BY MEMBERS OF 5-SKILL LEVEL GROUPS

DUTIES	TOTAL 5-SKILL LEVEL (N=136)	ACTIVE 5-SKILL LEVEL (N=82)	GUARD 5-SKILL LEVEL (N=36)	RESERVE 5-SKILL LEVEL (N=18)
A PERFORMING MANAGEMENT AND SUPERVISORY ACTIVITIES	11	11	11	13
B PERFORMING TRAINING ACTIVITIES	3	4	2	4
C PERFORMING GENERAL ADMINISTRATIVE AND TECHNICAL ORDER SYSTEM ACTIVITIES	1	1	1	1
D PERFORMING GENERAL SUPPLY & EQUIPMENT ACTIVITIES	5	5	7	6
E PERFORMING GENERAL MAINTENANCE ACTIVITIES	16	14	20	17
F CLEANING OR INSPECTING FUEL STORAGE TANKS	7	10	5	3
G PERFORMING ENVIRONMENTAL OR SAFETY ACTIVITIES	4	5	3	2
H MAINTAINING FUEL SYSTEM COMPONENTS	7	9	6	2
I INSTALLING OR MAINTAINING AUTOMATIC VALVES AND COMPONENTS	8	11	3	2
J INSTALLING OR MAINTAINING MANUAL VALVES AND COMPONENTS	2	3	1	2
K INSTALLING OR MAINTAINING FUEL STORAGE PUMPS	2	3	1	1
L INSTALLING OR MAINTAINING PIPELINES AND PITS	3	4	2	*
M INSTALLING OR MAINTAINING SERVICE STATION PUMP ASSEMBLIES	5	7	3	1
N INSTALLING OR MAINTAINING FUEL LOADING OR OFF-LOADING EQUIPMENT	3	4	1	*
O PERFORMING FUEL SYSTEMS DEACTIVATION OR DECOMMISSIONING ACTIVITIES	1	1	*	*
P INSTALLING OR MAINTAINING PORTABLE OR AIR-TRANSPORTABLE FUELING SYSTEMS	*	*	0	*
Q PERFORMING ELECTRICAL ACTIVITIES	3	3	3	2
R PERFORMING MOBILITY AND CONTINGENCY ACTIVITIES	17	5	32	42

* Denotes less than 1 percent

NOTE: Columns may not add exactly to 100 percent due to rounding

TABLE 9

RELATIVE PERCENT OF TIME SPENT ON DUTIES BY MEMBERS OF 7-SKILL LEVEL GROUPS

DUTIES	TOTAL 7-SKILL LEVEL (N=100)	ACTIVE 7-SKILL LEVEL (N=33)	GUARD 7-SKILL LEVEL (N=51)	RESERVE 7-SKILL LEVEL (N=16)
A PERFORMING MANAGEMENT AND SUPERVISORY ACTIVITIES	24	35	17	25
B PERFORMING TRAINING ACTIVITIES	8	8	6	16
C PERFORMING GENERAL ADMINISTRATIVE AND TECHNICAL ORDER SYSTEM ACTIVITIES	2	3	1	2
D PERFORMING GENERAL SUPPLY AND EQUIPMENT ACTIVITIES	6	6	6	4
E PERFORMING GENERAL MAINTENANCE ACTIVITIES	11	6	15	7
F CLEANING OR INSPECTING FUEL STORAGE TANKS	6	9	5	3
G PERFORMING ENVIRONMENTAL OR SAFETY ACTIVITIES	3	4	3	2
H MAINTAINING FUEL SYSTEM COMPONENTS	5	5	6	1
I INSTALLING OR MAINTAINING AUTOMATIC VALVES AND COMPONENTS	5	7	5	*
J INSTALLING OR MAINTAINING MANUAL VALVES AND COMPONENTS	1	1	2	*
K INSTALLING OR MAINTAINING FUEL STORAGE PUMPS	1	2	2	*
L INSTALLING OR MAINTAINING PIPELINES AND PITS	2	2	2	*
M INSTALLING OR MAINTAINING SERVICE STATION PUMP ASSEMBLIES	2	2	2	*
N INSTALLING OR MAINTAINING FUEL LOADING OR OFF-LOADING EQUIPMENT	2	2	3	*
O PERFORMING FUEL SYSTEMS DEACTIVATION OR DECOMMISSIONING ACTIVITIES	*	*	*	*
P INSTALLING OR MAINTAINING PORTABLE OR AIR-TRANSPORTABLE FUELING SYSTEMS	*	*	*	*
Q PERFORMING ELECTRICAL ACTIVITIES	2	2	3	*
R PERFORMING MOBILITY AND CONTINGENCY ACTIVITIES	19	4	24	36

* Denotes less than 1 percent

NOTE: Columns may not add exactly to 100 percent due to rounding

across 5- and 7-skill level active duty, ANG and AFRC members respectively. A typical pattern of progression is present, with personnel spending more of their relative time on duties involving supervisory, managerial, and training tasks as they move upward toward the 7-skill level. It is also obvious that 7-skill level personnel are still involved with technical task performance, which will be pointed out in the specific skill-level group discussions below.

Skill-Level Descriptions

DAFSC 3E432. The 73 active duty 3-skill level airmen (representing 24 percent of the survey sample) perform an average of 153 tasks. Members spend 21 percent of their time performing general maintenance on liquid fuel systems, 13 percent maintaining automatic valves and components, and 11 percent maintaining fuel system components (Table 7). Table 10 displays representative tasks performed by the highest percentages of these airmen.

Representative TMs for this 3-skill level group include:

TM	Module Title	No. of Tasks	Percent Time Spent Sum	Avg. Percent Members Perf.
0003	Perform general maintenance activities	25	19	79
0001	Manage mobility/contingency equipment	10	4	62
0010	Operationally inspect automatic valves/controls	14	4	47
0006	Maintain service station pumps	9	4	55

These TMs indicate the scope of 3-skill level members' activities and provide emphasis and direction for training, or as a minimum, a starting point for resident training, with an emphasis on general LFM maintenance activities necessary to do the job.

DAFSC 3E452. The 136 5-skill level airmen (44 percent of the survey sample) perform an average of 155 tasks. Table 8 displays the relative percent of time spent on duties across Active Duty, ANG, and AFRC 5-skill level members. As with 3-skill level personnel, the largest percentages of 5-skill level members work in the General Maintenance Cluster (see Table 6). However, a greater percentage of members are performing mobility and contingency and supervisory activities. Table 8 shows only 5 percent of the active duty members' time is spent on mobility and contingency activities, while time spent by ANG and AFRC members is 32 and 42 percent respectively. Mobility and contingency duties are the most significant area of difference between components.

The job focus is shown in Tables 11, 12, 14, and 15, which list representative tasks performed by 5-skill level incumbents for the total sample, Active Duty, ANG, and AFRC. Table 13 shows those tasks best differentiating active duty 3- and 5-skill level personnel. Active Duty

TABLE 10

REPRESENTATIVE TASKS PERFORMED BY ALL ACTIVE DUTY DAFSC 3E432 PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=73)
E131	Clean work areas	100
E133	Cut gasket materials	100
E147	Install or remove filter-separator elements	96
E143	Inspect fuel hoses	96
E129	Clean handtools	95
G212	Clean up fuel spills with absorbent materials	90
E159	Thread pipes	89
E152	Operationally inspect filter separators	85
E134	Cut pipes with handtools	85
E132	Cut copper tubing	85
E140	Ground portable equipment	84
E144	Inspect grounding cables, rods, or bonding devices	82
E127	Bend copper tubing	82
E130	Clean strainer screens	82
E150	Operationally inspect automatic pumphouse control valves	79
E139	Flare copper tubing	79
R517	Erect tents	79
E158	Test vapor levels in enclosed areas	78
R520	Inspect mobility bags or kits	78
M416	Calibrate service station pump dispensing unit meters	75
E149	Install or remove strainer screens	74
M428	Install or remove service station pump hoses	73
R515	Don or doff chemical warfare personal protective clothing	71
O470	Drain filter separators	70
E146	Install or remove compression fittings, such as ferrules	70
R519	Inspect chemical warfare personal protective clothing	68
M439	Operationally inspect service station dispensers	68
H275	Join pipes with threaded fittings	67
E151	Operationally inspect automatic water drain valves	67
L412	Replace flange gaskets	64
H270	Install or remove pressure gauges	64
H274	Join pipes with bolted flanges	64
E141	Ground tank cars, trucks, or other vehicles	59

* Average Number of Tasks Performed -153

TABLE 11

REPRESENTATIVE TASKS PERFORMED BY ALL DAFSC 3E452 PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=136)
E131	Clean work areas	83
R532	Tear down, inspect, clean, and reassemble weapons, such as M-16 rifles	82
R517	Erect tents	81
R515	Don or doff chemical warfare personal protective clothing	79
E129	Clean handtools	79
R519	Inspect chemical warfare personal protective clothing	77
R520	Inspect mobility bags or kits	77
E143	Inspect fuel hoses	76
E159	Thread pipes	72
E147	Install or remove filter-separator elements	71
E144	Inspect grounding cables, rods, or bonding devices	71
E152	Operationally inspect filter separators	71
E127	Bend copper tubing	71
E132	Cut copper tubing	69
E134	Cut pipes with handtools	69
R513	Clean chemical warfare personal protective clothing	67
G212	Clean up fuel spills with absorbent materials	67
E140	Ground portable equipment	66
R518	Identify chemical warfare agents	62
R516	Erect camouflage nettings	61
R524	Participate in convoy exercises	57
R526	Perform chemical warfare agent decontamination procedures	56
R528	Perform rapid runway repairs	56
R525	Perform camp security	56
A6	Conduct safety inspections of equipment or facilities	55
D117	Inventory equipment, tools, parts, or supplies	55
D125	Pick up or deliver equipment, tools, parts, or supplies	53
A52	Participate in general meetings, such as staff meetings, briefings, conferences, or workshops, other than conducting	52
R531	Set up or tear down shelters	50
R527	Perform cover and concealment techniques for work party security	46

*Average Number of Tasks Performed - 155

TABLE 12

REPRESENTATIVE TASKS PERFORMED BY ACTIVE DUTY DAFSC 3E452 PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=82)
E131	Clean work areas	91
E129	Clean handtools	91
E143	Inspect fuel hoses	90
E133	Cut gasket materials	88
E147	Install or remove filter-separator elements	85
E152	Operationally inspect filter separators	85
E144	Inspect grounding cables, rods, or bonding devices	85
E140	Ground portable equipment	85
E127	Bend copper tubing	85
M416	Calibrate service station pump dispensing unit meters	85
E150	Operationally inspect automatic pumphouse control valves	83
E132	Cut copper tubing	83
E159	Thread pipes	83
M428	Install or remove service station pump hoses	83
R532	Tear down, inspect, clean, and reassemble weapons, such as M-16 rifles	82
M439	Operationally inspect service station dispensers	80
F172	Inspect air compressors or hoses	80
M444	Repair service station dispensers	80
G212	Clean up fuel spills with absorbent materials	79
R515	Don or doff chemical warfare personal protective clothing	78
E158	Test vapor levels in enclosed areas	77
R520	Inspect mobility bags or kits	77
R517	Erect tents	76
E139	Flare copper tubing	76
E142	Inspect dikes or dike basins	74
D126	Store equipment, tools, parts, or supplies	72
E146	Install or remove compression fittings, such as ferrules	72
D112	Evaluate serviceability of equipment, tools, parts, or supplies	70
D108	Coordinate maintenance of liquid fuel systems, other than tank cleaning, with appropriate agencies	68
E135	Cut pipes with power cutters	68
A65	Supervise military personnel	62

* Average Number of Tasks Performed - 214

TABLE 13

TASKS WHICH BEST DIFFERENTIATE BETWEEN
ACTIVE DUTY DAFSC 3E432 AND DAFSC 3E452 PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS		3E432 (N=73)	3E452 (N=82)	DIFFERENCE
G218	Coordinate confined-space entry permits with appropriate agencies	19	41	-22
A6	Conduct safety inspections of equipment or facilities	41	63	-22
M446	Repair service station hose retractors	29	51	-22
M414	Adjust automatic resets for counter heads	26	49	-23
N459	Operationally inspect emergency-stop switches	37	60	-23
M444	Repair service station dispensers	58	80	-23
H262	Inspect tank vents	30	54	-24
R528	Perform rapid runway repairs	30	54	-24
B84	Develop training programs, plans, or procedures	4	28	-24

TABLE 14

REPRESENTATIVE TASKS PERFORMED BY GUARD DAFSC 3E452 PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=36)
R517	Erect tents	94
R519	Inspect chemical warfare personal protective clothing	92
R532	Tear down, inspect, clean, and reassemble weapons, such as M-16 rifles	89
R515	Don or doff chemical warfare personal protective clothing	86
R520	Inspect mobility bags or kits	83
R518	Identify chemical warfare agents	78
R524	Participate in convoy exercises	75
R513	Clean chemical warfare personal protective clothing	72
E131	Clean work areas	69
R526	Perform chemical warfare agent decontamination procedures	64
E129	Clean handtools	64
R533	Transport mobility or contingency equipment to or from deployed locations	61
E147	Install or remove filter-separator elements	61
E152	Operationally inspect filter separators	61
R531	Set up or tear down shelters	58
R528	Perform rapid runway repairs	58
E143	Inspect fuel hoses	58
E144	Inspect grounding cables, rods, or bonding devices	58
R525	Perform camp security	56
A52	Participate in general meetings, such as staff meetings, briefings, conferences, or workshops, other than conducting	53
E159	Thread pipes	53
R516	Erect camouflage nettings	53
E132	Cut copper tubing	53
E142	Inspect dikes or dike basins	53
E130	Clean strainer screens	50
E134	Cut pipes with handtools	50
A6	Conduct safety inspections of equipment or facilities	47
H274	Join pipes with bolted flanges	42
A7	Conduct self-inspections or self-assessments	39
D125	Pick up or deliver equipment, tools, parts, or supplies	36

* Average Number of Tasks Performed - 70

TABLE 15

REPRESENTATIVE TASKS PERFORMED BY RESERVE DAFSC 3E452 PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=18)
R517	Erect tents	78
R519	Inspect chemical warfare personal protective clothing	78
E131	Clean work areas	72
R532	Tear down, inspect, clean, and reassemble weapons, such as M-16 rifles	72
R525	Perform camp security	72
R515	Don or doff chemical warfare personal protective clothing	67
R513	Clean chemical warfare personal protective clothing	67
R527	Perform cover and concealment techniques for work party security	67
R526	Perform chemical warfare agent decontamination procedures	67
R520	Inspect mobility bags or kits	67
R524	Participate in convoy exercises	67
R531	Set up or tear down shelters	67
R516	Erect camouflage nettings	61
E159	Thread pipes	61
R528	Perform rapid runway repairs	61
R518	Identify chemical warfare agents	61
R529	Perform site security	61
E129	Clean handtools	50
E134	Cut pipes with handtools	50
E127	Bend copper tubing	50
E143	Inspect fuel hoses	50
R533	Transport mobility or contingency equipment to or from deployed locations	44
G212	Clean up fuel spills with absorbent materials	44
A52	Participate in general meetings, such as staff meetings, briefings, conferences, or workshops, other than conducting	39
D117	Inventory equipment, tools, parts, or supplies	39
D126	Store equipment, tools, parts, or supplies	39
A6	Conduct safety inspections of equipment or facilities	33
D112	Evaluate serviceability of equipment, tools, parts, or supplies	33
B77	Conduct OJT	22

* Average Number of Tasks Performed - 57

members of both groups are performing essentially the same tasks, but the DAFSC 3E452 members show an added emphasis on coordinating and conducting inspections, performing technical tasks and some training activities.

Representative TMs for the Active Duty 5-skill level group include:

TM	Module Title	No. of Tasks	Percent Time Spent Sum	Avg. Percent Members Perf.
0003	Perform general maintenance activities	25	12	77
0006	Maintain service station pumps	9	4	76
0010	Operationally inspect automatic valves/controls	14	4	61
0020	Coordinate equipment maintenance or needs	9	3	57

These TMs indicate the scope of 5-skill level members' activities and provide emphasis and direction for training, or as a minimum, a starting point for upgrade training to Journeyman, with an emphasis on LFM activities and the larger scope of responsibilities (first three TMs are the same as for the 3-skill level group).

DAFSC 3E472. The NCOs in the 7-skill level group (32 percent of the survey sample) perform an average of 130 tasks. Thirty-two percent of their relative job time is spent on the usual supervisory, managerial, and training duties (Table 9). Active duty personnel spend 43 percent of their time on supervisory, managerial, and training activities. As with their 5-skill level counterparts, ANG and AFRC members spent the majority of their time performing mobility and contingency duties and an increased percent of time in management and supervisory activities. The mobility and contingency duties are the most significant area of difference between components. Tables 16-19 list the most common tasks performed by 7-skill level personnel.

While active duty tasks involve supervisory functions, ANG and AFRC members still perform many chemical warfare and fuel system maintenance tasks. Tables 20-23 show those tasks that best differentiate the 5- and 7-skill levels. As expected, key differences at the 7-skill level have a greater emphasis on supervision and administration. The primary difference is the AFRC and ANG spending a greater amount of time than any skill-level on mobility and contingency activities.

Representative TMs for the Active Duty 7-skill level group include:

TABLE 16

REPRESENTATIVE TASKS PERFORMED BY ALL DAFSC 3E472 PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=100)
R532	Tear down, inspect, clean, and reassemble weapons, such as M-16 rifles	76
R520	Inspect mobility bags or kits	75
R515	Don or doff chemical warfare personal protective clothing	75
R517	Erect tents	73
R519	Inspect chemical warfare personal protective clothing	72
A52	Participate in general meetings, such as staff meetings, briefings, conferences, or workshops, other than conducting	72
A65	Supervise military personnel	70
E131	Clean work areas	70
E129	Clean handtools	69
A6	Conduct safety inspections of equipment or facilities	68
R518	Identify chemical warfare agents	66
A7	Conduct self-inspections or self-assessments	66
B90	Maintain training records or files	65
A2	Assign personnel to work areas or duty positions	64
A14	Determine or establish work assignments or priorities	63
R513	Clean chemical warfare personal protective clothing	62
R516	Erect camouflage nettings	61
R528	Perform rapid runway repairs	60
A49	Inspect personnel for compliance with military standards	60
B77	Conduct OJT	60
A12	Determine or establish logistics requirements, such as personnel, equipment, tools, parts, supplies, or workspace	59
R526	Perform chemical warfare agent decontamination procedures	58
D117	Inventory equipment, tools, parts, or supplies	58
B79	Counsel trainees on training progress	56
B80	Determine training requirements	55
R527	Perform cover and concealment techniques for work party security	47
R529	Perform site security	47
R531	Set up or tear down shelters	43
R533	Transport mobility or contingency equipment to or from deployed locations	40

* Average Number of Tasks Performed - 130

TABLE 17

REPRESENTATIVE TASKS PERFORMED BY ACTIVE DUTY 3E472 PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=33)
A52	Participate in general meetings, such as staff meetings, briefings, conferences, or workshops, other than conducting	97
A14	Determine or establish work assignments or priorities	91
A65	Supervise military personnel	88
A12	Determine or establish logistics requirements, such as personnel, equipment, tools, parts, supplies, or workspace	88
A6	Conduct safety inspections of equipment or facilities	88
A7	Conduct self-inspections or self-assessments	85
A5	Conduct general meetings, such as staff meetings, briefings, conferences, or workshops	85
B87	Evaluate progress of trainees	85
A2	Assign personnel to work areas or duty positions	85
A10	Conduct supervisory performance feedback sessions	85
D108	Coordinate maintenance of liquid fuel systems, other than tank cleaning, with appropriate agencies	85
A49	Inspect personnel for compliance with military standards	85
A28	Establish performance standards for subordinates	82
A40	Evaluate personnel for compliance with performance standards	82
A63	Schedule work assignments or priorities	82
A11	Counsel subordinates concerning personal matters	82
A17	Develop or establish work schedules	79
A69	Write performance reports or supervisory appraisals	79
B90	Maintain training records or files	79
B80	Determine training requirements	79
A16	Develop or establish work methods or procedures	76
A33	Evaluate job hazards or compliance with Air Force Occupational Safety and Health (AFOSH) Program	73
A64	Supervise civilian employees	73
A37	Evaluate logistics requirements, such as personnel, equipment, tools, parts, supplies, or workspace	73
A38	Evaluate maintenance or utilization of equipment, tools, parts, supplies, or workspace	73
A21	Direct administrative functions	70

* Average Number of Tasks Performed - 177

TABLE 18

REPRESENTATIVE TASKS PERFORMED BY GUARD DAFSC 3E472 PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=51)
R515	Don or doff chemical warfare personal protective clothing	88
R517	Erect tents	86
R532	Tear down, inspect, clean, and reassemble weapons, such as M-16 rifles	84
E131	Clean work areas	82
E129	Clean handtools	82
R520	Inspect mobility bags or kits	80
R519	Inspect chemical warfare personal protective clothing	80
R518	Identify chemical warfare agents	76
R526	Perform chemical warfare agent decontamination procedures	75
R516	Erect camouflage nettings	73
R528	Perform rapid runway repairs	73
R513	Clean chemical warfare personal protective clothing	69
E144	Inspect grounding cables, rods, or bonding devices	69
E147	Install or remove filter-separator elements	65
A65	Supervise military personnel	63
R524	Participate in convoy exercises	63
A7	Conduct self-inspections or self-assessments	61
A6	Conduct safety inspections of equipment or facilities	59
D117	Inventory equipment, tools, parts, or supplies	59
A52	Participate in general meetings, such as staff meetings, briefings, conferences, or workshops, other than conducting	57
R531	Set up or tear down shelters	55
B90	Maintain training records or files	53
A12	Determine or establish logistics requirements, such as personnel, equipment, tools, parts, supplies, or workspace	53
R533	Transport mobility or contingency equipment to or from deployed locations	51
R527	Perform cover and concealment techniques for work party security	51
A2	Assign personnel to work areas or duty positions	51
D108	Coordinate maintenance of liquid fuel systems, other than tank cleaning, with appropriate agencies	51
R529	Perform site security	51

*Average Number of Tasks Performed - 116

TABLE 19

REPRESENTATIVE TASKS PERFORMED BY RESERVE DAFSC 3E472 PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=16)
R532	Tear down, inspect, clean, and reassemble weapons, such as M-16 rifles	94
R528	Perform rapid runway repairs	94
R515	Don or doff chemical warfare personal protective clothing	88
R517	Erect tents	88
R520	Inspect mobility bags or kits	88
R519	Inspect chemical warfare personal protective clothing	88
R526	Perform chemical warfare agent decontamination procedures	88
R518	Identify chemical warfare agents	81
R516	Erect camouflage nettings	81
R529	Perform site security	81
B90	Maintain training records or files	75
R513	Clean chemical warfare personal protective clothing	75
R525	Perform camp security	75
B79	Counsel trainees on training progress	69
R527	Perform cover and concealment techniques for work party security	69
A22	Direct training functions	69
A52	Participate in general meetings, such as staff meetings, briefings, conferences, or workshops, other than conducting	69
R524	Participate in convoy exercises	69
R531	Set up or tear down shelters	63
A2	Assign personnel to work areas or duty positions	63
B77	Conduct OJT	63
A65	Supervise military personnel	56
R521	Monitor mobility deployment kits	56
B80	Determine training requirements	56
A49	Inspect personnel for compliance with military standards	56
R533	Transport mobility or contingency equipment to or from deployed locations	56
E131	Clean work areas	56
D117	Inventory equipment, tools, parts, or supplies	50
B92	Plan or schedule training	44
B93	Prepare job qualification standards (JQSs)	19

* Average Number of Tasks Performed - 76

TABLE 20

TASKS WHICH BEST DIFFERENTIATE BETWEEN ALL DAFSC 3E452 AND DAFSC 3E472 PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS		3E452 (N=136)	3E472 (N=100)	DIFFERENCE
M444	Repair service station dispensers	53	20	33
M416	Calibrate service station pump dispensing unit meters	59	26	33
M417	Clean service station pump assembly strainers	51	21	30
M428	Install or remove service station pump hoses	56	26	30
F161	Clean protective clothing or equipment, other than chemical warfare	50	22	28
K383	Repair fuel pumps	40	14	26
M447	Repair service station pumps	47	21	26
I296	Adjust pressure-relief controls	50	24	26
E132	Cut copper tubing	69	44	25
I301	Install or remove automatic valve main valve bodies	47	22	25
E127	Bend copper tubing	71	46	25
A49	Inspect personnel for compliance with military standards	38	60	-23
A45	Evaluate workload requirements	15	38	-23
B87	Evaluate progress of trainees	31	54	-23
A22	Direct training functions	29	52	-23
B86	Evaluate personnel to determine training needs	27	51	-24
A14	Determine or establish work assignments or priorities	39	63	-24
A5	Conduct general meetings, such as staff meetings, briefings, conferences, or workshops	29	53	-24
A2	Assign personnel to work areas or duty positions	39	64	-25
B79	Counsel trainees on training progress	31	56	-25
A9	Conduct supervisory orientations for newly assigned personnel	29	54	-25
A44	Evaluate work schedules	18	44	-26
A65	Supervise military personnel	42	70	-28
B90	Maintain training records or files	37	65	-28
B80	Determine training requirements	24	55	-31

TABLE 21

TASKS WHICH BEST DIFFERENTIATE BETWEEN ACTIVE DUTY DAFSC 3E452 AND DAFSC 3E472 PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS		3E452 (N=82)	3E472 (N=33)	DIFFERENCE
H283	Operationally inspect meters	76	33	42
E156	Perform corrosion control on exterior metal surfaces	68	21	47
E132	Cut copper tubing	83	36	47
M428	Install or remove service station pump hoses	83	36	47
M417	Clean service station pump assembly strainers	77	30	47
M416	Calibrate service station pump dispensing unit meters	85	39	46
H282	Operationally inspect meter registers or counters	78	33	45
E146	Install or remove compression fittings, such as ferrules	72	27	45
M444	Repair service station dispensers	80	36	44
E144	Inspect grounding cables, rods, or bonding devices	85	42	43
A52	Participate in general meetings, such as staff meetings, briefings, conferences, or workshops, other than conducting	55	97	-42
A69	Write performance reports or supervisory appraisals	37	79	-42
A34	Evaluate job or position descriptions	18	61	-42
A45	Evaluate workload requirements	18	61	-42
A56	Plan equipment replacement programs	9	52	-43
A44	Evaluate work schedules	24	70	-45
A5	Conduct general meetings, such as staff meetings, briefings, conferences, or workshops	39	85	-46
B80	Determine training requirements	33	79	-46
A64	Supervise civilian employees	26	73	-47
A70	Write recommendations for awards or decorations	30	79	-48
A61	Schedule personnel for temporary duty (TDY) assignments, leaves, or passes	28	79	-51
A21	Direct administrative functions	18	70	-51

TABLE 22

TASKS WHICH BEST DIFFERENTIATE BETWEEN GUARD DAFSC 3E452 AND DAFSC 3E472 PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS		3E452 (N=36)	3E472 (N=51)	DIFFERENCE
G233	Respond to base-wide fuel spills	8	33	-25
A44	Evaluate work schedules	8	33	-25
A12	Determine or establish logistics requirements, such as personnel, equipment, tools, parts, supplies, or workspace	28	53	-25
A40	Evaluate personnel for compliance with performance standards	6	31	-26
A9	Conduct supervisory orientations for newly assigned personnel	11	37	-26
A41	Evaluate personnel for promotion, demotion, reclassification, or special awards	3	29	-27
A14	Determine or establish work assignments or priorities	25	53	-28
B80	Determine training requirements	11	39	-28
N449	Inspect dry-break couplings	17	45	-28
B93	Prepare job qualification standards (JQSs)	3	31	-29
D108	Coordinate maintenance of liquid fuel systems, other than tank cleaning, with appropriate agencies	22	51	-29
B86	Evaluate personnel to determine training needs	3	33	-31
B79	Counsel trainees on training progress	8	39	-31
A49	Inspect personnel for compliance with military standards	14	45	-31
B92	Plan or schedule training	3	35	-33
A63	Schedule work assignments or priorities	3	37	-34
B87	Evaluate progress of trainees	3	39	-36
B90	Maintain training records or files	14	53	-39
A2	Assign personnel to work areas or duty positions	11	51	-40
B77	Conduct OJT	11	53	-42
A65	Supervise military personnel	8	63	-54

TABLE 23

TASKS WHICH BEST DIFFERENTIATE BETWEEN RESERVE DAFSC 3E452 AND DAFSC 3E472 PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS		3E452 (N=18)	3E472 (N=16)	DIFFERENCE
E139	Flair copper tubing	44	19	26
E134	Cut pipes with handtools	50	25	25
E159	Thread pipes	61	38	24
E128	Bend stainless steel tubing	33	13	21
A52	Participate in general meetings, such as staff meetings, briefings, conferences, or workshops, other than conducting	39	69	-30
B94	Procure training aids, space, or equipment	6	38	-32
C106	Review technical order changes	6	38	-32
B86	Evaluate personnel to determine training needs	11	44	-33
R528	Perform rapid runway repairs	61	94	-33
A28	Establish performance standards for subordinates	11	44	-33
R521	Monitor mobility deployment kits	22	56	-34
A5	Conduct general meetings, such as staff meetings, briefings, conferences, or workshops	22	56	-34
A65	Supervise military personnel	17	56	-40
B77	Conduct OJT	22	63	-40
B80	Determine training requirements	11	56	-45
A11	Counsel subordinates concerning personal matters	11	56	-45
A9	Conduct supervisory orientations for newly assigned personnel	11	56	-45
A2	Assign personnel to work areas or duty positions	17	63	-46
A22	Direct training functions	17	69	-52
B79	Counsel trainees on training progress	17	69	-52
B90	Maintain training records or files	22	75	-53

TM	Module Title	No. of Tasks	Percent Time Spent Sum	Avg. Percent Members Perf.
0026	Establish and evaluate personnel standards	11	7	77
0003	Perform general maintenance activities	25	6	44
0024	Establish work assignments/procedures	6	5	83
0025	Directly supervise trainee/training	6	4	80

These TMs indicate the scope of active duty 7-skill level members' activities and provide emphasis and direction for training, or as a minimum a starting point for upgrade training to craftsman, with an emphasis on both general and specific supervisory and management activities, as they apply to LFM activities.

Summary

Active duty LFM career ladder progression follows a normal pattern of technical job focus at the lower skill levels, with a broadening into first-line supervision at the 7-skill level. On the other hand, ANG and AFRC personnel tend to perform a larger amount of technical tasks relating to mobility and contingency duties in the upper skill levels. Overall, emphasis at the 3-skill level is on general maintenance of liquid fuel systems. At the 5-skill level, members can be expected to work nearly any job. At the 7-skill level, active duty members spend almost half their time performing supervisory activities, while ANG and AFRC work is still largely focused on technical tasks.

TRAINING ANALYSIS

Occupational survey data represent one of many sources of information which are used to assist in the development of training programs for career ladder personnel. OSR data useful to training personnel include: job descriptions for the various jobs performed within a career ladder, distribution of personnel across career ladder jobs, percentages of personnel performing specific tasks, and percentages of personnel maintaining specific equipment or systems, as well as the difficulty of tasks and TE ratings gathered from senior members of the career ladder.

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

TE and TD data are secondary factors that can assist technical school personnel in deciding which tasks should be emphasized in entry-level training. (These ratings, based on the judgments of senior career ladder NCOs working at operational units in the field, are collected to provide training personnel with a rank-ordering of those tasks in the JI considered important for first-

enlistment personnel training (TE), along with a measure of the difficulty of the JI 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-enlistment personnel, but this decision must be weighed against percentages of personnel performing the tasks, command concerns, and criticality of the tasks.

To assist technical school personnel, AFOMS has developed a computer program that incorporates these secondary factors and the percentage of first-enlistment personnel performing each task to produce an Automated Training Indicator (ATI) for each task. These indicators correspond to training decisions listed and defined in the Training Decision Logic Table found in Attachment 1, AETCR 52-22, and allow course personnel to quickly focus their attention on those tasks that are most likely to qualify for ABR course consideration.

Table 24 lists the tasks having the highest TE ratings, as well as the percentages of first-job, first-enlistment, and TD ratings for each task. The majority of high TE tasks are performed by high percentages of both groups. Most tasks involve performing operational inspections and adjustments of valve controls of liquid fuel tanks and systems.

Table 25 lists the tasks having the highest TD ratings. The percentages of first-job, first-enlistment, 5-, and 7-skill level personnel performing, and the TE rating are also included for each task. The majority of tasks with high difficulty are not performed by high percentages of any group, but 10 tasks have fairly high TE ratings. Many of the tasks with high TD values are related to overhauling fuel storage pumps and performing electrical tasks.

Various lists of tasks, accompanied by TE and TD ratings, and where appropriate, ATI information, are contained in the Training Extract package and should be reviewed in detail by technical school personnel. (For a more detailed explanation of TE and TD ratings, see Task Factor Administration in the **SURVEY METHODOLOGY** section of this report.).

First-Enlistment Personnel

In this study, there are 72 active duty members in their first enlistment (1-48 months TAFMS), representing 23 percent of the survey sample. No ANG or AFRC personnel are included in any of the year groups because their TAFMS records are different from the Active Duty members. As displayed in Table 26, approximately 86 percent of their duty time is devoted to technical functions. Figure 2 shows how all first-enlistment personnel are distributed across the jobs identified in the **SPECIALTY JOBS** section of this report. Of the three clusters identified, a vast majority of personnel (95 percent) are involved in the general maintenance activities.

TABLE 24

DAFSC 3E4X2 TASKS WITH HIGHEST TRAINING EMPHASIS RATINGS

TASKS		TNG EMP*	PERCENT MEMBERS PERFORMING 1ST JOB	1ST ENL	TASK DIFF**
E158	Test vapor levels in enclosed areas	7.73	73	76	4.95
E147	Install or remove filter-separator elements	7.13	94	93	4.98
I297	Adjust rate-of-flow controls	7.07	63	65	5.71
I296	Adjust pressure-relief controls	7.07	69	71	5.47
M416	Calibrate service station pump dispensing unit meters	7.07	69	71	4.74
E150	Operationally inspect automatic pumphouse control valves	7.00	77	78	6.11
I295	Adjust pressure-reducing controls	6.93	63	65	5.47
I294	Adjust opening or closing speed controls	6.93	63	65	4.96
H284	Operationally inspect pressurized system automatic functions	6.73	21	29	6.51
H246	Calibrate fuel dispensing meters, other than service station pump dispensing unit meters	6.67	60	68	5.69
H240	Adjust low-level shutoffs	6.67	54	54	5.84
I293	Adjust excess flow shut-off controls	6.60	44	46	5.80
K367	Adjust pump coupling alignments	6.60	23	31	6.57
H239	Adjust high-level shutoffs	6.60	58	58	5.59
K366	Adjust mechanical seals	6.53	38	47	6.75
K372	Install or remove mechanical seals	6.53	42	51	7.16
E152	Operationally inspect filter separators	6.53	83	83	5.56
H279	Operationally inspect high-level alarms	6.47	46	47	4.56
I327	Operationally inspect pressure-relief controls	6.47	56	57	4.76
N463	Overhaul single-point nozzles	6.40	54	61	5.95
I328	Operationally inspect rate-of-flow controls	6.40	48	51	5.25
I341	Repair pressure-relief controls	6.33	52	54	5.60
I314	Install or remove solenoids	6.33	29	33	5.46
I342	Repair rate-of-flow controls	6.33	35	39	5.76
I340	Repair pressure-reducing controls	6.33	44	49	5.60
L390	Hydrostatically pressure-test pipeline systems	6.20	48	50	5.82
H281	Operationally inspect low-level shutoffs	6.20	48	50	5.82
H245	Calibrate direct-reading pressure gauges	6.13	58	64	5.15

* Mean TE Rating is 3.62, and Standard Deviation is 1.73 (High TE = 4.35)

** Mean TD Rating is 5.00, and Standard Deviation is 1.00

TABLE 25

DAFSC 3E4X2 TASKS WITH HIGHEST TASK DIFFICULTY RATINGS

TASKS		TASK DIFF*	PERCENT MEMBERS PERFORMING 1ST JOB	1ST ENL	DAFSC 3E432	DAFSC 3E452	DAFSC 3E472	TNG EMP
H292	Troubleshoot PLC controls	7.90	0		1	4	6	2.93
K381	Repair deep-well turbine pumps	7.60	23	29	27	35	15	4.87
K384	Repair mechanical seals	7.50	29	36	33	43	15	4.27
K380	Overhaul tri-rotor pumps	7.44	6	4	3	5	0	3.87
Q511	Troubleshoot electrical circuits or components, other than PLC controls	7.31	4	7	7	18	18	4.00
K377	Overhaul centrifugal pumps	7.25	25	31	32	34	21	5.53
K378	Overhaul gear pumps	7.18	13	18	16	27	9	5.27
K379	Overhaul rotary-vane pumps	7.18	13	18	16	33	9	4.60
K372	Install or remove mechanical seals	7.16	42	51	53	59	36	6.53
A24	Draft budget requirements	6.99	2	3	4	20	52	.00
K385	Repair pump coupling alignment	6.99	23	24	23	34	15	5.20
Q496	Interpret electrical schematic	6.98	6	13	10	34	27	5.00
A11	Counsel subordinates concerning personal matters	6.95	6	7	11	60	82	1.80
A72	Write staff studies, surveys, or routine reports, other than training or inspection reports	6.92	2	3	1	4	33	.27
A8	Conduct staff assistance visits, inspections, or audits	6.92	8	7	5	15	45	.33
A12	Determine or establish logistics requirements, such as personnel, equipment, tools, parts, supplies or workspace	6.86	6	11	16	60	88	1.53
K383	Repair fuel pumps	6.86	40	54	49	63	21	5.27
Q510	Rewire electrical motors	6.85	17	14	11	12	6	1.60
K382	Repair deep-well turbine ratchets	6.83	15	15	12	15	9	4.33
A31	Evaluate budget requirements	6.82	2	4	3	16	45	.00
A67	Write inspection reports	6.77	0	3	3	9	30	.60
K366	Adjust mechanical seals	6.75	38	47	45	57	42	6.53
H241	Adjust or calibrate differential pressure flow switches	6.75	38	47	45	57	42	6.53

* TD MEAN = 5.00; S.D. = 1.00

TABLE 26

RELATIVE PERCENT TIME SPENT ACROSS DUTIES BY ACTIVE DUTY FIRST-ENLISTMENT AFSC 3E4X2 PERSONNEL

DUTIES		PERCENT TIME SPENT (N=72)
A	PERFORMING MANAGEMENT AND SUPERVISORY ACTIVITIES	3
B	PERFORMING TRAINING ACTIVITIES	*
C	PERFORMING GENERAL ADMINISTRATIVE AND TECHNICAL ORDER SYSTEM ACTIVITIES	*
D	PERFORMING GENERAL SUPPLY AND EQUIPMENT ACTIVITIES	3
E	PERFORMING GENERAL MAINTENANCE ACTIVITIES	21
F	CLEANING OR INSPECTING FUEL STORAGE TANKS	9
G	PERFORMING ENVIRONMENTAL OR SAFETY ACTIVITIES	5
H	MAINTAINING FUEL SYSTEM COMPONENTS	11
I	INSTALLING OR MAINTAINING AUTOMATIC VALVES AND COMPONENTS	13
J	INSTALLING OR MAINTAINING MANUAL VALVES AND COMPONENTS	4
K	INSTALLING OR MAINTAINING FUEL STORAGE PUMPS	4
L	INSTALLING OR MAINTAINING PIPELINES AND PITS	4
M	INSTALLING OR MAINTAINING SERVICE STATION PUMP ASSEMBLIES	6
N	INSTALLING OR MAINTAINING FUEL LOADING OR OFF-LOADING EQUIPMENT	4
O	PERFORMING FUEL SYSTEMS DEACTIVATION OR DECOMMISSIONING ACTIVITIES	3
P	INSTALLING OR MAINTAINING PORTABLE OR AIR-TRANSPORTABLE FUELING SYSTEMS	*
Q	PERFORMING ELECTRICAL ACTIVITIES	3
R	PERFORMING MOBILITY AND CONTINGENCY ACTIVITIES	6

* Denotes less than 1 percent

NOTE: Columns may not add to 100 percent due to rounding

AFSC 3E4X2 FIRST ENLISTMENT JOBS

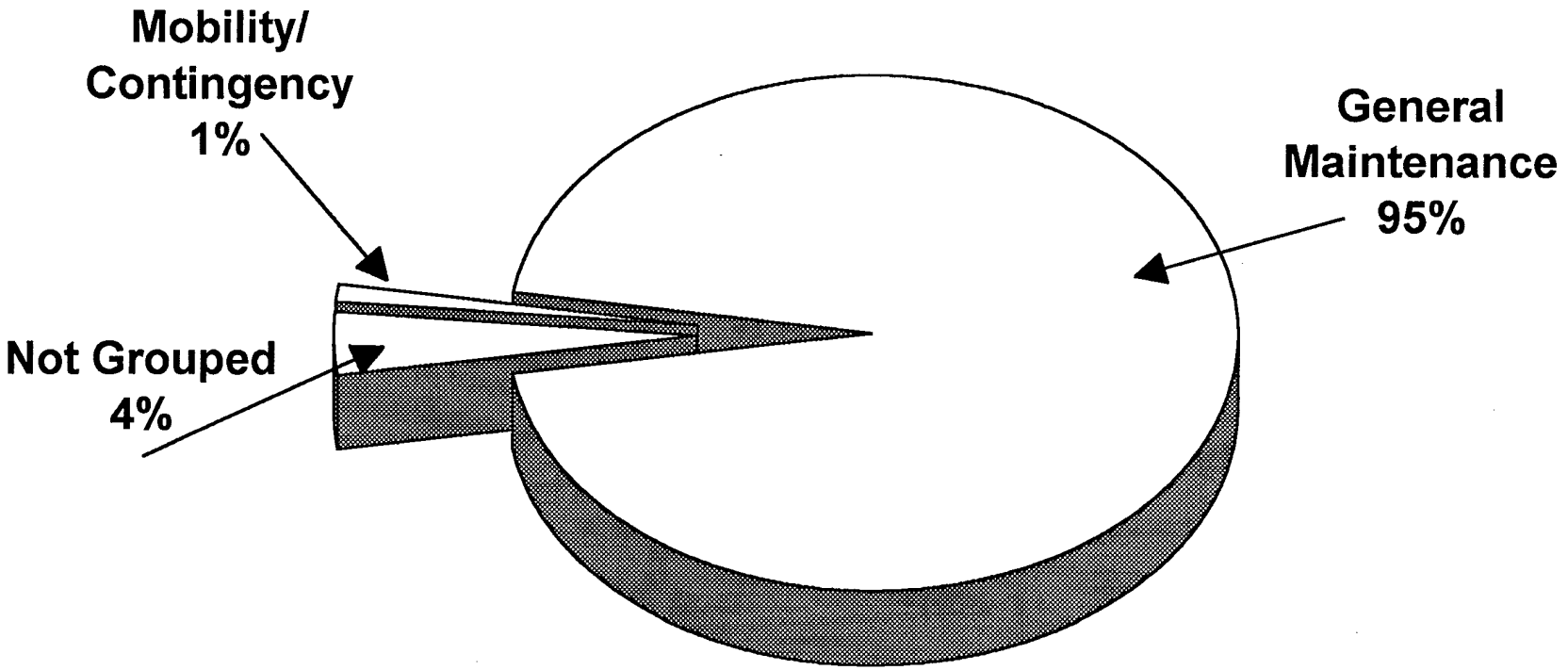

FIGURE 2

Table 27 describes the majority of work performed by these members with a listing of the percent members performing certain tasks. The majority of the tasks displayed involve performing general avionics maintenance. Equipment utilized by 30 percent or more of first-job or first-enlistment personnel are listed in Table 28.

The operations training school requested a matrix of background questions to determine what systems are maintained at each operational base. This will allow for tailored training for active duty, ANG, and AFRC students. See Appendix C for information pertaining to specific LFM systems and their locations.

Specialty Training Standard (STS)

Training personnel from Sheppard AFB TX matched tasks in the JI to appropriate sections of the STS, dated 1 April 1997. A listing of the STS was then produced showing each STS paragraph and subparagraph, tasks matched, percent criterion group members performing, TE and TD ratings, and ATI. This listing is included in the Training Extract sent to the school for review. Criteria set forth in ATCR 52-22, Attachment 1, were used to review the relevance of each STS paragraph and subparagraph with matched tasks.

Any STS paragraph or subparagraph with matched tasks performed by 20 percent or more of first-job (1-24 months TAFMS), first-enlistment (1-48 months TAFMS), 3-, 5-, or 7-skill level members is considered to be supported and should be retained in the STS. All STS paragraphs with matched tasks were reviewed against OSR data. The standard analysis involving TAFMS and DAFSC groups resulted in only seven unsupported STS items. Table 29 lists examples those STS items and matched tasks that did not meet the criteria. For ease of reading, only the first-enlistment and 5- and 7-skill level groups are presented in Table 29.

Tasks not matched to any element of the STS are listed at the end of the STS computer listing. Sixty-four technical tasks performed by more than 20 percent of criterion group members were not matched to the STS. Table 30 shows inventory tasks not referenced, but performed by 20 percent or more of one criterion groups' members. All tasks not referenced should be reviewed to identify areas which may be included in future STSs.

Plan of Instruction (POI)

At the same time the STS was matched to the task list, the POI for course J3ABR3E432-003 was also matched in the same way. Any POI paragraph or subparagraph with matched tasks performed by 30 percent or more of first-job (1-24 months TAFMS) or first-enlistment (1-48 months TAFMS) members is considered to be supported and should be retained in the POI. Of those paragraphs that were matched, there were only five paragraphs with tasks which do not have 30 percent members performing for at least one criterion group. These POI paragraphs

TABLE 27

MOST COMMONLY PERFORMED TASKS
FOR ACTIVE DUTY FIRST-ENLISTMENT 3E4X2 PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=72)
E131	Clean work areas	97
E133	Cut gasket materials	97
E147	Install or remove filter-separator elements	93
E129	Clean handtools	92
E143	Inspect fuel hoses	90
G212	Clean up fuel spills with absorbent materials	86
E159	Thread pipes	85
E152	Operationally inspect filter separators	83
E134	Cut pipes with handtools	83
E132	Cut copper tubing	82
E140	Ground portable equipment	81
E130	Clean strainer screens	81
E144	Inspect grounding cables, rods, or bonding devices	79
E127	Bend copper tubing	79
R520	Inspect mobility bags or kits	79
E150	Operationally inspect automatic pumphouse control valves	78
R517	Erect tents	78
E158	Test vapor levels in enclosed areas	76
E139	Flair copper tubing	76
O470	Drain filter separators	72
R519	Inspect chemical warfare personal protective clothing	72
E149	Install or remove strainer screens	72
M416	Calibrate service station pump dispensing unit meters	71
I296	Adjust pressure-relief controls	71
M428	Install or remove service station pump hoses	71
M439	Operationally inspect service station dispensers	69
E151	Operationally inspect automatic water drain valves	67
E146	Install or remove compression fittings, such as ferrules	67
H275	Join pipes with threaded fittings	65
L412	Replace flange gaskets	63
H270	Install or remove pressure gauges	63
H274	Join pipes with bolted flanges	63
N463	Overhaul single-point nozzles	61
E141	Ground tank cars, trucks, or other vehicles	58

* Average Number of Tasks Performed - 148

TABLE 28

EQUIPMENT USED OR OPERATED BY 30 PERCENT OR MORE OF ACTIVE DUTY AFSC 3E4X2 FIRST-JOB OR FIRST-ENLISTMENT PERSONNEL (PERCENT MEMBERS RESPONDING)

TOOLS	1ST JOB (N=48)	1ST ENL (N=72)
Gasket Cutting Kits	100	99
Lubricating Grease Guns	96	97
Prover Cans (5-gallon)	100	97
Impact Wrenches	94	94
Flange Spreaders	92	93
Hand Pipe Threaders and Cutters	92	93
Portable Air Compressors	90	92
Tube Bending Kits	90	90
Combustible Gas and Oxygen Indicators	90	89
Electric Drills	83	88
Master Meters	85	88
Compressed Air Respirators and Hoses	85	79
Grinders	88	79
Gauging Tapes	77	76
Coppus Blowers	79	75
Air-Powered Air Blowers	71	74
Drill Presses	71	74
Hydraulic Pressure Gauge Testers	69	74
Multimeters	75	72
Pneumatic Drills	69	71
Pumps, Portable Pneumatic	71	68
Torque Wrenches	69	68
Flange Jacks	67	65
Power Pipe Threaders and Cutters	54	61
Soldering Irons	54	53
Hoists, Come-A-Long	52	51
Portable Generators	52	47
Pumps, Portable Gasoline	50	47
Dead-Weight Testers	48	40
Hoists, Other than Come-A-Long	38	38
Hydrostatic Hose Testers	40	38
Clamp-On Amp Meters	35	33
Metal Thickness Gauge Testers	33	32
Rapid Utility Repair Kits (RURKs)	33	31

TABLE 29

STS ITEMS NOT SUPPORTED BY OSR DATA
(PERCENT MEMBERS PERFORMING)

STS REFERENCE/TASKS	3-SKILL LVL PROF CODE	TNG EMP	% MEMBERS PERFORMING 1ST ENL (N=72)	5-SKILL LVL (N=82)	7-SKILL LVL (N=33)	TSK DIF
11.2.3 National Electrical Code (NFPA70)	-					
Q498 Locate information in National Electrical Codes		2.73	1	9	12	5.87
13.2 Mechanics	/A					
F208 Rig blocks and tackles		2.93	10	11	6	4.48
16.5. Motors	/B					
Q509 Repair magnetic starters		1.53	4	12	0	6.24
16.9. Troubleshoot electrical systems	*/2b					
Q511 Troubleshoot electrical circuits or components, other than PLC controls		4.00	7	18	18	7.31
H292 Troubleshoot PLC controls		2.93	0	4	6	7.90
16.12. Cathodic protection	-					
F196 Isolate cathodic protection rectifiers		3.47	8	17	12	6.00
16.13. National electric code	/A					
Q498 Locate information in National Electrical Codes		2.73	1	9	12	5.87
19.2.2.2. Fuel (R-14 types) storage bladder erection	-					
P479 Operationally inspect portable or air-transportable fueling systems		2.93	0	5	3	6.43
P477 Assemble portable fueling systems		2.60	1	5	3	6.46
P476 Adjust portable or air-transportable fueling system components		2.33	3	4	3	6.59
P478 Install or remove bladder tanks on portable or air-transportable fueling systems		2.33	0	4	0	5.98

TD MEAN = 5.00; S.D. = 1.00
TE MEAN = 3.62; S.D. = 1.73

TABLE 30

TECHNICAL TASKS PERFORMED BY 20 PERCENT OR MORE
GROUP MEMBERS BUT NOT REFERENCED BY STS

TASKS		PERCENT MEMBERS PERFORMING						
		TNG EMP	1ST JOB	1ST ENL	3E432 (N=73)	3E452 (N= 82)	3E472 (N=33)	TSK DIF
H284	Operationally inspect pressurized system automatic functions	6.73	21	29	30	43	33	6.51
N463	Overhaul single-point nozzles	6.40	54	61	60	63	33	5.95
I314	Install or remove solenoids	6.33	29	33	34	52	24	5.46
H280	Operationally inspect high-level shutoffs	6.13	56	60	59	76	39	4.96
M444	Repair service station dispensers	5.87	46	57	58	80	36	5.54
K377	Overhaul centrifugal pumps	5.53	25	31	32	34	21	7.25
E144	Inspect grounding cables, rods, or bonding devices	5.47	79	79	82	85	42	3.64
I313	Install or remove rotary disc assemblies	5.47	23	26	30	48	30	5.37
M417	Clean service station pump assembly strainers	5.33	44	46	48	77	30	3.71
I304	Install or remove ejector strainers, ejectors, or strainer orifices	5.27	48	50	52	62	33	4.71
I315	Install or remove three-way hytrols	5.27	25	31	33	48	21	4.99
K383	Repair fuel pumps	5.27	40	54	49	63	21	6.86
I302	Install or remove auxiliary check valves	5.20	50	53	53	60	36	4.61
I303	Install or remove auxiliary hytrols	5.20	54	57	58	62	36	4.71
I311	Install or remove pressure-relief controls	5.13	44	49	49	60	39	4.77
J349	Install or remove manual valve packings	5.13	44	46	51	51	21	4.31
K371	Install or remove fuel pumps	5.13	40	47	45	56	30	6.14
I308	Install or remove opening or closing speed control components	5.07	25	32	34	50	33	4.77
I310	Install or remove pressure-reducing controls	5.07	31	38	41	57	33	4.77
I312	Install or remove rate-of-flow controls	5.00	29	33	37	57	36	4.95
N455	Install or remove dry-break couplings	4.80	38	46	47	65	33	4.22

TD MEAN = 5.00; S.D. = 1.00
TE MEAN = 3.62; S.D. = 1.73

account for 16 hours of instructional time and can be found in Table 31. For the most part, those POI items not supported deal with gas/oxygen indicators, electrical tests, motors, and hydrostatic hose testing.

Tasks not matched to any POI element are listed at the end of the POI computer listing. According to the criteria listed in AETC Instruction 36-2601, Attachment 2, tasks with a percent of members performing greater than 30 percent for either first-job or first-enlistment personnel should be examined closely for inclusion in the POI. Table 32 shows a sample of inventory tasks ranked in descending order of the computed ATI value and the percent of first-job and first-enlistment members performing, as well as the corresponding TE and TD ratings. Training personnel are encouraged to review the Training Extract as they undertake future revisions, if any, of the POI.

JOB SATISFACTION ANALYSIS

An examination of responses to the job satisfaction questions of various groups can give career ladder managers a better understanding of some of the factors that may affect the job performance of airmen in the career ladder. The LFM survey booklet included questions covering job interest, perceived utilization of talents and training, sense of accomplishment from work, and reenlistment intentions. The responses of the current survey sample were then analyzed by making several comparisons: (1) among TAFMS groups of the LFM's career ladder and a comparative sample of personnel from other Direct Support career ladders surveyed in 1996 (AFSCs 2T0X1, 2T2X1, 3C1X1, and 3E1X1); (2) between current and previous survey experience groups; and (3) across specialty groups identified in the **SPECIALTY JOBS** section of the report.

Table 33 presents job satisfaction data for AFSC 3E4X2 TAFMS groups together with data for a comparative sample surveyed during the previous calendar year. These data give a relative measure of how the job satisfaction of AFSC 3E4X2 personnel compares with similar Air Force specialties. LFM's personnel reported somewhat higher job satisfaction in comparison to the satisfaction of the comparative sample. Overall, satisfaction for all three TAFMS groups in AFSC 3E4X2 is generally positive, with no serious problems noted.

Comparison of job satisfaction responses of the current survey TAFMS groups to TAFMS groups in the 1992 surveys of AFSC 545X1 group (Table 34) indicate that generally the current responses are similar to the past study. Biggest improvement can be seen in the "Expressed Job Interest" of the career group (97+ months TAFMS).

TABLE 31

POI ITEMS NOT SUPPORTED BY OSR DATA
(PERCENT MEMBERS PERFORMING)

POI OBJECTIVES/TASKS	TNG EMP	ATI	% MEMBERS PERFORMING 1ST JOB	1ST ENL	TSK DIF
I. 6e. Using a combustible gas/oxygen indicator and a checklist, work as a team member to inspect a vapor/oxygen indicator.					
G210 Calibrate vapor indicators, such as Bacharach 514M	5.27	7	19	24	6.58
II. 3b. Using electrical trainer, test equipment and a checklist, measure circuit voltage, current and resistance.					
Q503 Perform amperage tests	4.47	7	17	18	5.52
Q504 Perform continuity checks of electrical circuits	5.20	7	15	19	5.42
Q505 Perform resistance tests	4.80	7	19	18	5.02
Q507 Perform voltage tests	4.67	7	19	18	5.33
II. 4b. Using a motor/motor controller trainer, handtools and a checklist, replace a motor.					
Q489 Install or remove electrical motors	4.80	7	15	17	5.61
II. 4/5e. Using a motor/motor controller trainer, handtools and a checklist, replace a motor starter.					
Q493 Install or remove magnetic starters	2.93	2	6	6	5.72
IV. 3/4d. Using a hydrostatic hose tester, hose, handtools, and a checklist, work as a team member to hydrostatically test the hose.					
N448 Hydrostatically pressure-test hoses	3.53	2	25	28	5.19

TD MEAN = 5.00; S.D. = 1.00
TE MEAN = 3.62; S.D. = 1.73

TABLE 32

TECHNICAL TASKS PERFORMED BY 30 PERCENT OR MORE
GROUP MEMBERS BUT NOT REFERENCED BY POI

TASKS		TNG EMP	ATI	PERCENT MEMBERS PERFORMING 1ST JOB	PERCENT MEMBERS PERFORMING 1ST ENL	TSK DIF
E136	Cut stainless steel tubing	5.40	18	48	54	4.03
E150	Operationally inspect automatic pumphouse control valves	7.00	18	77	78	6.11
E152	Operationally inspect filter separators	6.53	18	83	83	5.56
E158	Test vapor levels in enclosed areas	7.73	18	73	75	4.95
F160	Adjust automatic tank gauging systems, such as tape gauges	5.47	18	44	50	5.95
F189	Install or remove isolation flanges on pipelines	5.53	18	48	51	4.75
H239	Adjust high-level shutoffs	6.60	18	58	58	5.59
H240	Adjust low-level shutoffs	6.67	18	54	54	5.84
H245	Calibrate direct-reading pressure gauges	6.13	18	58	64	5.15
H246	Calibrate fuel dispensing meters, other than service station pump dispensing unit meters	6.67	18	60	68	5.59
H280	Operationally inspect high-level shutoffs	6.13	18	56	60	4.96
H281	Operationally inspect low-level shutoffs	6.13	18	48	50	5.02
I297	Adjust rate-of-flow controls	7.07	18	63	65	5.71
I328	Operationally inspect rate-of-flow controls	6.40	18	48	51	5.25
K376	Operationally inspect fuel pumps	6.00	18	58	63	4.56
L390	Hydrostatically pressure-test pipeline systems	6.20	18	48	50	5.82
M444	Repair service station dispensers	5.87	18	46	57	5.54
N463	Overhaul single-point nozzles	6.40	18	54	61	5.95
E151	Operationally inspect automatic water drain valves	5.07	17	65	67	5.47
E155	Operationally inspect product recovery systems	4.53	17	50	56	4.54
F172	Inspect air compressors or hoses	4.53	17	58	65	4.22

TD = 5.00; S.D. = 1.00
TE = 3.62; S.D. = 1.73

TABLE 33

JOB SATISFACTION INDICATORS FOR ACTIVE DUTY AFSC 3E4X2 TAFMS GROUPS
(PERCENT MEMBERS RESPONDING)

	1-48 MONTHS TAFMS		49-96 MONTHS TAFMS		97+ MONTHS TAFMS	
	AFSC 3E4X2 (N=72)	COMP SAMPLE (N=1,606)	AFSC 3E4X2 (N=48)	COMP SAMPLE (N=1,024)	AFSC 3E4X2 (N=68)	COMP SAMPLE (N=2,244)
EXPRESSED JOB INTEREST:						
INTERESTING	71	57	73	60	85	73
SO-SO	18	24	15	22	10	17
DULL	8	19	12	18	4	10
PERCEIVED USE OF TALENTS:						
FAIRLY WELL TO PERFECTLY	78	68	84	68	81	79
NONE TO VERY LITTLE	22	32	17	32	19	21
PERCEIVED USE OF TRAINING:						
FAIRLY WELL TO PERFECT	91	80	75	77	88	76
NONE TO VERY LITTLE	8	20	25	23	12	24
SENSE OF ACCOMPLISHMENT FROM JOB:						
SATISFIED	67	61	69	62	85	71
NEUTRAL	25	19	13	17	7	11
DISSATISFIED	8	20	18	21	7	18
REENLISTMENT INTENTIONS:						
YES OR PROBABLY YES	53	59	67	74	74	76
NO OR PROBABLY NO	47	41	31	26	3	8
WILL RETIRE	0	0	2	0	23	16

NOTE: Comparative data are from the Direct Support AFSCs surveyed in 1996

TABLE 34

COMPARISON OF JOB SATISFACTION INDICATORS FOR AFSC 3E4X2
TAFMS GROUPS IN CURRENT STUDY TO PREVIOUS STUDY
(PERCENT MEMBERS RESPONDING)

	1-48 MONTHS TAFMS		49-96 MONTHS TAFMS		97+ MONTHS TAFMS	
	1997 3E4X2 (N=72)	1992 545X1 (N=84)	1997 3E4X2 (N= 48)	1992 545X1 (N=47)	1997 3E4X2 (N=68)	1992 545X1 (N=95)
EXPRESSED JOB INTEREST:						
INTERESTING	71	76	73	77	85	77
SO-SO	18	16	15	11	10	15
DULL	8	8	12	12	4	8
PERCEIVED USE OF TALENTS:						
FAIRLY WELL TO PERFECT	78	81	84	85	81	86
NONE TO VERY LITTLE	22	19	17	15	19	14
PERCEIVED USE OF TRAINING:						
FAIRLY WELL TO PERFECT	91	89	75	89	88	89
NONE TO VERY LITTLE	8	11	25	11	12	11
SENSE OF ACCOMPLISHMENT FROM JOB:						
SATISFIED	67	N/A	69	N/A	86	N/A
NEUTRAL	25	N/A	13	N/A	7	N/A
DISSATISFIED	8	N/A	18	N/A	7	N/A
REENLISTMENT INTENTIONS:						
YES OR PROBABLY YES	53	53	67	74	74	80
NO OR PROBABLY NO	47	46	31	25	3	6
WILL RETIRE	0	*	2	*	24	14

NOTE: Columns may not add to 100 percent due to rounding or nonresponse

An examination of job satisfaction data can also reveal the influences performing certain jobs may have on overall job satisfaction. Table 35 presents job satisfaction data for the major jobs identified in the career ladder structure for AFSC 3E4X2. Job satisfaction indicators for the Mobility and Contingency Cluster is very low in comparison to the other identified clusters; the General Maintenance Cluster reports very good job satisfaction.

When there are issues in an occupation that are not directly addressed in the JI, survey respondents frequently provide write-in comments. The majority of write-in comments dealt with explaining the type of job held, base to which assigned (particularity ANG bases), or expanded upon the specific type of equipment used. Very few comments addressed anything other than the above mentioned topics.

IMPLICATIONS

As explained in the **INTRODUCTION,** this survey was conducted primarily to provide training personnel with current information on the LFM career ladder for use in reviewing current training programs and training documents. Overall, active duty job progression is normal, and shows a distinct pattern as one moves from the 3- to the 7-skill level. The AFMAN 36-2108 *Specialty Description* broadly describes the jobs and tasks being performed. Job satisfaction is fairly high, and no serious problem areas were noted. Analyses of career ladder documents indicate the STS should be revised as necessary.

TABLE 35

JOB SATISFACTION INDICATORS FOR AFSC 3E4X2 JOB GROUPS
(PERCENT MEMBERS RESPONDING)

	MOBILITY/ CONTINGENCY CLUSTER (N=33)	GENERAL MAINTENANCE CLUSTER (N=221)	SUPERVISION CLUSTER (N=34)
EXPRESSED JOB INTEREST:			
INTERESTING	58	81	79
SO-SO	24	13	9
DULL	18	6	12
PERCEIVED USE OF TALENTS:			
FAIRLY WELL TO PERFECT	36	85	83
NONE TO VERY LITTLE	64	15	17
PERCEIVED USE OF TRAINING:			
FAIRLY WELL TO PERFECT	24	86	71
NONE TO VERY LITTLE	76	14	29
SENSE OF ACCOMPLISHMENT FROM JOB:			
SATISFIED	39	76	76
NEUTRAL	30	14	9
DISSATISFIED	30	9	15
REENLISTMENT INTENTIONS:			
YES OR PROBABLY YES	76	67	76
NO OR PROBABLY NO	18	25	3
WILL RETIRE	6	8	21

NOTE: Columns may not add to 100 percent due to rounding or nonresponse

THIS PAGE INTENTIONALLY LEFT BLANK

APPENDIX A

SELECTED REPRESENTATIVE TASKS PERFORMED BY MEMBERS OF CAREER LADDER JOBS

THIS PAGE INTENTIONALLY LEFT BLANK

TABLE A1

MOBILITY AND CONTINGENCY CLUSTER
(STG35)

TASKS		PERCENT MEMBERS PERFORMING (N=33)
R519	Inspect chemical warfare personal protective clothing	97
R515	Don or doff chemical warfare personal protective clothing	91
R520	Inspect mobility bags or kits	91
R517	Erect tents	91
R532	Tear down, inspect, clean, and reassemble weapons, such as M-16 rifles	88
R518	Identify chemical warfare agents	82
R516	Erect camouflage nettings	82
R513	Clean chemical warfare personal protective clothing	76
R526	Perform chemical warfare agent decontamination procedures	76
R531	Set up or tear down shelters	70
R528	Perform rapid runway repairs	58
R524	Participate in convoy exercises	58
E131	Clean work areas	55
R527	Perform cover and concealment techniques for work party security	52
R525	Perform camp security	48
R529	Perform site security	45
R533	Transport mobility or contingency equipment to or from deployed locations	39
A52	Participate in general meetings, such as staff meetings, briefings, conferences, or workshops, other than conducting	39
E129	Clean handtools	39
D117	Inventory equipment, tools, parts, or supplies	36
R521	Monitor mobility deployment kits	33
B90	Maintain training records or files	33
E159	Thread pipes	33
R512	Assemble rapid utility repair kits (RURKs)	30
E134	Cut pipes with handtools	30
A7	Conduct self-inspections or self-assessments	21
R530	Prepare sites at deployed locations, such as cutting grass or removing snow	21
D112	Evaluate serviceability of equipment, tools, parts, or supplies	21

TABLE 2A

GENERAL MAINTENANCE CLUSTER
(STG14)

TASKS		PERCENT MEMBERS PERFORMING (N=221)
E131	Clean work areas	95
E129	Clean handtools	94
E133	Cut gasket materials	94
E143	Inspect fuel hoses	92
E147	Install or remove filter-separator elements	90
E152	Operationally inspect filter separators	87
E144	Inspect grounding cables, rods, or bonding devices	86
G212	Clean up fuel spills with absorbent materials	84
E159	Thread pipes	84
E140	Ground portable equipment	83
R517	Erect tents	81
R532	Tear down, inspect, clean, and reassemble weapons, such as M-16 rifles	81
E132	Cut copper tubing	81
E134	Cut pipes with handtools	81
R520	Inspect mobility bags or kits	80
E150	Operationally inspect automatic pumphouse control valves	80
E127	Bend copper tubing	79
R515	Don or doff chemical warfare personal protective clothing	78
E130	Clean strainer screens	78
R519	Inspect chemical warfare personal protective clothing	76
E142	Inspect dikes or dike basins	76
E139	Flair copper tubing	74
E158	Test vapor levels in enclosed areas	71
M416	Calibrate service station pump dispensing unit meters	70
H274	Join pipes with bolted flanges	70
L391	Inspect aboveground pipelines	68
H275	Join pipes with threaded fittings	68
R513	Clean chemical warfare personal protective clothing	67
E151	Operationally inspect automatic water drain valves	67
D126	Store equipment, tools, parts, or supplies	66
A6	Conduct safety inspections of equipment or facilities	60
D117	Inventory equipment, tools, parts, or supplies	60
D125	Pick up or deliver equipment, tools, parts, or supplies	58

TABLE 3A

SUPERVISION CLUSTER
(STG26)

TASKS		PERCENT MEMBERS PERFORMING (N=34)
A49	Inspect personnel for compliance with military standards	88
B87	Evaluate progress of trainees	88
A65	Supervise military personnel	85
A14	Determine or establish work assignments or priorities	85
A52	Participate in general meetings, such as staff meetings, briefings, conferences, or workshops, other than conducting	85
A7	Conduct self-inspections or self-assessments	85
A5	Conduct general meetings, such as staff meetings, briefings, conferences, or workshops	85
A40	Evaluate personnel for compliance with performance standards	85
B86	Evaluate personnel to determine training needs	85
A2	Assign personnel to work areas or duty positions	82
A12	Determine or establish logistics requirements, such as personnel, equipment, tools, parts, supplies, or workspace	82
B79	Counsel trainees on training progress	82
B77	Conduct OJT	79
A11	Counsel subordinates concerning personal matters	79
A9	Conduct supervisory orientations for newly assigned personnel	79
B90	Maintain training records or files	76
A17	Develop or establish work schedules	76
R532	Tear down, inspect, clean, and reassemble weapons, such as M-16 rifles	76
A22	Direct training functions	76
A41	Evaluate personnel for promotion, demotion, reclassification, or special awards	76
A50	Interpret policies, directives, or procedures for subordinates	76
A28	Establish performance standards for subordinates	74
B80	Determine training requirements	74
R520	Inspect mobility bags or kits	68
R515	Don or doff chemical warfare personal protective clothing	68
A63	Schedule work assignments or priorities	65

THIS PAGE INTENTIONALLY LEFT BLANK

APPENDIX B

LISTING OF MODULES AND TASK STATEMENTS

THIS PAGE INTENTIONALLY LEFT BLANK

These Task Modules (TMs) were developed in order to organize and summarize the extensive task information for this specialty. The TMs were derived by statistical clustering of the tasks in terms of which tasks are performed by the same incumbents. For example, if an individual performs one maintenance task, the probability is very high that he or she also will perform other maintenance tasks. The statistical clustering generally approximates these "natural groupings."

The title of each TM is our best estimate as to the generic subject content of the group of tasks. The TMs are useful for organizing the task data into meaningful units and as a way to concisely summarize the extensive job data. However, TMs are only one way to organize the information. Other strategies may also be valid.

0001	ST279	Manage mobility/contingency equipment
1	R513	Clean chemical warfare personal protective clothing
2	R515	Don or doff chemical warfare personal protective clothing
3	R516	Erect camouflage nettings
4	R517	Erect tents
5	R518	Identify chemical warfare agents
6	R519	Inspect chemical warfare personal protective clothing
7	R520	Inspect mobility bags or kits
8	R526	Perform chemical warfare agent decontamination procedures
9	R531	Set up or tear down shelters
1	R532	Tear down, inspect, clean, and reassemble weapons, such M-16 rifles

0002	ST345	Perform security activities
1	R525	Perform camp security
2	R527	Perform cover and concealment techniques for work party security
3	R528	Perform rapid runway repairs
4	R529	Perform site security

0003	ST204	Perform general maintenance activities
1	E127	Bend copper tubing
2	E129	Clean handtools
3	E130	Clean strainer screens
4	E131	Clean work areas
5	E132	Cut copper tubing
6	E133	Cut gasket materials
7	E134	Cut pipes with handtools
8	E139	Flair copper tubing
9	E140	Ground portable equipment
1	E141	Ground tank cars, trucks, or other vehicles
11	E142	Inspect dikes or dike basins
12	E143	Inspect fuel hoses
13	E144	Inspect grounding cables, rods, or bonding devices
14	E145	Install or remove bonding devices
15	E146	Install or remove compression fittings, such as ferrules

0003	ST204	Perform general maintenance activities (Continued)
16	E147	Install or remove filter-separator elements
17	E149	Install or remove strainer screens
18	E150	Operationally inspect automatic pumphouse control valves
19	E151	Operationally inspect automatic water drain valves
20	E152	Operationally inspect filter separators
21	E155	Operationally inspect product recovery systems
22	E156	Perform corrosion control on exterior metal surfaces
23	E158	Test vapor levels in enclosed areas
24	E159	Thread pipes
25	G212	Clean up fuel spills with absorbent materials

0004	ST310	Inspect and maintain fuel pumps/pipelines
1	K374	Lubricate pump bearings
2	K375	Lubricate pump motors
3	K376	Operationally inspect fuel pumps
4	L391	Inspect aboveground pipelines
5	L392	Inspect system identification markings
6	L412	Replace flange gaskets

0005	ST295	Inspect fuel loading equipment
1	N449	Inspect dry-break couplings
2	N450	Inspect hose connections
3	N453	Inspect quick disconnect couplings, such as cam-break
4	N458	Lubricate swivel joints
5	N459	Operationally inspect emergency-stop switches
6	N460	Operationally inspect truck-fill stands

0006	ST267	Maintain service station pumps
1	M416	Calibrate service station pump dispensing unit meters
2	M417	Clean service station pump assembly strainers
3	M421	Install or remove service station discharge line filters
4	M422	Install or remove service station dispensers
5	M428	Install or remove service station pump hoses
6	M439	Operationally inspect service station dispensers
7	M442	Operationally inspect service station pumps
8	M444	Repair service station dispensers
9	M447	Repair service station pumps

0007	ST317	Drain pipelines and tanks
1	O466	Blind flange open pipelines
2	O470	Drain filter separators
3	O471	Drain fuel storage tanks
4	O472	Drain pipelines

0008	ST517	Adjust automatic controls
1	I294	Adjust opening or closing speed controls
2	I295	Adjust pressure-reducing controls
3	I296	Adjust pressure-relief controls
4	I297	Adjust rate-of-flow controls

0009	ST338	Operationally inspect fuel system components
1	H279	Operationally inspect high-level alarms
2	H280	Operationally inspect high-level shutoffs
3	H281	Operationally inspect low-level shutoffs
4	H282	Operationally inspect meter registers or counters
5	H283	Operationally inspect meters
6	J354	Operationally inspect check valves
7	J355	Operationally inspect manual valves, other than check valves

0010	ST455	Operationally inspect automatic valves/controls
1	I318	Operationally inspect auxiliary check valves
2	I319	Operationally inspect auxiliary hytrols
3	I320	Operationally inspect ejector strainers, ejectors, or orifices
4	I321	Operationally inspect emergency-stop valves
5	I322	Operationally inspect excess flow shut-off controls
6	I323	Operationally inspect flow clean strainers
7	I324	Operationally inspect opening or closing speed control
8	I325	Operationally inspect powertools
9	I326	Operationally inspect pressure-reducing controls
10	I327	Operationally inspect pressure-relief controls
11	I328	Operationally inspect rate-of-flow controls
12	I329	Operationally inspect rotary disc assemblies
13	I330	Operationally inspect solenoids
14	I331	Operationally inspect three-way hytrols

0011	ST375	Adjust fuel system gauges/shutoffs
1	H239	Adjust high-level shutoffs
2	H240	Adjust low-level shutoffs
3	H243	Adjust or calibrate tank liquid level gauges, such as liquidometers
4	H245	Calibrate direct-reading pressure gauges

0012	ST257	Repair manual valves
1	J347	Install or remove check valves
2	J349	Install or remove manual valve packings
3	J350	Install or remove manual valves, other than check valves
4	J351	Install or remove nonlubricated plug valves
5	J363	Repair check valves
6	J364	Repair manual valves, other than check valves

0013	ST335	Install or remove automatic valves/controls
1	I301	Install or remove automatic valve main valve bodies
2	I302	Install or remove auxiliary check valves
3	I303	Install or remove auxiliary hytrols
4	I304	Install or remove ejector strainers, ejectors, or orifices
5	I307	Install or remove flow clean strainers
6	I308	Install or remove opening or closing speed control components
7	I309	Install or remove powertools
8	I310	Install or remove pressure-reducing controls
9	I311	Install or remove pressure-relief controls
10	I312	Install or remove rate-of-flow controls
11	I314	Install or remove solenoids
12	I315	Install or remove three-way hytrols
13	I317	Install or remove VPIs

0014	ST389	Repair automatic valves/controls
1	I332	Repair automatic valve main valve bodies
2	I333	Repair auxiliary check valves
3	I334	Repair auxiliary hytrols
4	I335	Repair ejector strainers, ejectors, or strainer orifices
5	I338	Repair opening or closing speed control components
6	I340	Repair pressure-reducing controls
7	I341	Repair pressure-relief controls
8	I342	Repair rate-of-flow controls

0015	ST293	Maintain mechanical seals/fuel pumps
1	K366	Adjust mechanical seals
2	K371	Install or remove fuel pumps
3	K372	Install or remove mechanical seals
4	K383	Repair fuel pumps

0016	ST273	Repair couplings
1	N455	Install or remove dry-break couplings
2	N456	Install or remove quick disconnect couplings, such as cam-break
3	N463	Overhaul single-point nozzles
4	N464	Repair dry-break couplings
5	N465	Repair quick disconnect couplings, such as cam-break

0017	ST336	Maintain fuel storage tank protective clothing and equipment
1	F161	Clean protective clothing or equipment, other than chemical warfare
2	F162	Clean tank cleaning equipment
3	F170	Don or doff protective clothing or equipment, other than chemical warfare
4	F172	Inspect air compressors or hoses
5	F178	Inspect manhole covers for leaks
6	F179	Inspect protective clothing or equipment, other than chemical warfare
7	F189	Install or remove isolation flanges on pipelines
8	F190	Install or remove manhole covers

0018	ST246	Maintain service station hose retractors
1	M424	Install or remove service station hose retractors
2	M440	Operationally inspect service station emergency-shutoff valves
3	M441	Operationally inspect service station hose retractors
4	M446	Repair service station hose retractors

0019	ST365	Repair emergency-stop valves/controls
1	I305	Install or remove emergency-stop valves
2	I306	Install or remove excess flow shut-off controls
3	I313	Install or remove rotary disc assemblies
4	I336	Repair emergency-stop valves
5	I337	Repair excess flow shut-off controls
6	I343	Repair rotary disc assemblies

0020	ST254	Handle deep-well pumps
1	K365	Adjust deep-well turbine pump impellers
2	K367	Adjust pump coupling alignments
3	K368	Adjust pump output pressures
4	K381	Repair deep-well turbine pumps
5	K384	Repair mechanical seals

0021	ST269	Overhaul manual valves
1	J356	Overhaul ball valves
2	J357	Overhaul butterfly valves
3	J358	Overhaul double block and bleed valves

0021	ST269	Overhaul manual valves (Continued)
4	J359	Overhaul gate valves
5	J360	Overhaul globe valves
6	J361	Overhaul nonlubricated plug valves

0022	ST219	Install or remove service station pump assemblies
1	M425	Install or remove service station meter assembly packings
2	M426	Install or remove service station pump assembly packings or seals
3	M431	Install or remove service station pump shaft mechanical seals
4	M432	Install or remove service station pump unit lights
5	M433	Install or remove service station self-contained pumps
6	M434	Install or remove service station self-contained unit foot valves
7	M435	Install or remove service station tank gauging hatch covers
8	M436	Install or remove service station tank spill containment devices
9	M437	Install or remove submersible service station pumps

0023	ST152	Maintain leak detection systems
1	G211	Clean leak detection systems
2	G229	Install or remove leak detection system components
3	G231	Operationally inspect leak detection systems
4	G232	Repair leak detection systems
5	G238	Troubleshoot leak detection systems

0024	ST259	Establish work assignments/procedures
1	A2	Assign personnel to work areas or duty positions
2	A12	Determine or establish logistics requirements, such as personnel, equipment, tools, parts, supplies, or workspace
3	A14	Determine or establish work assignments or priorities
4	A16	Develop or establish work methods or procedures
5	A17	Develop or establish work schedules
6	A63	Schedule work assignments or priorities

0025	ST230	Directly supervise trainee/training
1	A22	Direct training functions
2	A49	Inspect personnel for compliance with military standards
3	A65	Supervise military personnel
4	B79	Counsel trainees on training progress
5	B80	Determine training requirements
6	B90	Maintain training records or files

0026	ST252	Establish and evaluate personnel standards
1	A10	Conduct supervisory performance feedback sessions
2	A11	Counsel subordinates concerning personal matters
3	A28	Establish performance standards for subordinates
4	A40	Evaluate personnel for compliance with performance standards
5	A41	Evaluate personnel for promotion, demotion, reclassification, or special awards
6	A50	Interpret policies, directives, or procedures for subordinates
7	A69	Write performance reports or supervisory appraisals
8	A70	Write recommendations for awards or decorations
9	B86	Evaluate personnel to determine training needs
10	B87	Evaluate progress of trainees
11	B92	Plan or schedule training

0027	ST231	Produce training schedules, materials, plans
1	B83	Develop training materials or aids
2	B84	Develop training programs, plans, or procedures
3	B85	Evaluate effectiveness of training programs, plans, or procedures
4	B94	Procure training aids, space, or equipment
5	B95	Schedule personnel for training

0028	ST220	Evaluate logistic requirements/use of equipment/tools/supplies
1	A29	Establish procedures for accountability of equipment, tools, parts, or supplies
2	A37	Evaluate logistics requirements, such as personnel, equipment, tools, parts, supplies, or workspace
3	A38	Evaluate maintenance or utilization of equipment, tools, parts, supplies, or workspace
4	A44	Evaluate work schedules
5	A45	Evaluate workload requirements
6	A55	Plan equipment or facility maintenance requirements

0029	ST227	Supervise or coordinate tank cleaning inspections/activities
1	F163	Conduct tank-entry supervisor safety briefings
2	F165	Coordinate air respirator equipment inspections with bioenvironmental engineers
3	F166	Coordinate disposal of sludge with appropriate agencies
4	F167	Coordinate tank cleaning procedures with appropriate agencies
5	F168	Coordinate tank repairs or modifications with major commands
6	F202	Perform tank cleaning supervisor duties

0030	GP001	Participate in or transport equipment for deployment
1	R524	Participate in convoy exercises
2	R533	Transport mobility or contingency equipment to or from deployed locations

0031	GP002	Inspect general safety equipment
1	G225	Inspect fire extinguishers
2	G226	Inspect portable eye washers
0032	GP003	Inspect automatic valve bodies or position indicators
1	I298	Inspect automatic valve main valve bodies
2	I299	Inspect valve position indicators (VPIs)
0033	GP004	Operationally inspect or pressure-test pipelines
1	L390	Hydrostatically pressure-test pipeline systems
2	L397	Operationally inspect air eliminators
3	L398	Operationally inspect pipeline pressure-relief valves
0034	GP005	Repair fuel system counters or shutoffs
1	H269	Install or remove meter registers or counters
2	H289	Repair high-level shutoffs
3	H290	Repair low-level shutoffs
4	H291	Repair meter registers or counters
0035	GP006	Inspect storage tank components
1	F173	Inspect automatic tank gauge floats
2	F174	Inspect blowers or eductors
3	F183	Inspect tank interiors for corrosion, holes, or pits
4	F184	Inspect tank sumps
5	F186	Inspect underground storage tank low-level or high-level floats
0036	GP007	Perform tank cleaning duties
1	F169	Cordon off tank cleaning areas
2	F198	Perform tank cleaning accessway observer duties
3	F199	Perform tank cleaning air regulator operator duties
4	F200	Perform tank cleaning backup safety duties
5	F201	Perform tank cleaning sludge handler duties
6	F203	Perform tank cleaning worker duties
0037	GP008	Troubleshoot or repair pipeline malfunctions
1	L388	Detect pipeline leaks
2	L395	Install or remove pipes
3	L413	Troubleshoot pipeline malfunctions

0038	GP009	Perform hazardous waste/fuel-spill/sludge activities
1	F209	Transport sludge containers to hazardous storage areas
2	G210	Calibrate vapor indicators, such as Bacharach 514M
3	G213	Clean up fuel spills with pneumatic pumps
4	G219	Coordinate disposal of hazardous waste, other than sludge, with appropriate agencies
5	G233	Respond to base-wide fuel spills
6	G237	Transport hazardous waste, other than sludge, to hazardous storage

0039	GP010	Repair service station valves/meters/motors
1	M423	Install or remove service station emergency-shutoff valves
2	M427	Install or remove service station pump assembly pulleys or drive belts
3	M429	Install or remove service station pump meters
4	M430	Install or remove service station pump motors
5	M438	Lubricate service station meter registers or counters

0040	GP011	Repair hytrols/powertools/solenoids
1	I339	Repair powertools
2	I344	Repair solenoids
3	I345	Repair three-way hytrols

0041	GP012	Overhaul pipeline couplers
1	L401	Overhaul Aeroquip couplers
2	L403	Overhaul Carter couplers
3	L404	Overhaul CLA-VAL couplers
4	L406	Overhaul OPW couplers

0042	GP013	Maintain tank gauge heads
1	H251	Clean tank gauge heads
2	H261	Inspect tank gauge heads
3	H277	Lubricate tank gauge heads

0043	GP014	Control for fuel spills
1	G221	Develop fuel spill clean up procedures
2	G222	Evaluate fuel spill clean up procedures
3	G223	Identify classes of fuel spills
4	G224	Identify contents or label recovery drums with Federal Environmental Protection Agency (EPA) labels
5	G227	Install booms on waterways

0044	GP015	Clean-up fuel spills
1	G214	Clean up fuel spills with suction trucks
2	G215	Clean up fuel spills with vacuums

0045	GP016	Inspect or maintain electrical wiring/contacts
1	Q480	Clean electrical contacts
2	Q481	Connect or disconnect electrical motor wiring
3	Q483	Inspect electrical contacts
4	Q486	Inspect wiring, conduits, or fuse boxes
5	Q489	Install or remove electrical motors

0046	GP017	Perform electrical tests
1	Q503	Perform amperage tests
2	Q504	Perform continuity checks of electrical circuits
3	Q505	Perform resistance tests
4	Q507	Perform voltage tests

0047	GP018	Interpret schematics
1	Q496	Interpret electrical schematics
2	Q497	Interpret mechanical schematics

0048	GP019	Inspect or repair electrical components/controls
1	Q482	Inspect cathodic protection components
2	Q484	Inspect hydrant system electrical controls
3	Q485	Inspect starters, contactors, or circuits
4	Q487	Install or remove automatic valve solenoid coils
5	Q488	Install or remove disconnect switches
6	Q490	Install or remove electrical relays
7	Q491	Install or remove emergency-stop switches
8	Q492	Install or remove fuse boxes
9	Q493	Install or remove magnetic starters
10	Q494	Install or remove pump circuit breakers
11	Q495	Install or remove pump control switches
12	Q498	Locate information in National Electrical Codes
13	Q499	Measure service station pump assembly line voltages
14	Q500	Operationally inspect disconnect switches
15	Q501	Operationally inspect pump control switches
16	Q502	Operationally inspect transformers
17	Q508	Repair emergency-stop switches
18	Q509	Repair magnetic starters
19	Q510	Rewire electrical motors
20	Q511	Troubleshoot electrical circuits or components, other than PLC

0049	GP020	Coordinate equipment maintenance or needs
1	D108	Coordinate maintenance of liquid fuel systems, other than cleaning, with appropriate agencies
2	D109	Coordinate maintenance of support equipment with appropriate agencies
3	D110	Coordinate supply-related matters with appropriate agencies
4	D112	Evaluate serviceability of equipment, tools, parts, or supplies
5	D113	Identify and report equipment or supply problems
6	D116	Initiate requisitions for equipment, tools, parts, or supplies
7	D117	Inventory equipment, tools, parts, or supplies
8	D125	Pick up or deliver equipment, tools, parts, or supplies
9	D126	Store equipment, tools, parts, or supplies

0050	GP021	Maintain administrative functions
1	A21	Direct administrative functions
2	A26	Establish administrative files, such as correspondence files
3	C100	Maintain administrative files

0051	GP022	Handle confined-space entry administration
1	G216	Conduct confined-space entry briefings, other than tank-entry supervisor briefings
2	G218	Coordinate confined-space entry permits with appropriate agencies

0052	GP023	Handle accidents/incidents/security programs
1	A27	Establish organizational policies, such as operating instructions or standard operating procedures
2	A30	Evaluate accident or incident reports
3	A32	Evaluate inspection report findings or inspection procedures
4	A51	Investigate accidents or incidents
5	A58	Plan safety or security programs
6	C98	Complete accident or incident reports

0053	GP024	Conduct training
1	A8	Conduct staff assistance visits, inspections, or audits
2	B76	Conduct formal course classroom training
3	B81	Develop formal course curricula, plans of instruction, or specialty training standards
4	B82	Develop performance tests
5	B89	Inspect training materials or aids
6	B91	Personalize lesson plans
7	B96	Write test questions
8	C97	Compile data for records, reports, logs, or trend analyses

0054	Tasks not referenced	
1	A1	Annotate time and attendance sheets for civilian employees
2	A3	Assign sponsors for newly assigned personnel
3	A4	Complete USAF Graduate Evaluation Program forms or questionnaires
4	A5	Conduct general meetings, such as staff meetings, briefings, conferences, or workshops
5	A6	Conduct safety inspections of equipment or facilities
6	A7	Conduct self-inspections or self-assessments
7	A9	Conduct supervisory orientations for newly assigned personnel
8	A13	Determine or establish publication requirements
9	A15	Develop inputs to mobility, contingency, disaster preparedness, or unit emergency or alert plans
10	A18	Develop organizational or functional charts
11	A19	Develop resource protection programs
12	A20	Develop self-inspection or self-assessment program checklists
13	A23	Draft agenda for general meetings, such as staff meetings, briefings, conferences, or workshops
14	A24	Draft budget requirements
15	A25	Establish access lists
16	A31	Evaluate budget requirements
17	A33	Evaluate job hazards or compliance with Air Force Occupational Safety and Health (AFOSH) Program
18	A34	Evaluate job or position descriptions
19	A35	Evaluate job-related suggestions
20	A36	Evaluate layouts of facilities
21	A39	Evaluate mobility, contingency, disaster preparedness, or unit emergency or alert plans
22	A42	Evaluate procedures for storage, inventory, or inspection of property items
23	A43	Evaluate safety or security programs
24	A46	Indorse performance reports or supervisory appraisals
25	A47	Initiate actions required due to substandard performance of personnel
26	A48	Initiate personnel action requests
27	A52	Participate in general meetings, such as staff meetings, briefings, conferences, or workshops, other than conducting
28	A53	Plan briefings, conferences, or workshops
29	A54	Plan deployments of equipment or personnel
30	A56	Plan equipment replacement programs
31	A57	Plan layouts of facilities
32	A59	Plan self-inspection or self-assessment programs
33	A60	Review drafts of regulations, manuals, or other directives
34	A61	Schedule personnel for temporary duty (TDY) assignments, leaves, or passes
35	A62	Schedule staff assistance visits, inspections, or audits
36	A64	Supervise civilian employees
37	A66	Update contingency plans, mobility plans, or base support plans
38	A67	Write inspection reports
39	A68	Write job or position descriptions
40	A71	Write replies to inspection reports
41	A72	Write staff studies, surveys, or routine reports, other than training or inspection reports
42	B73	Administer or score tests

0054	Tasks not referenced (Continued)	
43	B74	Assign formal course instructors or on-the-job training (OJT) trainers or certifiers
44	B75	Brief organizational personnel concerning training programs matters
45	B77	Conduct OJT
46	B78	Conduct training conferences, briefings, or debriefings
47	B88	Evaluate training requirements for instructors
48	B93	Prepare job qualification standards (JQSs)
49	C99	Initiate or maintain standby rosters or workcenter pyramid recall rosters
50	C101	Maintain or update status indicators, such as boards, graphs, or charts
51	C102	Maintain publication libraries, other than technical order libraries
52	C103	Maintain technical order libraries
53	C104	Maintain technical order operating lists
54	C105	Review publishing bulletins
55	C106	Review technical order changes
56	C107	Write minutes of briefings, conferences, or meetings
57	D111	Develop equipment checklists
58	D114	Initiate documentation to turn in excess or surplus property
59	D115	Initiate letters of justification for supply-related matters
60	D118	Issue or log turn-ins of equipment, tools, parts, or supplies
61	D119	Maintain benchstock parts or equipment levels
62	D120	Maintain daily due-out listings
63	D121	Maintain documentation on items requiring periodic inspections
64	D122	Maintain inventories or records of special equipment or spare parts
65	D123	Maintain organizational equipment or supply records, such as custodian authorization/custody receipt listings
66	D124	Maintain precision measurement equipment calibration schedules
67	E128	Bend stainless steel tubing
68	E135	Cut pipes with power cutters
69	E136	Cut stainless steel tubing
70	E137	Cut stencils
71	E138	Fabricate stencils
72	E148	Install or remove product recovery systems
73	E153	Operationally inspect fuel system surge arresters
74	E154	Operationally inspect oil-water separators
75	E157	Remove existing products from fuel storage or transmission components
76	F160	Adjust automatic tank gauging systems, such as tape gauges
77	F164	Control tank flow rates when returning tanks to service
78	F171	Hydrostatically test roof-drain lines on floating-roof tanks
79	F175	Inspect floating-roof pantographic hangers
80	F176	Inspect floating-roof tank or floating-pan seals
81	F177	Inspect gauging hatches
82	F180	Inspect roof drains
83	F181	Inspect tank antifreeze valves
84	F182	Inspect tank fuse-link valves
85	F185	Inspect underground storage tank ladders
86	F187	Inspect underground storage tank pump screens
87	F188	Install or remove blowers or eductors

88	F191	Install or remove roof vents
89	F192	Install or remove roof-drain pipes or components
90	F193	Install or remove tank gauge floats
91	F194	Install or remove weights on pantographic hangers
92	F195	Interpret as-built drawings
93	F196	Isolate cathodic protection rectifiers
94	F197	Load sludge into containers
95	F204	Perform tank floor leak checks with vacuum boxes
96	F205	Perform vapor checks on roof compartments of double-deck floating-roof tanks
97	F206	Position adjustable roof legs
98	F207	Repack roof-drain swivel joints
99	F208	Rig blocks and tackles
100	G217	Construct underflow dams
101	G220	Coordinate draining of dikes with appropriate agencies
102	G228	Install inflatable pipe plugs
103	G230	Monitor tank tightness contracts
104	G234	Separate waste fuels from water with oil-water separators
105	G235	Separate waste fuels from water, other than with oil-water separators
106	G236	Service portable eye washers
107	H241	Adjust or calibrate differential pressure flow switches
108	H242	Adjust or calibrate differential pressure transmitters
109	H244	Assist in setting hydrant hose truck or pantographic pressure controls or valves
110	H246	Calibrate fuel dispensing meters, other than service station pump dispensing unit meters
111	H247	Clean automatic bleeder vents
112	H248	Clean flow indicators
113	H249	Clean meter registers or counters
114	H250	Clean pressure and flow recorders for pressurized hydrant systems
115	H252	Clean tank vents
116	H253	Convert tank level readings to gallons with gauging charts
117	H254	Fill roof drains with antifreeze
118	H255	Inspect aboveground tank seals, other than floating-roof or floating-pan seals
119	H256	Inspect antirotation devices
120	H257	Inspect automatic tank gauging systems, such as tape gauges
121	H258	Inspect floating-roof tanks
122	H259	Inspect hydrant outlet fuse-link valves
123	H260	Inspect pressure and flow recorders for pressurized hydrant systems
124	H262	Inspect tank vents
125	H263	Install or remove automatic tank gauging systems, such as tape gauges
126	H264	Install or remove floating-roof seals or floating-pan seals
127	H265	Install or remove flow indicators
128	H266	Install or remove fuse-link valves
129	H267	Install or remove high-level shutoffs
130	H268	Install or remove low-level shutoffs
131	H270	Install or remove pressure gauges
132	H271	Install or remove programmable logic computer (PLC) batteries

133	H272	Install or remove storage tank grounding clips or wiring
134	H273	Install or remove tank vents
135	H274	Join pipes with bolted flanges
136	H275	Join pipes with threaded fittings
137	H276	Join pipes with victaulic couplings
138	H278	Operationally inspect flow indicators
139	H284	Operationally inspect pressurized system automatic functions
140	H285	Paint identification markings on tanks or pipelines
141	H286	Repair aboveground tank seals
142	H287	Repair automatic tank gauging systems, such as tape gauges
143	H288	Repair flow indicators
144	H292	Troubleshoot PLC controls
145	I293	Adjust excess flow shut-off controls
146	I300	Inspect Venturies
147	I316	Install or remove Venturies
148	J346	Adjust packing glands on manual valves
149	J348	Install or remove handwheels
150	J352	Lubricate lubricated plug valves
151	J353	Lubricate manual valve gear mechanisms
152	J362	Remove lubricated plug valves
153	K369	Adjust tri-rotor pump packing glands
154	K370	Clean deep-well turbine ratchets
155	K373	Install or remove pump bearings
156	K377	Overhaul centrifugal pumps
157	K378	Overhaul gear pumps
158	K379	Overhaul rotary-vane pumps
159	K380	Overhaul tri-rotor pumps
160	K382	Repair deep-well turbine ratchets
161	K385	Repair pump coupling alignments
162	K386	Repair tri-rotor pump packing glands
163	L387	Clean pipeline interiors
164	L389	Flush pipelines
165	L393	Install or remove bleeder connections
166	L394	Install or remove hydrant outlets
167	L396	Install or remove water sump pump components
168	L399	Operationally inspect pit vent systems
169	L400	Operationally inspect water sump pumps
170	L402	Overhaul Buckeye couplers
171	L405	Overhaul OCV couplers
172	L407	Overhaul Parker couplers
173	L408	Overhaul Philadelphia couplers
174	L409	Overhaul Theim couplers
175	L410	Patch pipelines
176	L411	Repair water sump pumps
177	M414	Adjust automatic resets for counter heads
178	M415	Adjust service station electrical motor control assemblies

0054 Tasks not referenced (Continued)

179	M418	Install or remove automatic resets for counter heads
180	M419	Install or remove cotter pins or keys in service station pump reset shafts
181	M420	Install or remove glass in service station pumps
182	M443	Operationally inspect service station vapor-recovery systems
183	M445	Repair service station emergency-shutoff valves
184	N448	Hydrostatically pressure-test hoses
185	N451	Inspect insulated rail joints of railroad track spurs
186	N452	Inspect latching mechanisms on bottom loader arms
187	N454	Inspect vacuum pressure gauges
188	N457	Install or remove vacuum pressure gauges
189	N461	Operationally inspect vacuum breakers
190	N462	Overhaul quick-closing valves
191	O467	Clean deactivated pumps, filter separators, or meters
192	O468	Coat exposed bare metal with oil
193	O469	Disconnect adjoining piping from storage tanks
194	O473	Foam fill or nitrogen fill underground abandoned pipelines
195	O474	Paint deactivated pumps, filter separators, or meters
196	O475	Remove fuel storage tanks
197	P476	Adjust portable or air-transportable fueling system components
198	P477	Assemble portable fueling systems
199	P478	Install or remove bladder tanks on portable or air-transportable fueling systems
200	P479	Operationally inspect portable or air-transportable fueling systems
201	Q506	Perform tag-out or lock-out procedures
202	R512	Assemble rapid utility repair kits (RURKs)
203	R514	Dig trenches
204	R521	Monitor mobility deployment kits
205	R522	Operationally inspect RURKs
206	R523	Pack tent heaters
207	R530	Prepare sites at deployed locations, such as cutting grass or removing snow

APPENDIX C

EQUIPMENT BY OPERATIONAL BASE MATRICES

THIS PAGE INTENTIONALLY LEFT BLANK

TABLE 1C
AFSC 3E4X2 ACTIVE DUTY
BASE x EQUIPMENT

BASE	NONE	JP-10 ALCM System	Mechanical Systems	Modified Panero	Modified Pritchard	Original Panero	Original Pritchard	Type III	Type IV	Type V	Type VI	Other
Altus AFB			x		x			x				
Andrews AFB		x					x					
Aviano AB IT		x					x					x
Barksdale AFB		x	x	x	x			x				
Beale AFB			x		x							
Cannon AFB			x									
Columbus AFB			x		x							
Davis-Monthan AFB			x			x						x
Diego Garcia Island								x				
Dover AFB			x					x				
Dyess AFB								x				
Edwards AFB			x		x			x				
Eglin AFB			x	x	x			x	x			
Eielson AFB			x	x				x				
Ellsworth AFB			x	x				x				
Elmendorf AFB			x	x				x				
Fairchild AFB		x	x	x				x				
FE Warren AFB			x									
Grand Forks AFB			x		x	x		x				
Hanscom AFB			x									
Hickam AFB			x		x		x	x				
Hill AFB		x	x									
Holloman AFB			x						x	x		
Howard AFB PA			x		x							
Kadena AB JA			x	x	x	x	x	x	x	x		
Kelly AFB			x		x		x	x				
Kirtland AFB			x									
Kunsan AB KO			x					x	x			
Langley AFB			x	x								
Little Rock AFB			x		x		x					
Luke AFB			x									

TABLE 1C
AFSC 3E4X2 ACTIVE DUTY
BASE x EQUIPMENT

BASE	NONE	JP-10 ALCM System	Mechanical Systems	Modified Panero	Modified Pritchard	Original Panero	Original Pritchard	Type III	Type IV	Type V	Type VI	Other
MacDill AFB				x	x							
Malmstrom AFB			x					x				
McChord AFB			x	x	x	x	x	x				
McClellan AFB			x									
McConnell AFB			x					x				
McGuire AFB							x		x			
Misawa AB JA									x			
Moody AFB			x									x
Mountain Home AFB			x									
Nellis AFB			x									
Offutt AFB			x	x	x		x					
Osan AB KO			x						x			
Patrick AFB			x									
Peterson AFB			x									
Pope AFB							x	x				
RAF Lakenheath			x									
Ramstein AB GE			x					x	x			
Reese AFB			x									
Seymour Johnson AFB					x			x				
Sheppard AFB			x					x				
Spangdahlem AB GE			x					x	x	x	x	
Stuttgart AB GE				x								
Tinker AFB		x	x		x		x	x				
Travis AFB			x	x	x	x	x	x				
Tyndall AFB			x									
Vandenberg AFB			x									
Whiteman AFB			x					x		x		
Wright-Patterson AFB			x	x	x			x				
Yokota AB JA			x	x		x	x	x				

TABLE 2C
AFSC 2A5X3 GUARD
BASE x EQUIPMENT

BASE	NONE	JP-10 ALCM System	Mechanical Systems	Modified Panero	Modified Pritchard	Original Panero	Original Pritchard	Type III	Type IV	Type V	Type VI	Other
Bangor IAP								x				
Barnes Municipal								x				
Battle Creek			x					x				
Birmingham Aprt			x					x				
Burlington IAP				x								
Camp Murray AIN	x											
Charlotte Douglas IAP			x									
Cheyenne Municipal			x									
Des Moines IAP			x									
Duluth IAP			x									
Eastover			x									
Fairchild AFB		x	x	x			x					
Forbes Field	x											
Fresno Air Terminal			x									
Ft Smith Municipal			x									
Ft Wayne IAP												x
General Mitchell IAP								x				
Grt Pittsburgh ANG								x				
Hancock Field			x									
Harrisburg IAP	x											
Hector IAP			x									
Hickam AFB	x											
Hulman Regional			x									
Joe Foss Field			x									
Key Field			x					x				
Kirtland AFB			x									
March AFB	x											
Maxwell AFB	x											
McConnell AFB								x				
McGuire AFB	x											
Memphis IAP								x				

TABLE 2C
AFSC 2A5X3 GUARD
BASE x EQUIPMENT

BASE	NONE	JP-10 ALCM System	Mechanical Systems	Modified Panero	Modified Pritchard	Original Panero	Original Pritchard	Type III	Type IV	Type V	Type VI	Other
Milwaukee WI			x					x				
Minnesota-St Paul IAP	x											
Otis ANG			x					x				
Portland IAP			x									
Quonset State Aprt	x											
Reno-Tahoe IAP						x						
Richard E. Byrd Field			x									
Rickenbacker ANG					x							
Salt Lake IAP			x					x				
Savannah IAP			x									
Schenectade Aprt			x									
Sioux Gateway IAP				x		x						
Sky Harbor IAP				x				x				
Stewart IAP								x				
Toledo Express			x									
Volk Field WI			x									

TABLE 3C
AFSC 3E4X2 RESERVE
BASE x EQUIPMENT

BASE	NONE	JP-10 ALCM System	Mechanical Systems	Modified Panero	Modified Pritchard	Original Panero	Original Pritchard	Type III	Type IV	Type V	Type VI	Other
Andrews AFB	x											
Carswell ARB	x											
Charleston AFB								x	x			
Dobbins ARB				x								
Dover AFB	x											
General Mitchell ARS	x											
Grisson AFB					x							
Hickam AFB					x			x				
Hill AFB			x									
Keesler AFB	x											
Luke AFB			x									
McChord AFB							x		x			
Peterson AFB	x											
Pittsburgh ARS/IAP			x									
Portland IAP								x				
Tinker AFB	x											
Travis AFB				x	x			x				
Westover AFB					x			x				
Wright-Patterson AFB	x											
Youngstown-Warren ARS	x											

THIS PAGE INTENTIONALLY LEFT BLANK