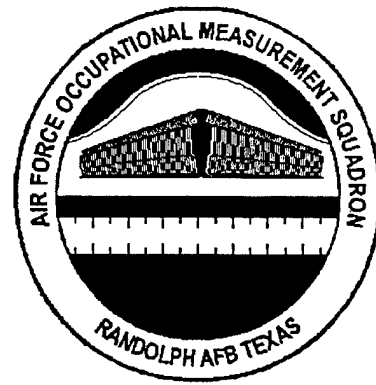


DTIC



UNITED STATES AIR FORCE

OCCUPATIONAL SURVEY REPORT

19980116 113

**AIRCRAFT STRUCTURAL
MAINTENANCE**

AFSC 2A7X3

OSSN 2281

DECEMBER 1997

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

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PREFACE

This report presents the results of an Air Force occupational survey of the Air Force Specialty Code 2A7X3, Aircraft Structural Maintenance, career ladder. Authority for conducting occupational surveys is contained in Air Force Instruction 36-2623. Copies of this report and its associated computer products are distributed to the Air Force career ladder functional manager, the operational training location, all major using commands, and any other interested operations and training officials.

The survey instrument was developed by Second Lieutenant Christopher D. Gilliam, Inventory Development Specialist. Captain Daniel J. Watola, Occupational Analyst, analyzed the data and wrote the final report. This report was approved by Lieutenant Colonel Roger W. Barnes, Chief, Airmen Analysis Section, Occupational Analysis Flight, Air Force Occupational Measurement Squadron. Mr. Tyrone Hill provided computer programming support and Mr. Richard G. Ramos provided administrative support.

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

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SUMMARY OF RESULTS

1. **Survey Coverage:** The Air Force Specialty Code (AFSC) 2A7X3, Aircraft Structural Maintenance (ASM), career ladder was surveyed to obtain occupational data for use in evaluating and revising current career ladder documents and training programs. Survey results are based on responses from 2,958 ASM personnel, representing 61 percent of the total assigned population (as of March 1997). Three-, 5-, and 7-skill level personnel from all major commands, the Air Force Reserve Command (AFRC), and Air National Guard (ANG) are included in this survey.

2. **Career Ladder Structure:** Three clusters and six jobs were identified in the career ladder structure analysis. The ASM Cluster represents the core job of the ASM career ladder, accounting for 61 percent of the survey sample. The remaining personnel are distributed among the Corrosion Control and Supervisory clusters, and Tool Crib, F-117A Low Observable (LO), B-2A LO, Quality Assurance, Training, and Composite jobs. The majority of AFRC and ANG personnel are assigned to the ASM Cluster.

3. **Career Ladder Progression:** Nearly all active duty 3-skill level personnel perform only technical duties. Although active duty 5-skill level personnel perform primarily technical duties, they spend a small portion of their time engaged in supervisory or training duties. Active duty 7-skill level personnel also perform primarily technical duties, but devote nearly 25 percent of their time to management, supervisory, and training duties. While a similar pattern of career ladder progression exists among AFRC and ANG personnel, manpower limitations require they perform technical duties at higher skill levels than their active duty counterparts.

4. **Training Analysis:** A match of occupational survey data to the AFSC 2A7X3 Specialty Training Standard (STS) generally provided support for matched STS items. Items not supported by occupational data are recommended for deletion. Revised proficiency codes are recommended for items matched to tasks performed by a low percentage of first-enlistment members. Also, unmatched tasks performed by a high percentage of members are recommended for inclusion in the STS.

5. **Job Satisfaction Analysis:** Overall, ASM personnel are content with their jobs. Job satisfaction is slightly lower than personnel in comparative career ladders and lower than the 1993 ASM sample, especially among first-enlistment personnel. Among job groups, only F-117A LO personnel expressed low job satisfaction.

6. **Implications:** The career ladder structure was found to be generally stable when compared to the previous study. The introduction of the LO and Composite jobs reflect the increasing use of nontraditional airframe skins and coatings. ASM career ladder progression is typical of other career ladders, with personnel transitioning from technical to managerial and supervisory roles with increasing experience. The training analysis concluded the STS was supported overall. However, several items were identified for review by training personnel as candidates for revision. Finally, ASM job satisfaction was found to be good, with the exception of F-117A LO personnel.

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**OCCUPATIONAL SURVEY REPORT (OSR)
AIRCRAFT STRUCTURAL MAINTENANCE CAREER LADDER
(AFSC 2A7X3)**

INTRODUCTION

This report presents the results of an occupational survey of the AFSC 2A7X3, Aircraft Structural Maintenance (ASM), career ladder conducted by the Occupational Analysis Flight, Air Force Occupational Measurement Squadron. This survey was conducted as part of a 5-year survey cycle; the previous survey was completed in April 1993.

Background

This OSR can assist training personnel in updating operational training programs and career ladder documents. Furthermore, survey data can be reviewed to assess the need for specialized training for major command (MAJCOM) or skill-level groups.

According to AFMAN 36-2108 *Airman Classification* (dated 31 October 1994), AFSC 2A7X3 personnel design, repair, maintain, fabricate, inspect, treat for corrosion, and apply protective coatings on metals, plastics, tubing, cables, fiberglass, and composites for aerospace weapons systems and related support equipment. Entry into the career ladder currently requires the candidate score a minimum of 51 in the mechanical category of the Armed Services Vocational Aptitude Battery, be able to lift no less than 60 pounds (strength factor J), and possess normal color vision. In order to be awarded the 3-skill level, candidates must complete the entry-level course, J3ABP2A7X33-001 Aircraft Structural Maintenance Apprentice, taught at the Naval Air Technical Training Center, Naval Air Station (NAS) Pensacola, Pensacola, FL. This 70-day course includes principles, procedures, and techniques used for structural repair of the airframe and metal components of aircraft; safety; Air Force publications; layout of repairs; metal cutting and forming equipment; riveting and riveting equipment; repair of metal bonded honeycomb and advanced composite structures; fabrication of tubing assemblies; dimpling; repair of aluminum and steel structures; inspection and removal of corrosion; removal and application of coatings; application of markings; maintenance management; and use of tools and equipment.

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SURVEY METHODOLOGY

Inventory Development

The data collection instrument used for this occupational survey was USAF Job Inventory (JI) Occupational Survey Study Number 2281 (dated February 1997). The JI is a comprehensive list of tasks performed by ASM personnel. In developing the JI, a tentative task list was prepared after reviewing pertinent career ladder publications, directives, and the previous study's JI and OSR. This list was then validated by 65 subject-matter experts located at 8 operational maintenance and 2 operational training locations. These locations included:

LOCATION	UNIT VISITED
Barksdale AFB LA	2 MXS/LGMF
Charleston AFB SC	437 MXS/LGMFC
Dyess AFB TX	7 MXS/LGMFS
Eglin AFB FL	33 MXS/MFS
Holloman AFB NM	49 MX/LGMFS
Hurlburt Field FL	HQ AFSOC/LGMW
NAS Memphis TN*	361 TRS Det 2
Sheppard AFB TX	361 TRS/TSIM
Travis AFB CA	60 EMS/LG-LOP
Whiteman AFB MO	509 MXS/LGMFS

*This unit is currently located at NAS Pensacola FL

The final JI consists of 1,089 tasks grouped under 21 duty titles. It also contains a number of background questions relating to workforce demographics, duty AFSC (DAFSC), time in present job, total active federal military service (TAFMS), job title, work area assigned, job satisfaction, and job resource usage (i.e., tools and materials).

Survey Administration

From March through July 1997, JIs were administered to all eligible ASM personnel. Over 4,570 active duty, Air Force Reserve Command (AFRC), and Air National Guard (ANG) personnel with DAFSCs 2A733, 2A753, and 2A773 received JIs at 190 installations worldwide. Personnel considered ineligible to participate in this survey included, for example, those transitioning to a permanent change of station, those preparing for retirement at the time of the survey, and those who had not been in their present job for at least 6 weeks.

Eligible respondents were first asked to complete an identification and background information section. In the duty-task section, respondents were asked to review the task list and check all tasks performed in their present job. Checked tasks were then rated on a 9-point "relative time spent" scale. A rating of 1 indicated a very small amount of time was spent on the task relative to all others, whereas a rating of 9 indicated a very large amount of time was spent on the task relative to all others. In calculating a relative time spent index for each checked task, the sum of the ratings was assumed to account for 100 percent of the respondent's time on the job. After each respondent's ratings were added, each individual task's time spent rating was divided by the sum of all ratings. This quotient was then multiplied by 100 to determine the relative percent time spent for each task. This procedure permits a comparison of percent members performing and relative percent time spent on tasks and groups of tasks.

Survey Sample

All returned JIs were monitored to ensure the final survey sample is representative of the populations of MAJCOM and paygrade groups. Table 1 lists the percentage distribution of personnel assigned to active duty MAJCOMs, AFRC, or the ANG as of March 1997. Also shown is the percentage distribution of the final survey sample across these groups. The degree of similarity between the two columns of data reflect the degree to which the final sample adequately represents the total population of assigned personnel. In general, the percent of assigned and percent of sample pairs are congruent. However, two anomalies are present in the data. First, the final sample consists of 68 percent active duty personnel as compared to 60 percent of the assigned sample. This apparent increase can be attributed to the effect of the low JI returns from the ANG. Second, the percentage of Air Education and Training Command (AETC) personnel in the final sample is greater than the corresponding percentage of personnel in the assigned sample. Careful investigation has shown that this artifact is the result of the 314th Maintenance Squadron's conversion from Air Combat Command to AETC in April 1997, just 1 month after the percent of assigned figures were calculated and 3 months before the percent of sample figures were calculated. Thus, despite the two anomalies, Table 1 demonstrates that the final survey sample is representative of the population of assigned ASM personnel. Table 2 reveals the final survey sample is representative across paygrades.

TABLE 1

DISTRIBUTION OF AFSC 2A7X3 MEMBERS ACROSS COMPONENTS OR MAJOR COMMANDS

COMPONENT/MAJOR COMMAND	PERCENT OF ASSIGNED*	PERCENT OF SAMPLE
ACTIVE DUTY**		
Air Combat Command	26	27
Air Mobility Command	10	12
Pacific Air Forces	7	7
Air Force Materiel Command	6	8
United States Air Forces in Europe	4	4
Air Education and Training Command	4	7
Air Force Special Operations Command	3	4
Other	***	***
AIR FORCE RESERVE COMMAND	20	19
AIR NATIONAL GUARD	20	13
TOTAL ASSIGNED	4,860	
TOTAL SURVEYED	4,572	
TOTAL SAMPLE	2,958	
PERCENT OF ASSIGNED IN SAMPLE	61%	
PERCENT OF SURVEYED IN SAMPLE	65%	

* As of March 1997

** Active duty personnel represent 60 percent of all assigned personnel and 68 percent of the survey sample

*** Less than 1 percent

TABLE 2

DISTRIBUTION AFSC 2A7X3 MEMBERS ACROSS PAYGRADES

PAYGRADE	PERCENT OF ASSIGNED*	PERCENT OF SAMPLE
E-1 - E-3	12	12
E-4	21	21
E-5	35	35
E-6	20	20
E-7	11	11
E-8	1	1
E-9	0	0

*As of March 1997

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 ASM noncommissioned officers (NCOs), generally E-6 or E-7 craftsmen, also completed a second booklet for either Training Emphasis (TE) or Task Difficulty (TD). These booklets were processed separately from the JIs. The resulting data are used in a number of different analyses discussed in greater detail elsewhere in this report.

Training Emphasis (TE). TE is a rating of the amount of emphasis that should be placed on a task taught in entry-level training. Seventy-two senior ASM NCOs were asked to select tasks they felt should be taught to entry-level personnel in some sort of structured training. Structured training is defined as training provided at resident technical schools, field training detachments, mobile training teams, formal on-the-job training (OJT), or any other organized training method. They indicated, on a scale of 1 "extremely low emphasis" to 9 "extremely high emphasis," how much training emphasis these tasks should receive. The rater agreement among these 72 NCOs was high. The average TE rating was 2.60 with a standard deviation of 1.55; thus any task with a TE rating of 4.15 or more demonstrates a high TE.

Task Difficulty (TD). TD is an estimate of the amount of time needed to learn how to perform a task. The 70 senior NCOs who completed TD booklets were asked to rate the difficulty of each task using a 9-point scale, with descriptors ranging from "extremely low difficulty" to "extremely high difficulty." Interrater reliability was high. Ratings were standardized such that tasks have an average difficulty of 5.00 and a standard deviation of 1.00; thus, any task with a TD rating of 6.00 or above is considered difficult to learn.

CAREER LADDER STRUCTURE

The structure of jobs in the ASM career ladder is based on the responses of job incumbents. Each individual in the sample performs a set of tasks called a *Job*. A hierarchical grouping program, which is part of the Comprehensive Occupational Data Analysis Program, creates an individual job description for each respondent using the tasks performed and the average relative time spent on each task. It then compares each individual's job description to every other incumbent's job description, locating the two most similar job descriptions and combining them to form a group job description. In successive iterations, the program adds new members to the initial group or forms new groups if job descriptions become too dissimilar. If there is a substantial degree of similarity between two or more group job descriptions, the program may group these jobs together in a *Cluster*. The jobs and clusters resulting from this hierarchical grouping program define the structure of the career ladder.

Structure Overview

After a careful analysis of the occupational data, three clusters and six jobs were identified. These jobs are listed below, graphically depicted in Figure 1, and described in detail in succeeding paragraphs. The stage number (ST) beside each job title is a computer-generated code number which can be used to reference related data found in the study archives. The sample number (N) reports the number of members within each group. The following results can be used to identify tasks that are specific to jobs, distinguish tasks that are obsolete or not widely performed, and determine training needs for job groups.

- I. AIRCRAFT STRUCTURAL MAINTENANCE CLUSTER (ST159, N=1,803)
- II. CORROSION CONTROL CLUSTER (ST075, N=246)
- III. SUPERVISORY CLUSTER (ST174, N=215)
- IV. TOOL CRIB JOB (ST095, N=66)
- V. F-117A LOW OBSERVABLE JOB (ST333, N=52)
- VI. B-2A LOW OBSERVABLE JOB (ST318, N=48)
- VII. QUALITY ASSURANCE JOB (ST388, N=27)
- VIII. TRAINING JOB (ST276, N=26)
- IX. COMPOSITE JOB (ST245, N=18)

The ASM personnel forming these clusters and jobs account for 83 percent of the survey sample. The remaining 17 percent are classified as "not grouped." Nearly all of these members listed their job titles as "aircraft structural maintenance," "structural maintenance," or "sheet metal." In general, these 461 ungrouped personnel are relatively new active duty and AFRC personnel performing a small number of technical tasks. Due to differences in the tasks these personnel perform relative to the identified groups, they could not be merged with any one identifiable job.

Two tables in this section provide background information about the clusters and jobs. Table 3 displays selected background information including group size, DAFSC, component status, predominant paygrade, average TAFMS, average number of tasks performed, and percentage of members supervising. Table 4 depicts the average relative time spent by members of each job or cluster across each of the career ladder's 21 duties. Additionally, a list of representative tasks performed by members of each job or cluster is provided in Appendix A.

AFSC 2A7X3 AIRCRAFT STRUCTURAL MAINTENANCE JOBS (N=2,958)

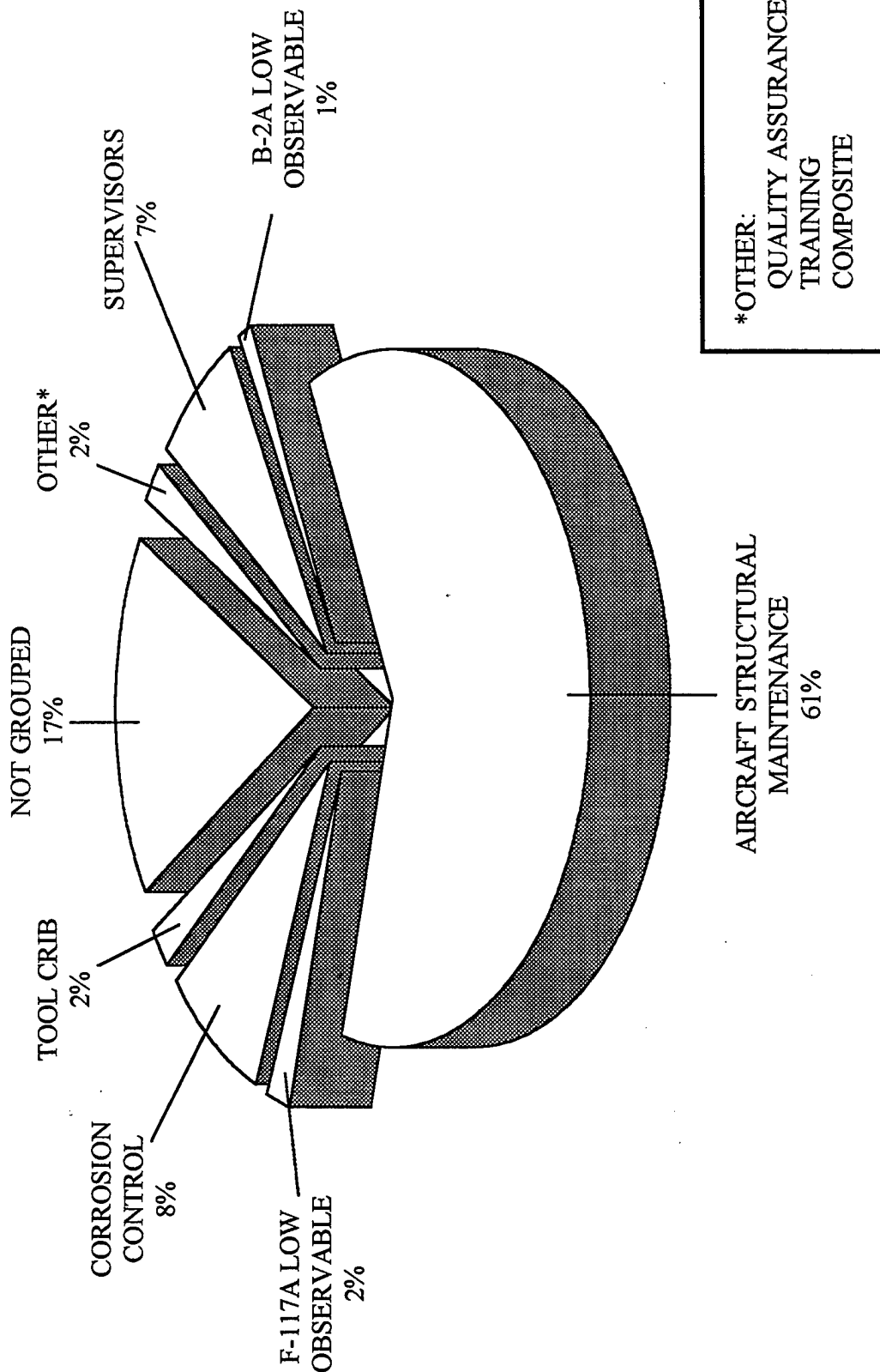


FIGURE 1

TABLE 3

TIME SPENT ON DUTIES ACROSS AFSC 2A7X3 JOB GROUPS
(AVERAGE RELATIVE PERCENT TIME SPENT)

DUTY	AIRCRAFT STRUCTURAL MAINTENANCE CLUSTER (ST159)	CORROSION CONTROL CLUSTER (ST075)	SUPERVISORY CLUSTER (ST174)
A. PERFORMING GENERAL AIRCRAFT STRUCTURAL MAINTENANCE	10	23	2
B. PERFORMING GENERAL AIRCRAFT AND SUPPORT EQUIPMENT INSPECTIONS	5	6	2
C. PERFORMING ENVIRONMENTAL OR SAFETY ACTIVITIES	4	14	2
D. MAINTAINING EQUIPMENT	6	4	1
E. REPAIRING AND REPLACING TRANSPARENT PLASTICS	*	*	*
F. MAINTAINING AIRCRAFT TUBING AND TUBING ASSEMBLIES	5	*	*
G. INSTALLING AND REMOVING FASTENERS	14	2	*
H. REPAIRING, MODIFYING, AND FABRICATING METAL PARTS AND ASSEMBLIES OF AIRFRAME STRUCTURES	17	2	1
I. PERFORMING ADVANCED COMPOSITE STRUCTURAL AND HONEYCOMB CORE REPAIRS	1	*	*
J. PERFORMING FIBERGLASS LAMINATE AND HONEYCOMB CORE REPAIRS	4	*	*
K. PERFORMING METAL BONDED HONEYCOMB CORE REPAIRS	2	*	*
L. PERFORMING MAINTENANCE ON LOW OBSERVABLE MATERIALS	*	*	*
M. REMOVING CORROSION AND PROTECTIVE COATINGS	6	10	*
N. PERFORMING SEALING OR SEALANT ACTIVITIES	4	*	*
O. APPLYING PROTECTIVE COATINGS	7	19	*
P. PERFORMING CORE AUTOMATED MAINTENANCE SYSTEM (CAMS) ACTIVITIES	3	4	3
Q. PERFORMING GENERAL AIRCRAFT OR CROSS UTILIZATION TRAINING (CUT) ACTIVITIES	2	1	*
R. PERFORMING MANAGEMENT AND SUPERVISORY ACTIVITIES	5	7	65
S. PERFORMING TRAINING ACTIVITIES	1	1	6
T. PERFORMING GENERAL ADMINISTRATIVE AND TECHNICAL ORDER SYSTEM ACTIVITIES	*	1	6
U. PERFORMING GENERAL SUPPLY AND EQUIPMENT ACTIVITIES	2	3	5

* Less than 1 percent

NOTE: Due to rounding, columns may not add to 100 percent

TABLE 3 (CONTINUED)

TIME SPENT ON DUTIES ACROSS AFSC 2A7X3 JOB GROUPS
(AVERAGE RELATIVE PERCENT TIME SPENT)

DUTY	TOOL CRIB JOB (ST095)	F-117A LOW OBSERVABLE JOB (ST333)	B-2A LOW OBSERVABLE JOB (ST318)
A. PERFORMING GENERAL AIRCRAFT STRUCTURAL MAINTENANCE	6	7	9
B. PERFORMING GENERAL AIRCRAFT AND SUPPORT EQUIPMENT INSPECTIONS	1	*	2
C. PERFORMING ENVIRONMENTAL OR SAFETY ACTIVITIES	7	2	4
D. MAINTAINING EQUIPMENT	10	*	3
E. REPAIRING AND REPLACING TRANSPARENT PLASTICS	*	0	*
F. MAINTAINING AIRCRAFT TUBING AND TUBING ASSEMBLIES	*	0	*
G. INSTALLING AND REMOVING FASTENERS	1	*	4
H. REPAIRING, MODIFYING, AND FABRICATING METAL PARTS AND ASSEMBLIES OF AIRFRAME STRUCTURES	1	*	4
I. PERFORMING ADVANCED COMPOSITE STRUCTURAL AND HONEYCOMB CORE REPAIRS	*	3	8
J. PERFORMING FIBERGLASS LAMINATE AND HONEYCOMB CORE REPAIRS	*	*	2
K. PERFORMING METAL BONDED HONEYCOMB CORE REPAIRS	*	0	*
L. PERFORMING MAINTENANCE ON LOW OBSERVABLE MATERIALS	*	64	32
M. REMOVING CORROSION AND PROTECTIVE COATINGS	*	*	2
N. PERFORMING SEALING OR SEALANT ACTIVITIES	*	*	2
O. APPLYING PROTECTIVE COATINGS	1	*	7
P. PERFORMING CORE AUTOMATED MAINTENANCE SYSTEM (CAMS) ACTIVITIES	6	5	5
Q. PERFORMING GENERAL AIRCRAFT OR CROSS UTILIZATION TRAINING (CUT) ACTIVITIES	*	*	1
R. PERFORMING MANAGEMENT AND SUPERVISORY ACTIVITIES	16	8	8
S. PERFORMING TRAINING ACTIVITIES	3	2	*
T. PERFORMING GENERAL ADMINISTRATIVE AND TECHNICAL ORDER SYSTEM ACTIVITIES	3	2	2
U. PERFORMING GENERAL SUPPLY AND EQUIPMENT ACTIVITIES	43	3	2

* Less than 1 percent

NOTE: Due to rounding, columns may not add to 100 percent

TABLE 3 (CONTINUED)

TIME SPENT ON DUTIES ACROSS AFSC 2A7X3 JOB GROUPS
(AVERAGE RELATIVE PERCENT TIME SPENT)

DUTY	QUALITY ASSURANCE JOB (ST388)	TRAINING JOB (ST276)	COMPOSITE JOB (ST245)
A. PERFORMING GENERAL AIRCRAFT STRUCTURAL MAINTENANCE	4	2	9
B. PERFORMING GENERAL AIRCRAFT AND SUPPORT EQUIPMENT INSPECTIONS	14	*	*
C. PERFORMING ENVIRONMENTAL OR SAFETY ACTIVITIES	5	1	5
D. MAINTAINING EQUIPMENT	6	*	9
E. REPAIRING AND REPLACING TRANSPARENT PLASTICS	*	0	*
F. MAINTAINING AIRCRAFT TUBING AND TUBING ASSEMBLIES	1	0	*
G. INSTALLING AND REMOVING FASTENERS	6	0	7
H. REPAIRING, MODIFYING, AND FABRICATING METAL PARTS AND ASSEMBLIES OF AIRFRAME STRUCTURES	2	*	9
I. PERFORMING ADVANCED COMPOSITE STRUCTURAL AND HONEYCOMB CORE REPAIRS	*	0	6
J. PERFORMING FIBERGLASS LAMINATE AND HONEYCOMB CORE REPAIRS	2	0	29
K. PERFORMING METAL BONDED HONEYCOMB CORE REPAIRS	*	0	11
L. PERFORMING MAINTENANCE ON LOW OBSERVABLE MATERIALS	3	*	*
M. REMOVING CORROSION AND PROTECTIVE COATINGS	*	0	2
N. PERFORMING SEALING OR SEALANT ACTIVITIES	2	0	3
O. APPLYING PROTECTIVE COATINGS	*	0	*
P. PERFORMING CORE AUTOMATED MAINTENANCE SYSTEM (CAMS) ACTIVITIES	6	8	3
Q. PERFORMING GENERAL AIRCRAFT OR CROSS UTILIZATION TRAINING (CUT) ACTIVITIES	4	*	*
R. PERFORMING MANAGEMENT AND SUPERVISORY ACTIVITIES	30	37	3
S. PERFORMING TRAINING ACTIVITIES	2	40	1
T. PERFORMING GENERAL ADMINISTRATIVE AND TECHNICAL ORDER SYSTEM ACTIVITIES	7	7	*
U. PERFORMING GENERAL SUPPLY AND EQUIPMENT ACTIVITIES	1	2	2

* Less than 1 percent

NOTE: Due to rounding, columns may not add to 100 percent

TABLE 4

SELECTED BACKGROUND DATA FOR AFSC 2A7X3 JOBS

	AIRCRAFT STRUCTURAL MAINTENANCE CLUSTER (ST159)	CORROSION CONTROL CLUSTER (ST075)	SUPERVISORY CLUSTER (ST174)	TOOL CRIB JOB (ST095)	F-117A LOW OBSERVABLE JOB (ST333)
GROUP SIZE	1,803	246	215	66	52
PERCENT OF SAMPLE	61%	8%	7%	2%	2%
PERCENT IN CONUS	87%	76%	82%	83%	100%
DAFSC DISTRIBUTION (PERCENT):					
2A733	15%	27%	0%	6%	33%
2A753	51%	45%	3%	50%	34%
2A773	34%	28%	97%	44%	33%
COMPONENT STATUS (PERCENT):					
ACTIVE DUTY	61%	86%	83%	98%	100%
RESERVE	21%	8%	13%	2%	0%
GUARD	18%	6%	4%	0%	0%
PREDOMINANT PAYGRADE(S)					
TAFMS IN MONTHS (ACTIVE DUTY ONLY)	E-4/E-5/E-6 100	E-4/E-5 99	E-7 212	E-4/E-5/E-6 144	E-3/E-4/E-5 99
PERCENT IN FIRST ENLISTMENT (ACTIVE DUTY ONLY)	28%	34%	0%	9%	33%
AVERAGE NUMBER OF TASKS PERFORMED					
PERCENT SUPERVISING	233 41%	113 47%	119 93%	62 56%	89 48%

NOTE: Due to rounding, columns may not add to 100 percent

TABLE 4 (CONTINUED)

SELECTED BACKGROUND DATA FOR AFSC 2A7X3 JOBS

	B-2A LOW OBSERVABLE JOB (ST318)	QUALITY ASSURANCE JOB (ST388)	TRAINING JOB (ST276)	COMPOSITE JOB (ST245)
GROUP SIZE	44	27	26	18
PERCENT OF SAMPLE	1%	*	*	*
PERCENT IN CONUS	100%	74%	81%	94%
DAFSC DISTRIBUTION (PERCENT):				
2A733	16%	0%	0%	33%
2A753	48%	15%	35%	33%
2A773	36%	85%	65%	33%
COMPONENT STATUS (PERCENT):				
ACTIVE DUTY	100%	89%	88%	83%
RESERVE	0%	11%	12%	11%
GUARD	0%	0%	0%	6%
PREDOMINANT PAYGRADE(S)				
TAFMS IN MONTHS (ACTIVE DUTY ONLY)	E-4/E-5	E-5/E-6	E-6/E-7	E-3E-4/E-5
PERCENT IN FIRST ENLISTMENT (ACTIVE DUTY ONLY)	125 16%	173 0%	180 0%	87 47%
AVERAGE NUMBER OF TASKS PERFORMED				
PERCENT SUPERVISING	230 55%	100 22%	59 65%	110 44%

* Less than 1 percent

NOTE: Due to rounding, columns may not add to 100 percent

Job Descriptions

I. AIRCRAFT STRUCTURAL MAINTENANCE CLUSTER (ST159). This cluster of 1,803 members, or 61 percent of the survey sample, represents the core job of the ASM career ladder. The work performed by members of this cluster can be characterized as either aircraft sheet metal structural (approximately 425 members), combined sheet metal and corrosion control (about 1,300 members), or frontline supervisory (48 members). Personnel forming the ASM Cluster are distinguished from other jobs based on their relative time spent performing tasks related to repairing, modifying, and fabricating metal parts and assemblies of airframe structures (17 percent); installing and removing fasteners (14 percent); and performing general ASM (10 percent). Additionally, these incumbents spend a portion of their time applying protective coatings (7 percent) and removing corrosion and protective coatings (6 percent). Overall, members perform an average of 233 tasks, the largest number of tasks performed by any identified job group, with 134 tasks accounting for 50 percent of their time. Tasks performed by ASM personnel include:

- countersink fastener holes
- drill fastener holes
- cut and trim sheet metal
- cut rivets
- inspect fasteners for flush installation
- stopdrill cracks on sheet metal
- inspect installed nut plates
- install or remove pull-through blind rivets
- remove damaged areas by chain drilling
- wipe down surfaces prior to painting

A majority of personnel in this cluster are 5-skill level (51 percent), about one-third are 7-skill level (34 percent), and the remainder are 3-skill level (15 percent). While most incumbents are active duty (61 percent), a large portion of them are AFRC (21 percent) and ANG (18 percent) personnel. ASM members typically hold the ranks of E-4 through E-6, with an average of 100 months TAFMS. Twenty-eight percent of these members are in their first-enlistment and 41 percent are supervising others.

II. CORROSION CONTROL CLUSTER (ST075). As the second largest job group, the 246 members of this cluster account for 8 percent of the survey sample. These personnel spend their time performing general ASM (23 percent), applying protective coatings (19 percent), performing environmental or safety activities (14 percent), and removing corrosion or protective coatings (10 percent). Although nearly one-fourth of members' time is spent performing general structural maintenance, it is the amount of time they spend in corrosion control activities that distinguish them from their counterparts in the ASM Cluster. As corrosion control specialists,

these incumbents may concentrate on the application or removal of decals or stencils markings, or the application or removal of coatings to include the removal of corrosion. They perform an average of 113 tasks, of which 77 account for 50 percent of their job time. The specialized nature of the Corrosion Control Cluster is exemplified by the following list of tasks most frequently performed by members:

- remove masking materials from surfaces
- apply masking materials to surfaces
- prepare surfaces by hand sanding
- clean personal protective equipment
- change respirator cartridges or pre-filters
- prepare surfaces using pneumatic tools
- apply stencil markings to aircraft or support equipment
- remove decals from aircraft or support equipment
- apply decals to aircraft or support equipment
- prepare surfaces using plastic media blasters

Nearly half of the personnel in this cluster are 5-skill level (45 percent), with the remainder fairly evenly split between the 3- and 7-skill levels (27 and 28 percent respectively). The E-4 and E-5 paygrades predominate among these members, with an average TAFMS of 99 months. Thirty-four percent of these airmen are in their first-enlistment and 47 percent are supervising at least one other member.

III. SUPERVISORY CLUSTER (ST174). This cluster consists of 215 members and accounts for 7 percent of the survey sample. Unlike the technically oriented frontline supervisors present in the ASM Cluster, these dedicated supervisors perform tasks related to management and supervisory activities (65 percent), training activities (6 percent), and general administrative activities (6 percent). Generally, these airmen refer to themselves as ASM section "superintendents," "chiefs," "noncommissioned officers in charge," or "supervisors." Among the average 119 tasks performed by these personnel, 59 tasks account for 50 percent of their time. The top 10 tasks performed by the members of this cluster include:

- write recommendations for awards or decorations
- inspect personnel for compliance with military standards
- supervise military personnel
- counsel subordinates concerning personal matters
- conduct supervisory performance feedback sessions
- participate in general meetings, such as staff meetings, briefings, conferences, or workshops, other than conducting
- write performance reports or supervisory appraisals

interpret policies, directives, or procedures for subordinates
determine or establish work assignments or priorities
assign personnel to work areas or duty positions

As is true in most other career ladders, the role of the supervisor is filled by experienced personnel. Fully 97 percent of these members hold the 7-skill level, with the remaining 3 percent holding the 5-skill level. The predominant paygrade is E-7, with these incumbents possessing the highest average TAFMS of all of the identified job groups (212 months). There are no first-enlistment airmen in this cluster.

IV. TOOL CRIB JOB (ST095). This job consists of 66 airmen accounting for 7 percent of the survey sample. The members of this job group spend the majority of their time performing general supply and equipment activities (43 percent), performing management and supervisory activities (16 percent), and maintaining equipment (10 percent). On average, tool crib personnel perform just 62 tasks, with 32 of these tasks accounting for 50 percent of their time. Tasks performed by tool crib personnel include:

- inventory consolidated tool kits (CTKs)
- maintain CTKs or tool cribs
- inventory equipment, tools, parts, or supplies, other than CTKs
- maintain benchstock parts or equipment levels
- issue or log turn-ins of equipment, tools, parts, or supplies
- store equipment, tools, parts, or supplies
- evaluate serviceability of equipment, tools, parts, or supplies
- pick up or deliver equipment, tools, parts, or supplies
- coordinate supply-related matters with appropriate agencies
- initiate requisitions for equipment, tools, parts, or supplies

One-half of these members hold the 5-skill level, with 44 percent holding the 7-skill level and the remainder holding the 3-skill level. Typically, these incumbents hold the ranks of E-4 through E-6, with an average TAFMS of 144 months. While 9 percent of these members are in their first-enlistment, 56 percent are supervisors.

V. F-117A LOW OBSERVABLE JOB (ST333). The first of two low observable (LO) jobs consist of 52 personnel accounting for just 2 percent of the survey sample. As their job title suggests, these airmen spend the majority of their time performing maintenance on F-117A LO materials (64 percent). These members perform an average of 89 tasks, 39 of which account for over 50 percent of their time spent on the job. Representative tasks performed by these personnel include:

- remove urethane sheet coatings
- apply urethane sheet coatings
- use straight edges for cutting RAM
- apply silicone sheet coatings
- remove silicone sheet coatings
- prepare titanium surfaces for RAM applications
- apply conductive top coatings/putties
- remove edge moldings
- trim putty to meet flushness requirements
- prepare aluminum surfaces for RAM applications

These incumbents are generally evenly split between the 3-, 5-, and 7- skill levels (33, 34, and 33 percent respectively). They are among the youngest within the career ladder, with paygrades predominantly in the E-3 through E-5 range and an average TAFMS of 99 months. All members are active duty and stationed within the continental United States (CONUS). One-third of these personnel are in their first-enlistment and nearly one-half are supervisors.

VI. B-2A LOW OBSERVABLE JOB (ST318). The second LO job consists of 44 personnel accounting for just 1 percent of the survey sample. While these airmen spend 32 percent of their time performing maintenance on B-2A LO materials, they also perform general ASM (9 percent), advanced composite structural and honeycomb core repairs (8 percent), and management and supervisory activities (8 percent). Although personnel in both the B-2A and F-117A LO jobs primarily perform maintenance on LO materials, differences between the two aircraft require their respective maintainers perform different LO maintenance tasks. For example, the LO tasks performed by B-2A personnel involve tapes and compounds, whereas those performed by F-117A personnel involve coatings. Also, the members of the B-2A LO Job group perform an average of 230 tasks, the second largest number of tasks performed by any identified job group, with 126 tasks accounting for over 50 percent of their time spent on the job. By comparison, the members of the F-117A LO Job group perform an average of just 89 tasks. Tasks performed by B-2A LO personnel include:

- apply fairing compounds
- apply masking materials to surfaces
- prepare surfaces by hand sanding
- apply adhesives for application of temporary tapes
- apply adhesives for application of permanent tapes
- prepare surfaces for application of permanent tapes
- apply conductive top coatings/putties
- prepare surface for application of foaming compounds
- prepare surface for application of fairing compounds
- inspect fairing compounds

B-2A LO personnel primarily hold the 5-skill level (48 percent), with 36 percent holding the 7-skill level and the remainder holding the 3-skill level (16 percent). These airmen are predominantly E-4s and E-5s, with an average TAFMS of 125 months. Like their F-117A LO counterparts, all members are active duty and stationed within the CONUS. Sixteen percent of these incumbents are in their first-enlistment and 55 percent are supervisors.

VII. QUALITY ASSURANCE JOB (ST388). This job consists of 27 personnel accounting for less than 1 percent of the survey sample. Quality Assurance (QA) members spend a large portion of their time performing management and supervisory activities (30 percent) and performing general aircraft and support equipment inspections (14 percent). These airmen perform an average of 100 tasks, with 57 tasks accounting for nearly 50 percent of their time. The inspection-oriented nature of their job is reflected in the following list of tasks performed:

- inspect installed rivets
- inspect shop maintenance activities
- inspect aircraft for cleanliness
- conduct safety inspections of equipment or facilities
- inspect sheet metal hand tools
- inspect installed nut plates
- evaluate personnel for compliance with performance standards or technical orders
- evaluate quality-control procedures
- inspect installed mechanical-lock blind rivets
- inspect flightline maintenance activities

The QA Job consists of relatively experienced personnel. Fully 85 percent of the members are 7-skill levels and the remainder are 5-skill levels; there are no 3-skill level members or first-enlistment personnel in this job group. Most personnel are either E-5s or E-6s, with an average TAFMS of 173 months. Twenty-two percent of QA members are supervisors.

VIII. TRAINING JOB (ST276). This job consists of 26 members accounting for less than 1 percent of the survey sample. These squadron-level trainers spend the majority of their time performing training activities (40 percent), and management and supervisory activities (37 percent). This job group performs an average of 59 tasks, the smallest average number of tasks of any identified job group, with 36 tasks accounting for 50 percent of their time spent on the job. The top ten tasks performed by training personnel include:

- direct training functions
- maintain training records or files
- determine training requirements
- schedule training, other than CAMS training
- evaluate progress of trainees
- schedule personnel for training
- develop training programs, plans, or procedures
- develop training materials or aids
- counsel trainees on training progress
- brief organizational personnel concerning training programs or matters

As with the Supervisory and QA jobs, the members of the Training Job are relatively experienced. Two-thirds of these incumbents hold the 7-skill level, while the remaining one-third hold the 5-skill level. These airmen are primarily E-6s and E-7s, with an average TAFMS of 180 months. Sixty-five percent of trainers are supervisors and none are in their first-enlistment.

IX. COMPOSITE JOB (ST245). The smallest identified job group consists of just 18 personnel accounting for less than 1 percent of the survey sample. These airmen spend half of their time performing tasks related to fiberglass laminate and honeycomb core repairs (29 percent) and metal bonded honeycomb core repairs (11 percent). Additionally, when compared to any other identified job group, Composite Job members spend the largest proportion of their time performing advanced composite structural and honeycomb core repairs (6 percent). Of the average 110 tasks they perform, 51 tasks account for 50 percent of their time spent on the job. Representative tasks performed by composite personnel include:

- apply fiberglass repair materials to damaged areas
- finish fiberglass repairs
- prepare resin mixtures
- clean damaged fiberglass structural areas with solvents
- inspect fiberglass repairs for proper bonding
- change respirator cartridges or pre-filters
- cure fiberglass repairs with infrared heat lamps
- apply vacuum pressure to laminated fiberglass repair surfaces
- apply parting agents, such as polyvinyl alcohol (PVA)
- tap test fiberglass to determine defects

The Composite Job group consists of the career ladder's least experienced personnel. Nearly half of its members are in their first-enlistment, a greater percentage than any other identified job group. Additionally, their predominant paygrades are E-3 through E-5, with an average TAFMS of 87 months, the smallest of any identified job group. These incumbents are evenly split among the 3-, 5-, and 7-skill levels, with only 44 percent supervising others.

Comparison of Current Survey to Previous Survey

The results of this career ladder structure analysis were compared to those of the previous analysis published in April 1993. In general, the current study identified the jobs found in the previous study, and also identified two new jobs. As indicated in Table 5, five of the nine jobs identified in the current study were also identified in the previous study, with only minor job title differences. These include the ASM, Corrosion Control, and Supervisory clusters, and the Tool Crib and Quality Assurance jobs. The present study also identified two new jobs: the F-117A and B-2A LO jobs. The two LO maintenance jobs are new due to the recent introduction of LO aircraft into the inventory. The analysis also identified the Composite and Training jobs as independent entities. Previously, the personnel performing the Composite Job were included in the ASM and Repair Cluster, and those performing the Training Job were included in the jobs corresponding to their individual areas of expertise (e.g., Corrosion Control). The previous study had identified an Instruction Job, which should not be confused with the Training Job identified in the current study, as Training Job personnel are squadron-level trainers, while the Instruction Job consisted of instructors located at the operational training location. The Instructor Job was not identified in this study because current school instructors were included in the jobs corresponding to their individual areas of specialization (e.g., ASM).

Summary

Overall, comparisons of the 1993 and 1997 job structures indicate that the ASM career ladder has remained fairly stable over time. Five clusters and jobs identified in the current study are similar to those found in the previous study. However, the introduction of the B-2A LO, F-117A LO, and Composite jobs reflect the growing use of nontraditional airframe skins and coatings.

ANALYSIS OF DAFSC GROUPS

An analysis of DAFSC groups, in conjunction with an analysis of the career ladder structure, is an integral part of an occupational survey. A DAFSC analysis identifies similarities and differences in task and duty performance at various skill levels. This information may be used to

TABLE 5

COMPARISON OF PREVIOUS AND CURRENT STUDY JOB GROUPS

1997 AFSC 2A7X3 STUDY (N=2,958)	1993 AFSC 2A7X3 STUDY (N=3,102)
AIRCRAFT STRUCTURAL MAINTENANCE	AIRCRAFT STRUCTURAL MAINTENANCE
CORROSION CONTROL	AND REPAIR
SUPERVISORY	CORROSION CONTROL
TOOL CRIB	SUPERVISORY
F-117A LOW OBSERVABLE	TOOL CRIB/BENCHSTOCK SUPPLY
B-2A LOW OBSERVABLE	(NOT IDENTIFIED)
QUALITY ASSURANCE	(NOT IDENTIFIED)
TRAINING	QUALITY ASSURANCE
COMPOSITE	(NOT IDENTIFIED)
(NOT IDENTIFIED)	(NOT IDENTIFIED)
	INSTRUCTION

evaluate how well career ladder documents such as AFMAN 36-2108 *Specialty Descriptions*, the Career Field Education and Training Plan, and the Specialty Training Standard (STS) reflect what is being accomplished in the field.

This analysis has been divided into active duty, AFRC, and ANG sections. Table 6 depicts the distribution of active duty, AFRC, and ANG skill level groups across ASM jobs. The table reveals that 59 percent of active duty, 71 percent of AFRC, and 55 percent of ANG 3-skill level personnel are assigned to the ASM core job. As active duty members achieve higher skill levels, they are assigned to a greater variety of jobs in the career ladder. At the 7-skill level, nearly one-fourth of all active duty personnel are supervisors. On the other hand, experienced AFRC and ANG members tend to specialize in ASM and Corrosion Control rather than transition into other jobs. Thus, a typical pattern of career ladder progression is present among active duty members. Three-skill level personnel begin in technical jobs performing technical tasks. 5-skill level members continue to perform technical tasks, but also engage in limited supervisory and training functions, and 7-skill level personnel spend more time managing or supervising and less time engaged in technical tasks as compared to 5-skill level members.

Active Duty Skill-Level Descriptions

DAFSC 2A733. The 405 active duty 3-skill level personnel represent 14 percent of the survey sample. Table 7 shows that these airmen spend the majority of their time performing general ASM (14 percent); repairing, modifying, and fabricating metal parts and assemblies of airframe structures (14 percent); installing and removing fasteners (13 percent); and applying protective coatings (10 percent). Fifty-nine percent of these members are assigned to the ASM Cluster and another 16 percent are assigned to the Corrosion Control Cluster (see Table 6). The nature of their jobs and duties is reflected in the tasks they perform on the job. As shown in Table 8, members generally perform technical ASM tasks.

DAFSC 2A753. These 863 active duty 5-skill level members account for 29 percent of the survey sample. According to Table 7, the members of this group spend a large portion of their time repairing, modifying, and fabricating metal parts and assemblies of airframe structures (14 percent); installing and removing fasteners (12 percent); and performing general ASM (11 percent). Table 9 reveals the tasks they perform are similar to the technical tasks performed by their 3-skill level counterparts. However, 5-skill level incumbents do not specialize in technical tasks alone; 8 percent of their time is spent engaged in supervisory and training activities. Thus, while most members are assigned to the ASM and Corrosion Control clusters (65 and 11 percent respectively) (see Table 6), 3 percent are assigned to either the Supervisory Cluster, or QA and Training jobs. The beginning of this shift from technician to supervisor is further supported by reviewing the 10 tasks which best differentiate between active duty 3- and 5-skill level airmen. These tasks, provided in Table 10, are all related to either supervising or training functions, with a higher percentage of 5-skill level members performing these functions than 3-skill level members.

TABLE 6

DISTRIBUTION OF AFSC 2A7X3 ACTIVE DUTY, AIR FORCE RESERVE COMMAND, AND AIR NATIONAL GUARD
SKILL LEVEL GROUPS ACROSS JOBS
(PERCENTAGE OF SUBSAMPLE)

JOB	2A733			2A753			2A773		
	ACTIVE (N=405)	AFRC (N=28)	ANG (N=11)	ACTIVE (N=863)	AFRC (N=271)	ANG (N=187)	ACTIVE (N=742)	AFRC (N=272)	ANG (N=180)
AIRCRAFT STRUCTURAL MAINTENANCE CLUSTER	59	71	55	65	69	90	40	62	87
CORROSION CONTROL CLUSTER	16	4	4	11	3	3	7	3	4
SUPERVISORY CLUSTER	0	0	0	1	*	0	24	10	4
TOOL CRIB JOB	1	0	0	4	0	0	4	*	0
F-117A LOW OBSERVABLE JOB	4	0	0	2	0	0	2	0	0
B-2A LOW OBSERVABLE JOB	2	0	0	2	0	0	2	0	0
QUALITY ASSURANCE JOB	0	0	0	1	0	0	3	1	0
TRAINING JOB	0	0	0	1	0	0	2	1	0
COMPOSITE JOB	2	0	0	1	*	0	1	*	*
NOT GROUPED	16	25	36	12	27	6	15	22	4

*Less than 1 percent

TABLE 7

TIME SPENT ON AFSC 2A7X3 JOB DUTIES ACROSS ACTIVE DUTY SKILL LEVEL GROUPS
(AVERAGE RELATIVE PERCENT TIME SPENT)

DUTY	2A733 (N=405)	2A753 (N=862)	2A773 (N=742)
A. PERFORMING GENERAL AIRCRAFT STRUCTURAL MAINTENANCE	14	11	7
B. PERFORMING GENERAL AIRCRAFT AND SUPPORT EQUIPMENT INSPECTIONS	4	4	4
C. PERFORMING ENVIRONMENTAL OR SAFETY ACTIVITIES	6	5	4
D. MAINTAINING EQUIPMENT	6	5	3
E. REPAIRING AND REPLACING TRANSPARENT PLASTICS	*	*	*
F. MAINTAINING AIRCRAFT TUBING AND TUBING ASSEMBLIES	5	4	3
G. INSTALLING AND REMOVING FASTENERS	13	12	7
H. REPAIRING, MODIFYING, AND FABRICATING METAL PARTS AND ASSEMBLIES OF AIRFRAME STRUCTURES	14	14	7
I. PERFORMING ADVANCED COMPOSITE STRUCTURAL AND HONEYCOMB CORE REPAIRS	1	2	2
J. PERFORMING FIBERGLASS LAMINATE AND HONEYCOMB CORE REPAIRS	3	4	3
K. PERFORMING METAL BONDED HONEYCOMB CORE REPAIRS	1	2	1
L. PERFORMING MAINTENANCE ON LOW OBSERVABLE MATERIALS	4	3	3
M. REMOVING CORROSION AND PROTECTIVE COATINGS	7	5	2
N. PERFORMING SEALING OR SEALANT ACTIVITIES	3	3	2
O. APPLYING PROTECTIVE COATINGS	10	7	3
P. PERFORMING CORE AUTOMATED MAINTENANCE SYSTEM (CAMS) ACTIVITIES	3	4	4
Q. PERFORMING GENERAL AIRCRAFT OR CROSS UTILIZATION TRAINING (CUT) ACTIVITIES	*	2	*
R. PERFORMING MANAGEMENT AND SUPERVISORY ACTIVITIES	*	6	32
S. PERFORMING TRAINING ACTIVITIES	*	2	4
T. PERFORMING GENERAL ADMINISTRATIVE AND TECHNICAL ORDER SYSTEM ACTIVITIES	*	1	4
U. PERFORMING GENERAL SUPPLY AND EQUIPMENT ACTIVITIES	2	4	5

* Less than 1 percent

NOTE: Due to rounding, columns may not add to 100 percent

TABLE 8

REPRESENTATIVE TASKS PERFORMED BY ACTIVE DUTY DAFSC 2A733 MEMBERS
(PERCENT MEMBERS PERFORMING)

TASK	2A733 (N=405)
A43 Prepare surfaces by hand sanding	79
G217 Countersink fastener holes	79
A42 Prepare surfaces using pneumatic tools	77
G220 Drill fastener holes	76
A45 Remove masking materials from surfaces	76
A5 Apply masking materials to surfaces	74
H287 Cut rivets	74
C86 Clean personal protective equipment	72
C84 Change respirator cartridges or pre-filters	71
A36 Perform foreign object walks to prevent foreign object damage (FOD)	70
H289 Cut and trim sheet metal	69
G221 Inspect fasteners for flush installation	68
G259 Install or remove pull-through blind rivets	67
A49 Research technical data for repair procedures	66
D115 Clean sheet metal shop equipment	65
H342 Stopdrill cracks on sheet metal	64
G232 Install or remove nut plates, other than gang channel or tridair	64
D114 Clean sheet metal hand tools	63
A3 Apply decals to aircraft or support equipment	63
G224 Inspect installed nut plates	62
G222 Inspect drilled fastener holes	62
G266 Microshave fasteners	61
H322 Perform nonflush skin repairs	61
H332 Remove damaged areas by chain drilling	61
G265 Lay out patterns for fasteners	60
A41 Prepare surfaces using plastic media blasters	60
B68 Inspect installed rivets	60
H339 Secure sheet metal with cleco fasteners	60
F186 Cut tubing	60
A44 Remove decals from aircraft or support equipment	59
A4 Apply edge sealers	59
A7 Apply stencil markings to aircraft or support equipment	58
G262 Install or remove solid-shank rivets	58
D123 Inspect sheet metal hand tools	58
H296 Fabricate repair parts	58
F187 Deburr, file, or sand tubing	58

TABLE 9

REPRESENTATIVE TASKS PERFORMED BY ACTIVE DUTY DAFSC 2A753 MEMBERS
(PERCENT MEMBERS PERFORMING)

TASK	2A753 (N=862)
G220 Drill fastener holes	77
G217 Countersink fastener holes	77
A49 Research technical data for repair procedures	74
H287 Cut rivets	74
H289 Cut and trim sheet metal	73
G221 Inspect fasteners for flush installation	73
G259 Install or remove pull-through blind rivets	72
A43 Prepare surfaces by hand sanding	70
A42 Prepare surfaces using pneumatic tools	69
H342 Stopdrill cracks on sheet metal	68
B68 Inspect installed rivets	68
A45 Remove masking materials from surfaces	68
G224 Inspect installed nut plates	68
G222 Inspect drilled fastener holes	67
H332 Remove damaged areas by chain drilling	67
G232 Install or remove nut plates, other than gang channel or tridair	66
H322 Perform nonflush skin repairs	66
A5 Apply masking materials to surfaces	66
C84 Change respirator cartridges or pre-filters	66
G246 Install or remove hi-lok fasteners	65
C86 Clean personal protective equipment	65
D114 Clean sheet metal hand tools	65
G265 Lay out patterns for fasteners	65
G262 Install or remove solid-shank rivets	64
H339 Secure sheet metal with cleco fasteners	64
H296 Fabricate repair parts	64
A36 Perform foreign object walks to prevent foreign object damage (FOD)	63
D123 Inspect sheet metal hand tools	63
G266 Microshave fasteners	63
H292 Develop layouts for repairs or parts	63
F186 Cut tubing	63
N621 Apply sealant to fasteners	61
H321 Perform foreign object inspections of repair areas	61
H320 Perform flush skin repairs	61
H334 Remove frozen or stripped screws	61
H274 Align rivet or special fastener holes	61

TABLE 10

TASKS WHICH BEST DIFFERENTIATE BETWEEN ACTIVE DUTY DAFSC 2A733 AND 2A753 MEMBERS
(PERCENT MEMBERS PERFORMING)

TASK	2A733 (N=405)	2A753 (N=862)	DIFFERENCE
R891 Coordinate maintenance activities with crew chiefs, dock chiefs, or flightline progress	4	23	-19
R902 Determine or establish work assignments or priorities	1	21	-20
S996 Counsel trainees on training progress	1	23	-22
R898 Counsel subordinates concerning personal matters	*	23	-23
R874 Assign personnel to work areas or duty positions	1	25	-24
R883 Conduct supervisory performance feedback sessions	*	25	-25
R876 Clear Red-dash conditions	22	52	-30
R982 Supervise military personnel	*	30	-30
R877 Clear Red-diagonal conditions	25	55	-30
S994 Conduct OJT	5	37	-32

*Less than 1 percent

DAFSC 2A773. The 742 active duty 7-skill level personnel account for 25 percent of the survey sample. These members spend 64 percent of their time engaged in a variety of technical duties and 36 percent of their time performing managerial, supervisory, and training activities (see Table 7). Forty percent of these members are assigned to the core ASM Cluster, with another 24 percent assigned to the Supervisory Cluster (see Table 6). Table 11 displays the mix of technical and supervisory tasks performed by 7-skill level members. Table 12 highlights 7-skill level members' increasing responsibility, as a higher percentage of members are performing various supervisory tasks as compared to their 5-skill level counterparts.

Air Force Reserve Command Skill-Level Descriptions

DAFSC 2A733. These 28 AFRC 3-skill level members account for just 1 percent of the survey sample. Like their active duty 3-skill level counterparts, these reservists spend the bulk of their time engaged in technical duties including repairing, modifying, and fabricating metal parts and assemblies of airframe structures (19 percent); installing and removing fasteners (15 percent); and performing general ASM (14 percent) (see Table 13). Table 14 lists representative tasks performed by 3-skill level reservists. As expected, these tasks are technical in nature.

DAFSC 2A753. The 271 AFRC 5-skill level personnel represent 9 percent of the survey sample. According to Table 13, the members of this group spend nearly half their time repairing, modifying, and fabricating metal parts and assemblies of airframe structures (18 percent); installing and removing fasteners (17 percent); and performing general ASM (13 percent). Their job description is quite similar to that of the 3-skill level reservist. A comparison of representative task lists for the two groups (Tables 14 and 15) reveal that the tasks performed by the two groups are comparable. However, like their active duty counterparts, these 5-skill level reservists differ from their 3-skill level associates by engaging in limited supervisory activities (about 2 percent of their time). Otherwise, there is little difference between the technical tasks performed by 3- and 5-skill level reservists (see Table 16).

DAFSC 2A773. These 272 AFRC 7-skill level members represent 9 percent of the survey sample. These airmen spend 38 percent of their time performing the same three technical duties as the 3- and 5-skill level reservists, but they also spend a large percentage of their time engaged in managerial, supervisory, and training activities (18 percent) (see Table 13). As a result, the group's list of representative tasks (Table 17) is similar to those found in Tables 14 and 15. However, the higher percentage of supervisory and training tasks performed by 7-skill level reservists distinguishes them from the 3- and 5-skill level reservists (see Table 18).

TABLE 11

REPRESENTATIVE TASKS PERFORMED BY ACTIVE DUTY DAFSC 2A773 MEMBERS
(PERCENT MEMBERS PERFORMING)

TASK	2A773 (N=742)
R883 Conduct supervisory performance feedback sessions	71
R982 Supervise military personnel	71
R898 Counsel subordinates concerning personal matters	64
R878 Clear Red-X conditions	63
R874 Assign personnel to work areas or duty positions	63
A49 Research technical data for repair procedures	62
R957 Inspect personnel for compliance with military standards	62
R985 Write performance reports or supervisory appraisals	60
R987 Write recommendations for awards or decorations	58
R884 Conduct safety inspections of equipment or facilities	58
U1069 Inventory consolidated tool kits (CTKs)	57
R902 Determine or establish work assignments or priorities	57
R907 Develop or establish work methods or procedures	56
R877 Clear Red-diagonal conditions	56
R876 Clear Red-dash conditions	55
P758 Access CAMS menus and data screens	54
R881 Conduct self-inspections or self-assessments	53
P768 Open or close CAMS	53
R963 Participate in general meetings, such as staff meetings, briefings, conferences, or workshops, other than conducting	52
R958 Inspect shop maintenance activities	52
B68 Inspect installed rivets	52
S994 Conduct OJT	51
G221 Inspect fasteners for flush installation	51
G224 Inspect installed nut plates	50
R940 Evaluate personnel for compliance with performance standards or technical orders	50
A36 Perform foreign object walks to prevent foreign object damage (FOD)	50
G217 Countersink fastener holes	50
A50 Research technical data to perform inspections	49
B72 Inspect and classify aircraft metal structural damages, other than honeycomb core	49
G220 Drill fastener holes	49
G222 Inspect drilled fastener holes	49
S996 Counsel trainees on training progress	49
R908 Develop or establish work schedules	48

TABLE 12

TASKS WHICH BEST DIFFERENTIATE BETWEEN ACTIVE DUTY DAFSC 2A753 AND 2A773 MEMBERS
(PERCENT MEMBERS PERFORMING)

TASK	2A753 (N=862)	2A773 (N = 742)	DIFFERENCE
H287 Cut rivets	74	45	29
G220 Drill fastener holes	77	49	28
G259 Install or remove pull-through blind rivets	72	45	27
H289 Cut and trim sheet metal	73	46	27
G217 Countersink fastener holes	77	50	27
A43 Prepare surfaces by hand sanding	70	43	27
D114 Clean sheet metal hand tools	65	38	27
G245 Install or remove hi-lok fasteners	65	39	26
G232 Install or remove nut plates, other than gang channel or tridair	66	40	26
H322 Perform nonflush skin repairs	66	41	25
R940 Evaluate personnel for compliance with performance standards or technical orders	12	50	-38
R963 Participate in general meetings, such as staff meetings, briefings, conferences, or workshops, other than conducting	14	52	-38
R958 Inspect shop maintenance activities	13	52	-39
R898 Counsel subordinates concerning personal matters	23	64	-41
R982 Supervise military personnel	30	71	-41
R985 Write performance reports or supervisory appraisals	17	60	-43
R957 Inspect personnel for compliance with military standards	19	62	-43
R878 Clear Red-X conditions	20	63	-43
R987 Write recommendations for awards or decorations	13	58	-45
R883 Conduct supervisory performance feedback sessions	25	71	-46

TABLE 13

TIME SPENT ON AFSC 2A7X3 JOB DUTIES ACROSS AIR FORCE RESERVE COMMAND SKILL LEVEL GROUPS
(AVERAGE RELATIVE PERCENT TIME SPENT)

DUTY	2A733 (N=28)	2A753 (N=271)	2A773 (N=272)
A. PERFORMING GENERAL AIRCRAFT STRUCTURAL MAINTENANCE	14	13	10
B. PERFORMING GENERAL AIRCRAFT AND SUPPORT EQUIPMENT INSPECTIONS	6	5	5
C. PERFORMING ENVIRONMENTAL OR SAFETY ACTIVITIES	5	4	4
D. MAINTAINING EQUIPMENT	5	6	5
E. REPAIRING AND REPLACING TRANSPARENT PLASTICS	1	*	*
F. MAINTAINING AIRCRAFT TUBING AND TUBING ASSEMBLIES	5	5	4
G. INSTALLING AND REMOVING FASTENERS	15	17	14
H. REPAIRING, MODIFYING, AND FABRICATING METAL PARTS AND ASSEMBLIES OF AIRFRAME STRUCTURES	19	18	14
I. PERFORMING ADVANCED COMPOSITE STRUCTURAL AND HONEYCOMB CORE REPAIRS	*	1	*
J. PERFORMING FIBERGLASS LAMINATE AND HONEYCOMB CORE REPAIRS	3	4	4
K. PERFORMING METAL BONDED HONEYCOMB CORE REPAIRS	1	2	2
L. PERFORMING MAINTENANCE ON LOW OBSERVABLE MATERIALS	1	*	*
M. REMOVING CORROSION AND PROTECTIVE COATINGS	7	7	5
N. PERFORMING SEALING OR SEALANT ACTIVITIES	4	4	3
O. APPLYING PROTECTIVE COATINGS	7	6	5
P. PERFORMING CORE AUTOMATED MAINTENANCE SYSTEM (CAMS) ACTIVITIES	2	1	2
Q. PERFORMING GENERAL AIRCRAFT OR CROSS UTILIZATION TRAINING (CUT) ACTIVITIES	2	2	1
R. PERFORMING MANAGEMENT AND SUPERVISORY ACTIVITIES	*	2	14
S. PERFORMING TRAINING ACTIVITIES	*	*	4
T. PERFORMING GENERAL ADMINISTRATIVE AND TECHNICAL ORDER SYSTEM ACTIVITIES	*	*	1
U. PERFORMING GENERAL SUPPLY AND EQUIPMENT ACTIVITIES	2	2	2

* Less than 1 percent

NOTE: Due to rounding, columns may not add to 100 percent

TABLE 14

REPRESENTATIVE TASKS PERFORMED BY AIR FORCE RESERVE COMMAND
DAFSC 2A733 MEMBERS
(PERCENT MEMBERS PERFORMING)

TASK	2A733 (N=28)
G217 Countersink fastener holes	93
G220 Drill fastener holes	89
H289 Cut and trim sheet metal	89
H339 Secure sheet metal with cleco fasteners	82
B68 Inspect installed rivets	82
C84 Change respirator cartridges or pre-filters	82
H322 Perform nonflush skin repairs	82
G221 Inspect fasteners for flush installation	82
H342 Stopdrill cracks on sheet metal	82
H287 Cut rivets	82
H274 Align rivet or special fastener holes	82
G266 Microshave fasteners	82
C86 Clean personal protective equipment	79
B60 Classify severity of corrosion	79
H292 Develop layouts for repairs or parts	79
G222 Inspect drilled fastener holes	79
D114 Clean sheet metal hand tools	79
A45 Remove masking materials from surfaces	75
A49 Research technical data for repair procedures	75
G224 Inspect installed nut plates	75
H320 Perform flush skin repairs	75
G272 Remove or replace aircraft bolts	75
B64 Identify types of corrosion	75
A5 Apply masking materials to surfaces	71
A42 Prepare surfaces using pneumatic tools	71
G265 Lay out patterns for fasteners	71
H319 Perform combination substructural member and skin repairs	71
D115 Clean sheet metal shop equipment	71
F181 Bend tubing using hand tube benders	71
G262 Install or remove solid-shank rivets	68
H296 Fabricate repair parts	68
H310 Install or remove hinges	68
H332 Remove damaged areas by chain drilling	68
A43 Prepare surfaces by hand sanding	68
A36 Perform foreign object walks to prevent foreign object damage (FOD)	68
F186 Cut tubing	68

TABLE 15

REPRESENTATIVE TASKS PERFORMED BY AIR FORCE RESERVE COMMAND
DAFSC 2A753 MEMBERS
(PERCENT MEMBERS PERFORMING)

TASK	2A753 (N=271)	
G220	Drill fastener holes	90
G217	Countersink fastener holes	85
H289	Cut and trim sheet metal	85
H342	Stopdrill cracks on sheet metal	82
H287	Cut rivets	81
G259	Install or remove pull-through blind rivets	79
H332	Remove damaged areas by chain drilling	78
G221	Inspect fasteners for flush installation	77
H322	Perform nonflush skin repairs	77
B68	Inspect installed rivets	77
H339	Secure sheet metal with cleco fasteners	76
D114	Clean sheet metal hand tools	76
G222	Inspect drilled fastener holes	75
G224	Inspect installed nut plates	75
F186	Cut tubing	75
H320	Perform flush skin repairs	75
A49	Research technical data for repair procedures	74
A42	Prepare surfaces using pneumatic tools	73
G265	Lay out patterns for fasteners	73
A43	Prepare surfaces by hand sanding	73
G246	Install or remove hi-lok fasteners	72
H327	Remove damaged areas using aviation snips	72
A46	Remove or replace aircraft panels	71
F187	Deburr, file, or sand tubing	71
D115	Clean sheet metal shop equipment	70
A5	Apply masking materials to surfaces	70
F181	Bend tubing using hand tube benders	70
A45	Remove masking materials from surfaces	70
G266	Microshave fasteners	70
D123	Inspect sheet metal hand tools	69
H343	Trim and fit aircraft skins	69
N621	Apply sealant to fasteners	69
C86	Clean personal protective equipment	69
H274	Align rivet or special fastener holes	68
H296	Fabricate repair parts	68
C84	Change respirator cartridges or pre-filters	68

TABLE 16

TASKS WHICH BEST DIFFERENTIATE BETWEEN AIR FORCE RESERVE COMMAND DAFSC 2A733 AND 2A753 MEMBERS
(PERCENT MEMBERS PERFORMING)

TASK	2A733 (N=28)	2A753 (N=271)	DIFFERENCE
O695 Apply polyurethane coatings using suction-feed spray guns	39	19	20
O753 Set up suction-feed spray equipment for use	39	21	18
B60 Classify severity of corrosion	79	62	17
O664 Apply enamels using suction-feed spray guns	29	12	17
C84 Change respirator cartridges or pre-filters	82	68	14
H274 Align rivet or special fastener holes	82	68	14
O674 Apply epoxy coatings using suction-feed spray guns	29	16	13
E152 Cut transparent plastics with automatic metal-shearing devices	29	16	13
O705 Apply primers using suction-feed spray guns	32	19	13
O685 Apply lacquers using suction-feed spray guns	25	13	12
M589 Remove protective coatings using pneumatic grinders.	21	44	-23
J395 Apply direct pressure to fiberglass repair surfaces	25	48	-23
N628 Perform fillet sealing applications	14	37	-23
K428 Cut and shape replacement metal honeycomb cores, other than by using core slicer assemblies	14	37	-23
C102 Maintain hazardous waste in marked and secure locations	7	30	-23
J421 Repair and replace damaged fiberglass honeycomb cores	14	37	-23
D110 Clean coating special equipment	11	34	-23
A1 Apply aerodynamic smoothing compounds	43	67	-24
S994 Conduct OJT	0	25	-25
K431 Perform cold bonding of aluminum to metal bonded honeycomb panels	7	34	-27

TABLE 17

REPRESENTATIVE TASKS PERFORMED BY AIR FORCE RESERVE COMMAND
DAFSC 2A773 MEMBERS
(PERCENT MEMBERS PERFORMING)

TASK	2A773 (N=272)
G220 Drill fastener holes	78
B68 Inspect installed rivets	76
G217 Countersink fastener holes	75
H342 Stopdrill cracks on sheet metal	74
H289 Cut and trim sheet metal	74
A49 Research technical data for repair procedures	73
G221 Inspect fasteners for flush installation	73
H287 Cut rivets	73
G224 Inspect installed nut plates	72
G222 Inspect drilled fastener holes	72
D123 Inspect sheet metal hand tools	71
G259 Install or remove pull-through blind rivets	69
B73 Inspect areas for corrosion using hand equipment, such as flashlights, probes, or mirrors	69
H320 Perform flush skin repairs	68
F186 Cut tubing	68
D114 Clean sheet metal hand tools	67
C84 Change respirator cartridges or pre-filters	67
H322 Perform nonflush skin repairs	67
D124 Inspect sheet metal shop equipment	67
G265 Lay out patterns for fasteners	66
H332 Remove damaged areas by chain drilling	66
B60 Classify severity of corrosion	65
B64 Identify types of corrosion	65
H327 Remove damaged areas using aviation snips	64
C86 Clean personal protective equipment	64
A5 Apply masking materials to surfaces	64
D115 Clean sheet metal shop equipment	63
A42 Prepare surfaces using pneumatic tools	63
A43 Prepare surfaces by hand sanding	63
A45 Remove masking materials from surfaces	63
B72 Inspect and classify aircraft metal structural damages, other than honeycomb core	63
F187 Deburr, file, or sand tubing	63
H292 Develop layouts for repairs or parts	63
G246 Install or remove hi-lok fasteners	63

TABLE 18

TASKS WHICH BEST DIFFERENTIATE BETWEEN AIR FORCE RESERVE COMMAND DAFSC 2A753 AND 2A773 MEMBERS
(PERCENT MEMBERS PERFORMING)

TASK		2A753 (N=271)	2A773 (N=272)	DIFFERENCE
R963	Participate in general meetings, such as staff meetings, briefings, conferences, or workshops, other than conducting	11	33	-22
R907	Develop or establish work methods or procedures	13	36	-23
R881	Conduct self-inspections or self-assessments	13	37	-24
R908	Develop or establish work schedules	8	32	-24
R898	Counsel subordinates concerning personal matters	5	29	-24
R911	Direct training functions	9	33	-24
S996	Counsel trainees on training progress	15	39	-24
R957	Inspect personnel for compliance with military standards	6	31	-25
R974	Assign personnel to work areas or duty positions	12	39	-27
R982	Supervise military personnel	17	45	-28

Air National Guard Skill-Level Descriptions

DAFSC 2A733. Eleven ANG 3-skill level airmen represent less than 1 percent of the survey sample. According to Table 19, these members spend the majority of their time performing general ASM (18 percent); installing and removing fasteners (18 percent); and repairing, modifying, and fabricating metal parts and assemblies of airframe structures (17 percent). Table 20 provides a list of the primarily technical tasks performed by 3-skill level guardsmen.

DAFSC 2A753. These 187 ANG 5-skill level personnel comprise 6 percent of the survey sample. Table 19 shows that the members of this group spend 53 percent of their time repairing, modifying, and fabricating metal parts and assemblies of airframe structures (17 percent); installing and removing fasteners (13 percent); performing general ASM (12 percent); and applying protective coatings (11 percent). Other than the increased time spent engaged in protective coating duties, the technical activities of this group are not unlike those experienced by 3-skill level guardsmen, as demonstrated by the representative tasks displayed in Table 21. Table 22 shows 5-skill level guardsmen are performing more technical tasks than 3-skill level guardsmen. Like the active duty and AFRC 5-skill level members described previously, these guardsmen also engage in some supervisory activities (about 2 percent of their time) (see Table 19).

DAFSC 2A773. The 180 ANG 7-skill level members account for 6 percent of the survey sample. These airmen spend a large portion of their time performing the same four technical duties as their 5-skill level counterparts (see Table 19). The list of representative tasks performed by members reveals the technical nature of the job (see Table 23). However, as seen with other experienced incumbents, 7-skill level guardsmen allocate more time to managerial, supervisory, and training activities (about 10 percent of their time) than 5-skill level guardsmen. The list of tasks that best differentiate between 5- and 7-skill level guardsmen are generally concerned with supervision and training, with a greater percentage of 7-skill level guardsmen performing supervisory tasks than 5-skill level guardsmen (see Table 24).

Comparisons of Active Duty, AFRC, and ANG Members

Tables 25 through 27 display the average relative percent time spent on job duties for each skill level-component group combination. The duties performed and time allocated to each duty by active duty, AFRC, and ANG personnel of each skill level are generally similar. Each group's members spend the majority of their time engaged in three common duties: repairing, modifying, and fabricating metal parts and assemblies of airframe structures; installing and removing fasteners, and performing general ASM. However, there are three notable differences among these groups. First, a review of the three tables reveals that only active duty 3-, 5-, and 7-skill level personnel are performing maintenance on LO materials. Also, the time active duty members spend applying protective coatings decreases with increasing skill level, while the time AFRC and ANG members allocate to that duty remains fairly constant across skill levels. Finally, the time

TABLE 19

TIME SPENT ON AFSC 2A7X3 JOB DUTIES ACROSS AIR NATIONAL GUARD SKILL LEVEL GROUPS
(AVERAGE RELATIVE PERCENT TIME SPENT)

DUTY	2A733 (N=11)	2A753 (N=187)	2A773 (N=180)
A. PERFORMING GENERAL AIRCRAFT STRUCTURAL MAINTENANCE	18	12	11
B. PERFORMING GENERAL AIRCRAFT AND SUPPORT EQUIPMENT INSPECTIONS	5	5	5
C. PERFORMING ENVIRONMENTAL OR SAFETY ACTIVITIES	4	5	5
D. MAINTAINING EQUIPMENT	6	6	6
E. REPAIRING AND REPLACING TRANSPARENT PLASTICS	*	*	*
F. MAINTAINING AIRCRAFT TUBING AND TUBING ASSEMBLIES	3	4	4
G. INSTALLING AND REMOVING FASTENERS	18	13	10
H. REPAIRING, MODIFYING, AND FABRICATING METAL PARTS AND ASSEMBLIES OF AIRFRAME STRUCTURES	17	17	14
I. PERFORMING ADVANCED COMPOSITE STRUCTURAL AND HONEYCOMB CORE REPAIRS	*	*	1
J. PERFORMING FIBERGLASS LAMINATE AND HONEYCOMB CORE REPAIRS	1	3	4
K. PERFORMING METAL BONDED HONEYCOMB CORE REPAIRS	*	*	1
L. PERFORMING MAINTENANCE ON LOW OBSERVABLE MATERIALS	*	*	*
M. REMOVING CORROSION AND PROTECTIVE COATINGS	7	8	6
N. PERFORMING SEALING OR SEALANT ACTIVITIES	3	4	3
O. APPLYING PROTECTIVE COATINGS	8	11	10
P. PERFORMING CORE AUTOMATED MAINTENANCE SYSTEM (CAMS) ACTIVITIES	2	2	3
Q. PERFORMING GENERAL AIRCRAFT OR CROSS UTILIZATION TRAINING (CUT) ACTIVITIES	1	2	2
R. PERFORMING MANAGEMENT AND SUPERVISORY ACTIVITIES	*	2	8
S. PERFORMING TRAINING ACTIVITIES	*	*	2
T. PERFORMING GENERAL ADMINISTRATIVE AND TECHNICAL ORDER SYSTEM ACTIVITIES	*	*	2
U. PERFORMING GENERAL SUPPLY AND EQUIPMENT ACTIVITIES	2	2	4

* Less than 1 percent

NOTE: Due to rounding, columns may not add to 100 percent

TABLE 20

REPRESENTATIVE TASKS PERFORMED BY
AIR NATIONAL GUARD DAFSC 2A733 MEMBERS
(PERCENT MEMBERS PERFORMING)

TASK		2A733 (N=11)
G220	Drill fastener holes	91
A42	Prepare surfaces using pneumatic tools	91
G217	Countersink fastener holes	91
A7	Apply stencil markings to aircraft or support equipment	91
H274	Align rivet or special fastener holes	82
B64	Identify types of corrosion	82
M565	Remove corrosion using abrasive papers or cloths	73
A5	Apply masking materials to surfaces	73
H289	Cut and trim sheet metal	73
G265	Lay out patterns for fasteners	73
H287	Cut rivets	73
G232	Install or remove nut plates, other than gang channel or tridair	73
H339	Secure sheet metal with cleco fasteners	73
G222	Inspect drilled fastener holes	73
A3	Apply decals to aircraft or support equipment	73
G266	Microshave fasteners	73
G262	Install or remove solid-shank rivets	73
B73	Inspect areas for corrosion using hand equipment, such as flashlights, probes, or mirrors	73
A36	Perform foreign object walks to prevent foreign object damage (FOD)	64
M564	Remove corrosion using abrasive mats	64
G221	Inspect fasteners for flush installation	64
G238	Install or remove camloc fasteners	64
D115	Clean sheet metal shop equipment	64
G224	Inspect installed nut plates	64
A13	Attach or remove static grounds	64
H322	Perform nonflush skin repairs	64
H296	Fabricate repair parts	64
A43	Prepare surfaces by hand sanding	64
D114	Clean sheet metal hand tools	64
G246	Install or remove hi-lok fasteners	64
H342	Stopdrill cracks on sheet metal	64
C86	Clean personal protective equipment	64
H304	Identify metals using visual comparison techniques	55
A27	Fabricate stencil by computer	55
N621	Apply sealant to fasteners	55

TABLE 21

REPRESENTATIVE TASKS PERFORMED BY
AIR NATIONAL GUARD DAFSC 2A753 MEMBERS
(PERCENT MEMBERS PERFORMING)

TASK		2A753 (N=187)
G217	Countersink fastener holes	97
G220	Drill fastener holes	95
H287	Cut rivets	94
A42	Prepare surfaces using pneumatic tools	93
A43	Prepare surfaces by hand sanding	93
H289	Cut and trim sheet metal	92
G221	Inspect fasteners for flush installation	91
H342	Stopdrill cracks on sheet metal	87
D115	Clean sheet metal shop equipment	87
G222	Inspect drilled fastener holes	87
G224	Inspect installed nut plates	86
A5	Apply masking materials to surfaces	86
A45	Remove masking materials from surfaces	86
B68	Inspect installed rivets	85
D114	Clean sheet metal hand tools	84
H339	Secure sheet metal with cleco fasteners	84
H320	Perform flush skin repairs	83
M565	Remove corrosion using abrasive papers or cloths	83
H296	Fabricate repair parts	82
G232	Install or remove nut plates, other than gang channel or tridair	82
H311	Install or remove latches	81
G259	Install or remove pull-through blind rivets	81
C84	Change respirator cartridges or pre-filters	81
C86	Clean personal protective equipment	80
H332	Remove damaged areas by chain drilling	80
H292	Develop layouts for repairs or parts	80
A49	Research technical data for repair procedures	79
H322	Perform nonflush skin repairs	79
H310	Install or remove hinges	79
A3	Apply decals to aircraft or support equipment	79
G265	Lay out patterns for fasteners	79
H274	Align rivet or special fastener holes	78
D123	Inspect sheet metal hand tools	78
G266	Microshave fasteners	78
O757	Wipe down surfaces prior to painting	77
B64	Identify types of corrosion	77

TABLE 22

TASKS WHICH BEST DIFFERENTIATE BETWEEN AIR NATIONAL GUARD DAFSC 2A733 AND 2A753 MEMBERS
(PERCENT MEMBERS PERFORMING)

TASK	2A733 (N=11)	2A753 (N=187)	DIFFERENCE
M570 Remove corrosion using high-speed die grinders	18	63	-45
H309 Inspect installed latches	27	72	-45
G259 Install or remove pull-through blind rivets	36	81	-45
D136 Service sheet metal shop equipment	18	64	-46
H330 Remove damaged areas using routers	0	46	-46
G233 Install or remove rivnuts	9	55	-46
A1 Apply aerodynamic smoothing compounds	27	74	-47
D131 Perform operator maintenance on sheet metal special equipment	9	56	-47
A40 Prepare corrosion control materials prior to use	18	68	-50
H336 Reshape damaged metal areas	0	57	-57

TABLE 23

REPRESENTATIVE TASKS PERFORMED BY
AIR NATIONAL GUARD DAFSC 2A773 MEMBERS
(PERCENT MEMBERS PERFORMING)

TASK	2A773 (N=180)
G217 Countersink fastener holes	89
A43 Prepare surfaces by hand sanding	89
C84 Change respirator cartridges or pre-filters	88
G220 Drill fastener holes	88
A42 Prepare surfaces using pneumatic tools	88
A49 Research technical data for repair procedures	87
H289 Cut and trim sheet metal	87
G221 Inspect fasteners for flush installation	87
H287 Cut rivets	87
H342 Stopdrill cracks on sheet metal	87
G224 Inspect installed nut plates	87
A45 Remove masking materials from surfaces	87
H320 Perform flush skin repairs	87
B64 Identify types of corrosion	87
H296 Fabricate repair parts	86
C86 Clean personal protective equipment	86
A5 Apply masking materials to surfaces	86
H339 Secure sheet metal with cleco fasteners	85
B73 Inspect areas for corrosion using hand equipment, such as flashlights, probes, or mirrors	85
B68 Inspect installed rivets	85
B60 Classify severity of corrosion	85
D115 Clean sheet metal shop equipment	84
D114 Clean sheet metal hand tools	84
H311 Install or remove latches	84
D123 Inspect sheet metal hand tools	83
H312 Interpret drawings or blueprints	83
H344 Trim and fit doors or access panels	83
G232 Install or remove nut plates, other than gang channel or tridair	83
G265 Lay out patterns for fasteners	83
A36 Perform foreign object walks to prevent foreign object damage (FOD)	83
H292 Develop layouts for repairs or parts	83
A3 Apply decals to aircraft or support equipment	83
H343 Trim and fit aircraft skins	82
G222 Inspect drilled fastener holes	81
D124 Inspect sheet metal shop equipment	81

TABLE 24

TASKS WHICH BEST DIFFERENTIATE BETWEEN AIR NATIONAL GUARD DAFSC 2A753 AND 2A773 MEMBERS
(PERCENT MEMBERS PERFORMING)

TASK	2A753 (N=187)	2A773 (N=180)	DIFFERENCE
R877 Clear Red-diagonal conditions	38	69	-31
P769 Order and track supplies using standard base supply system (SBSS)	17	48	-31
R902 Determine or establish work assignments or priorities	11	42	-31
B77 Perform acceptance inspections of aircraft on which contract or depot work was performed	23	55	-32
U1072 Maintain benchstock parts or equipment levels	30	63	-33
S1009 Maintain training records or files	6	42	-36
S996 Counsel trainees on training progress	5	43	-38
R982 Supervise military personnel	7	46	-39
S994 Conduct OJT	21	60	-39
R878 Clear Red-X conditions	9	60	-51

TABLE 25

TIME SPENT ON AFSC 2A7X3 JOB DUTIES ACROSS 3-SKILL LEVEL COMPONENT GROUPS
(AVERAGE RELATIVE PERCENT TIME SPENT)

DUTY	ACTIVE 2A733 (N=405)	AFRC 2A733 (N=28)	ANG 2A733 (N=11)
A. PERFORMING GENERAL AIRCRAFT STRUCTURAL MAINTENANCE	14	13	18
B. PERFORMING GENERAL AIRCRAFT AND SUPPORT EQUIPMENT INSPECTIONS	4	5	5
C. PERFORMING ENVIRONMENTAL OR SAFETY ACTIVITIES	6	4	4
D. MAINTAINING EQUIPMENT	6	6	6
E. REPAIRING AND REPLACING TRANSPARENT PLASTICS	*	*	*
F. MAINTAINING AIRCRAFT TUBING AND TUBING ASSEMBLIES	5	5	3
G. INSTALLING AND REMOVING FASTENERS	13	17	18
H. REPAIRING, MODIFYING, AND FABRICATING METAL PARTS AND ASSEMBLIES OF AIRFRAME STRUCTURES	14	18	17
I. PERFORMING ADVANCED COMPOSITE STRUCTURAL AND HONEYCOMB CORE REPAIRS	1	1	*
J. PERFORMING FIBERGLASS LAMINATE AND HONEYCOMB CORE REPAIRS	3	4	1
K. PERFORMING METAL BONDED HONEYCOMB CORE REPAIRS	1	2	*
L. PERFORMING MAINTENANCE ON LOW OBSERVABLE MATERIALS	4	*	*
M. REMOVING CORROSION AND PROTECTIVE COATINGS	7	7	7
N. PERFORMING SEALING OR SEALANT ACTIVITIES	3	4	3
O. APPLYING PROTECTIVE COATINGS	10	6	8
P. PERFORMING CORE AUTOMATED MAINTENANCE SYSTEM (CAMS) ACTIVITIES	3	1	2
Q. PERFORMING GENERAL AIRCRAFT OR CROSS UTILIZATION TRAINING (CUT) ACTIVITIES	*	2	1
R. PERFORMING MANAGEMENT AND SUPERVISORY ACTIVITIES	*	2	*
S. PERFORMING TRAINING ACTIVITIES	*	*	*
T. PERFORMING GENERAL ADMINISTRATIVE AND TECHNICAL ORDER SYSTEM ACTIVITIES	*	*	*
U. PERFORMING GENERAL SUPPLY AND EQUIPMENT ACTIVITIES	2	2	2

* Less than 1 percent

NOTE: Due to rounding, columns may not add to 100 percent

TABLE 26

TIME SPENT ON AFSC 2A7X3 JOB DUTIES ACROSS 5-SKILL LEVEL COMPONENT GROUPS
(AVERAGE RELATIVE PERCENT TIME SPENT)

DUTY	ACTIVE 2A753 (N=863)	AFRC 2A753 (N=271)	ANG 2A753 (N=187)
A. PERFORMING GENERAL AIRCRAFT STRUCTURAL MAINTENANCE	11	13	12
B. PERFORMING GENERAL AIRCRAFT AND SUPPORT EQUIPMENT INSPECTIONS	4	5	5
C. PERFORMING ENVIRONMENTAL OR SAFETY ACTIVITIES	5	4	5
D. MAINTAINING EQUIPMENT	5	6	6
E. REPAIRING AND REPLACING TRANSPARENT PLASTICS	*	*	*
F. MAINTAINING AIRCRAFT TUBING AND TUBING ASSEMBLIES	4	5	4
G. INSTALLING AND REMOVING FASTENERS	12	17	13
H. REPAIRING, MODIFYING, AND FABRICATING METAL PARTS AND ASSEMBLIES OF AIRFRAME STRUCTURES	14	18	17
I. PERFORMING ADVANCED COMPOSITE STRUCTURAL AND HONEYCOMB CORE REPAIRS	2	1	*
J. PERFORMING FIBERGLASS LAMINATE AND HONEYCOMB CORE REPAIRS	4	4	3
K. PERFORMING METAL BONDED HONEYCOMB CORE REPAIRS	2	2	*
L. PERFORMING MAINTENANCE ON LOW OBSERVABLE MATERIALS	3	*	*
M. REMOVING CORROSION AND PROTECTIVE COATINGS	5	7	8
N. PERFORMING SEALING OR SEALANT ACTIVITIES	3	4	4
O. APPLYING PROTECTIVE COATINGS	7	6	11
P. PERFORMING CORE AUTOMATED MAINTENANCE SYSTEM (CAMS) ACTIVITIES	4	1	2
Q. PERFORMING GENERAL AIRCRAFT OR CROSS UTILIZATION TRAINING (CUT) ACTIVITIES	2	2	2
R. PERFORMING MANAGEMENT AND SUPERVISORY ACTIVITIES	6	2	2
S. PERFORMING TRAINING ACTIVITIES	2	*	*
T. PERFORMING GENERAL ADMINISTRATIVE AND TECHNICAL ORDER SYSTEM ACTIVITIES	1	*	*
U. PERFORMING GENERAL SUPPLY AND EQUIPMENT ACTIVITIES	4	2	2

* Less than 1 percent

NOTE: Due to rounding, columns may not add to 100 percent

TABLE 27

TIME SPENT ON AFSC 2A7X3 JOB DUTIES ACROSS 7-SKILL LEVEL COMPONENT GROUPS
(AVERAGE RELATIVE PERCENT TIME SPENT)

DUTY	ACTIVE 2A773 (N=742)		AFRC 2A773 (N=272)		ANG 2A773 (N=180)	
A. PERFORMING GENERAL AIRCRAFT STRUCTURAL MAINTENANCE	7		10		11	
B. PERFORMING GENERAL AIRCRAFT AND SUPPORT EQUIPMENT INSPECTIONS	4		5		5	
C. PERFORMING ENVIRONMENTAL OR SAFETY ACTIVITIES	4		4		5	
D. MAINTAINING EQUIPMENT	3		5		6	
E. REPAIRING AND REPLACING TRANSPARENT PLASTICS	*		*		*	
F. MAINTAINING AIRCRAFT TUBING AND TUBING ASSEMBLIES	3		4		4	
G. INSTALLING AND REMOVING FASTENERS	7		14		10	
H. REPAIRING, MODIFYING, AND FABRICATING METAL PARTS AND ASSEMBLIES OF AIRFRAME STRUCTURES	7		14		14	
I. PERFORMING ADVANCED COMPOSITE STRUCTURAL AND HONEYCOMB CORE REPAIRS	2		*		1	
J. PERFORMING FIBERGLASS LAMINATE AND HONEYCOMB CORE REPAIRS	3		4		4	
K. PERFORMING METAL BONDED HONEYCOMB CORE REPAIRS	1		2		1	
L. PERFORMING MAINTENANCE ON LOW OBSERVABLE MATERIALS	3		*		*	
M. REMOVING CORROSION AND PROTECTIVE COATINGS	2		5		6	
N. PERFORMING SEALING OR SEALANT ACTIVITIES	2		3		3	
O. APPLYING PROTECTIVE COATINGS	3		5		10	
P. PERFORMING CORE AUTOMATED MAINTENANCE SYSTEM (CAMS) ACTIVITIES	4		2		3	
Q. PERFORMING GENERAL AIRCRAFT OR CROSS UTILIZATION TRAINING (CUT) ACTIVITIES	*		1		2	
R. PERFORMING MANAGEMENT AND SUPERVISORY ACTIVITIES	32		14		8	
S. PERFORMING TRAINING ACTIVITIES	4		4		2	
T. PERFORMING GENERAL ADMINISTRATIVE AND TECHNICAL ORDER SYSTEM ACTIVITIES	4		1		2	
U. PERFORMING GENERAL SUPPLY AND EQUIPMENT ACTIVITIES	5		2		4	

* Less than 1 percent

NOTE: Due to rounding, columns may not add to 100 percent

active duty members spend performing managerial and supervisory activities greatly increases as they transition from the 5- to the 7-skill level, while the increase is less robust among AFRC and ANG personnel.

Summary

Active duty ASM career ladder progression reflects a typical pattern of technical duty focus at the lower skill levels, with a broadening of managerial and supervisory duties as members advance to the 7-skill level. While this trend is also present to a lesser extent among AFRC and ANG personnel, due to the limited number of personnel in these components, reservists and guardsmen tend to perform more technical duties regardless of skill level.

TRAINING ANALYSIS

Occupational survey data are one of many sources of information which can be used to develop and revise career ladder training programs. This training analysis consists of active duty first-enlistment personnel, TE and TD, and STS segments. The first segment includes a discussion of the jobs and tasks performed by first-enlistment personnel within the career ladder, and presents several tables depicting the equipment and resources they typically use. The TE and TD segment summarizes senior NCOs' entry-level training priorities and what they believe to be the most difficult tasks performed by ASM personnel. Finally, the STS segment evaluates the career ladder's current STS and recommends several revisions based on survey data.

First-Enlistment Personnel

Knowledge of a career ladder's first-enlistment personnel is a critical prerequisite for conducting an entry-level training curriculum revision. In this study, there are 501 active duty ASM personnel in their first-enlistment (i.e., 1-48 months TAFMS), accounting for 17 percent of the survey sample. As depicted in Figure 2, the majority of these members (63 percent) are in the ASM Cluster, with an additional 15 percent identified in the Corrosion Control Cluster. As shown in Table 28, these members spend their time performing general ASM (14 percent); repairing, modifying, and fabricating metal parts and assemblies of airframe structures (14 percent); installing and removing fasteners (13 percent); and applying protective coatings (10 percent). Table 29 provides a list of representative tasks performed by active duty first-enlistment personnel. Nearly all of these technical tasks are associated with the three core career ladder duty areas (i.e., performing general ASM; installing and removing fasteners; and repairing, modifying, and fabricating metal parts and assemblies of airframe structures).

FIRST-ENLISTMENT AFSC 2A7X3 AIRCRAFT STRUCTURAL MAINTENANCE JOBS

(N=501)

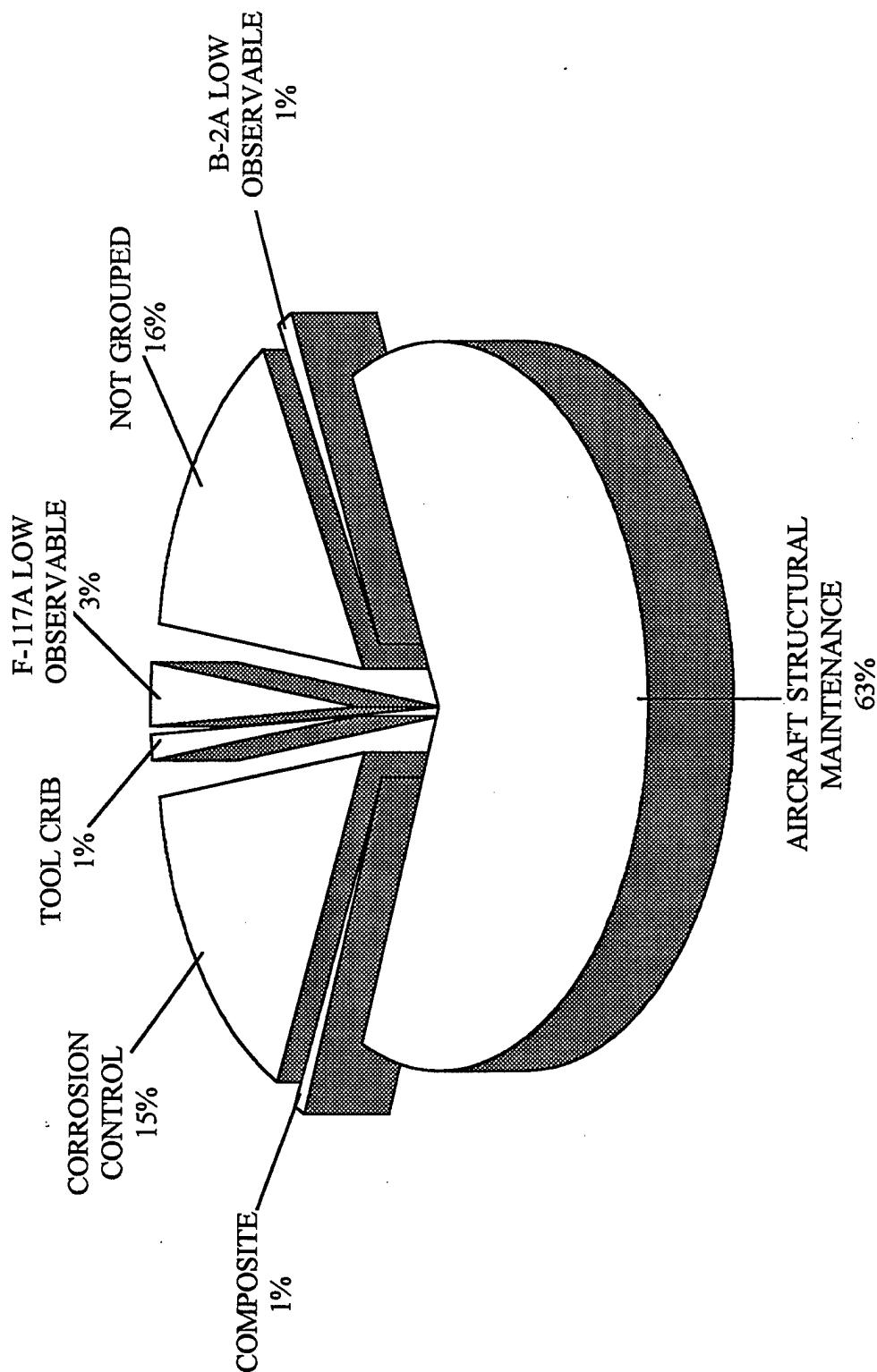


FIGURE 2

TABLE 28

TIME SPENT ON AFSC 2A7X3 JOB DUTIES BY ACTIVE DUTY FIRST-ENLISTMENT AIRMEN
(AVERAGE RELATIVE PERCENT TIME SPENT)

DUTY	FIRST- ENLISTMENT AIRMEN (N=501)
A. PERFORMING GENERAL AIRCRAFT STRUCTURAL MAINTENANCE	14
B. PERFORMING GENERAL AIRCRAFT AND SUPPORT EQUIPMENT INSPECTIONS	4
C. PERFORMING ENVIRONMENTAL OR SAFETY ACTIVITIES	6
D. MAINTAINING EQUIPMENT	6
E. REPAIRING AND REPLACING TRANSPARENT PLASTICS	*
F. MAINTAINING AIRCRAFT TUBING AND TUBING ASSEMBLIES	5
G. INSTALLING AND REMOVING FASTENERS	13
H. REPAIRING, MODIFYING, AND FABRICATING METAL PARTS AND ASSEMBLIES OF AIRFRAME STRUCTURES	14
I. PERFORMING ADVANCED COMPOSITE STRUCTURAL AND HONEYCOMB CORE REPAIRS	1
J. PERFORMING FIBERGLASS LAMINATE AND HONEYCOMB CORE REPAIRS	4
K. PERFORMING METAL BONDED HONEYCOMB CORE REPAIRS	1
L. PERFORMING MAINTENANCE ON LOW OBSERVABLE MATERIALS	4
M. REMOVING CORROSION AND PROTECTIVE COATINGS	7
N. PERFORMING SEALING OR SEALANT ACTIVITIES	3
O. APPLYING PROTECTIVE COATINGS	10
P. PERFORMING CORE AUTOMATED MAINTENANCE SYSTEM (CAMS) ACTIVITIES	3
Q. PERFORMING GENERAL AIRCRAFT OR CROSS UTILIZATION TRAINING (CUT) ACTIVITIES	*
R. PERFORMING MANAGEMENT AND SUPERVISORY ACTIVITIES	*
S. PERFORMING TRAINING ACTIVITIES	*
T. PERFORMING GENERAL ADMINISTRATIVE AND TECHNICAL ORDER SYSTEM ACTIVITIES	*
U. PERFORMING GENERAL SUPPLY AND EQUIPMENT ACTIVITIES	2

* Less than 1 percent

NOTE: Due to rounding, the column may not add to 100 percent

TABLE 29

REPRESENTATIVE TASKS PERFORMED BY ACTIVE DUTY FIRST-ENLISTMENT MEMBERS
(PERCENT MEMBERS PERFORMING)

TASK	FIRST- ENLISTMENT AIRMEN (N=501)
G217 Countersink fastener holes	81
A43 Prepare surfaces by hand sanding	79
G220 Drill fastener holes	78
A42 Prepare surfaces using pneumatic tools	78
A45 Remove masking materials from surfaces	78
H287 Cut rivets	75
A5 Apply masking materials to surfaces	75
C86 Clean personal protective equipment	74
C84 Change respirator cartridges or pre-filters	73
H289 Cut and trim sheet metal	72
G221 Inspect fasteners for flush installation	72
A36 Perform foreign object walks to prevent foreign object damage (FOD)	71
G259 Install or remove pull-through blind rivets	70
A49 Research technical data for repair procedures	68
H342 Stopdrill cracks on sheet metal	68
D115 Clean sheet metal shop equipment	67
G232 Install or remove nut plates, other than gang channel or tridair	67
G224 Inspect installed nut plates	65
G222 Inspect drilled fastener holes	65
H332 Remove damaged areas by chain drilling	65
D114 Clean sheet metal hand tools	65
A3 Apply decals to aircraft or support equipment	65
G266 Microshave fasteners	64
B68 Inspect installed rivets	64
H322 Perform nonflush skin repairs	64
F186 Cut tubing	64
G265 Lay out patterns for fasteners	62
H339 Secure sheet metal with cleco fasteners	62
G246 Install or remove hi-lok fasteners	61
A41 Prepare surfaces using plastic media blasters	61
F187 Deburr, file, or sand tubing	61
H320 Perform flush skin repairs	61
H296 Fabricate repair parts	61
G262 Install or remove solid-shank rivets	61
A44 Remove decals from aircraft or support equipment	61
A7 Apply stencil markings to aircraft or support equipment	61

Active duty ASM first-enlistment personnel use a variety of equipment, resources, and techniques on the job. Tables 30, 31, 33, and 34 collectively list the special fasteners, fastener installation tools, washing materials, corrosion control compounds, protective coatings, chemicals, equipment, tools, and materials used by more than 30 percent of active duty first-enlistment personnel. Table 32 lists the sealing jobs performed by these personnel. Additionally, occupational data found that among active duty first-enlistment personnel, 87 percent used a plastic media blasting facility, 78 percent used plastic media as their primary means of stripping, and 51 percent have never repaired an advanced composite structure.

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

TE and TD data can assist trainers in deciding which tasks to emphasize in entry-level training. As previously described in the **SURVEY METHODOLOGY** section, TE ratings rely on the judgments of senior career ladder NCOs (i.e., primarily E-6s and E-7s) from operational units to develop a rank ordering of those tasks considered important for entry-level training. Similarly, senior NCOs' TD ratings develop a rank ordering of those tasks considered to be difficult to learn to perform. When combined with data showing the percentages of first-enlistment personnel performing these tasks, training personnel can determine if adjustments to the curriculum are necessary. For example, tasks receiving both high TE and TD ratings and moderate to high percentages of members performing may warrant resident training. Those tasks receiving high TE and TD ratings accompanied by low percentages may be more appropriate for OJT at gaining units. While tasks with low TE and TD ratings may be omitted from entry-level training, this decision must be weighted against the percentages of members performing those tasks and the career ladder functional manager's concerns for safety or impact to mission effectiveness.

Table 35 provides a list of those tasks with the highest TE ratings. The percentages of first-job and first-enlistment members performing and TD ratings are also included for each task. In general, these tasks are technical tasks associated with the three core career ladder duty areas (i.e., performing general ASM; installing and removing fasteners; and repairing, modifying, and fabricating metal parts and assemblies of airframe structures). Many of these tasks are performed by high percentages of first-enlistment personnel. Table 36 lists those tasks with the highest TD ratings. The percentages of members performing these tasks for various TAFMS and DAFSC groups and TE ratings are also provided. The list reveals that the tasks rated as most difficult are those relating to advanced composite structural and honeycomb core repairs or making precise measurements (e.g., balancing aircraft flight control surfaces). Generally, these tasks are performed by a small percentage of ASM personnel.

Specialty Training Standard (STS)

To assist in an evaluation of the AFSC 2A7X3 STS (dated June 1994), operational training personnel from the 361st Training Squadron, Detachment 2, NAS Pensacola FL, matched (i.e., linked) tasks from the JI to the appropriate STS item(s). A "matched task" version of the STS

TABLE 30

SPECIAL FASTENERS USED BY MORE THAN 30 PERCENT OF ACTIVE DUTY AFSC 2A7X3
FIRST-ENLISTMENT MEMBERS
(PERCENT MEMBERS USING)

SPECIAL FASTENER	FIRST-JOB (N=249)	FIRST-ENLISTMENT (N=501)
Cherry Maxes	78	82
Blind Rivets, Pull-Through	69	78
Fasteners, Hi-Lok	67	75
Rivets, Solid-Shank	73	75
Fasteners, Jo-Bolt	65	71
Blind Rivets, Mechanical-Lock	48	60
Rivets, Hi-Shear	47	55
Nuts, Self-Locking	43	52
Fasteners, Structural Camloc	40	45
Rivnuts	40	44
Blind Rivets, Friction-Lock	31	41
Bolts, Hi-Torque	34	41
Fasteners, Taper-Lok	36	41
Blind Bolts, Mechanical-Lock (BT-100)	32	37
Blind Bolts, Hi-Shear Threaded	33	35
Bolts, Self-Locking	27	33
Nuts, Blind	24	31
Fasteners, Airlock	29	30
Lockbolts, Stump-Type	29	30

TABLE 31

FASTENER INSTALLATION TOOLS USED BY MORE THAN 30 PERCENT OF ACTIVE DUTY
AFSC 2A7X3 FIRST-ENLISTMENT MEMBERS
(PERCENT MEMBERS USING)

FASTENER INSTALLATION TOOL	FIRST-JOB (N=249)	FIRST-ENLISTMENT (N=501)
Rivet Squeezers, Pneumatic	73	78
Rivet Squeezers, Hand	71	74
Install Tools, Pull-Thru Blind Rivet	64	70
Installation Tools, Jo-Bolt	61	67
Rivet Guns, Pneumatic 4X	51	59
Install Tools, Mech-Lock Blind Rivet	45	53
Rivet Guns, Pneumatic 3X	46	50
Rivet Guns, Pneumatic 6X	48	50
Rivet Guns, Pneumatic 2X	37	42
Squeezers, Portable CP351	37	38
Install Tool-Friction-Lock Blind Rivet	27	34
Install Tools, Mech-Lock Blind Bolt	25	30

TABLE 32

SEALING JOBS PERFORMED BY MORE THAN 30 PERCENT OF ACTIVE DUTY AFSC 2A7X3
FIRST-ENLISTMENT MEMBERS
(PERCENT MEMBERS PERFORMING)

SEALING JOB	FIRST-JOB (N=249)	FIRST-ENLISTMENT (N=501)
Edge Sealing	67	74
Faying Surface Seal	59	68
Fillet Seal	54	64
Pressurized Area Sealing	41	43
Weather Sealing	37	37
Firewall Sealing	27	34

TABLE 33

WASHING MATERIALS, CORROSION CONTROL COMPOUNDS, PROTECTIVE COATINGS, OR
 CHEMICALS USED BY MORE THAN 30 PERCENT OF ACTIVE DUTY AFSC 2A7X3 FIRST-
 ENLISTMENT MEMBERS
 (PERCENT MEMBERS USING)

MATERIAL/COMPOUND/COATING/CHEMICAL	FIRST-JOB (N=249)	FIRST- ENLISTMENT (N=501)
Methyl Ethyl Ketone (MEK)	60	67
Alcohol, Isopropyl	57	57
Aliphatic Naphtha	49	53
Primers, Epoxy, MIL-P-23377	45	53
Sealers, Edge	36	40
Aerosol Sprays	35	39
Microballoons	31	38
Thinners, MIL-T-81772	35	38
Epoxy Resins, MIL-R-9300	27	34
Epoxy Resin Packs	22	34
Alodine 1200	31	33
Coatings, Polyurethane Rain-Erosion-Resistant, MIL-C-83231	27	33
Polyurethane/Catalysts	24	31
Filler, Auto Body	22	30

TABLE 34

EQUIPMENT, TOOLS, OR MATERIALS USED BY MORE THAN 30 PERCENT OF ACTIVE
DUTY AFSC 2A7X3 FIRST-ENLISTMENT MEMBERS
(PERCENT MEMBERS USING)

EQUIPMENT/TOOL/MATERIAL	FIRST-JOB (N=249)	FIRST-ENLISTMENT (N=501)
Abrasive Discs	91	93
Sanders, Pneumatic	88	90
Flashlights	84	86
Masking Tape/Materials	85	86
Common Hand Tools	82	84
Scribes	78	84
Clecos	79	82
Hammers, such as Ballpeen, Chipping, Planishing, Plastic Tip, Rawhide, Setting or Stretching	79	82
Bucking Bars	78	81
Drills, Pneumatic	78	81
Abrasive Papers or Cloths	77	80
Countersinks	77	80
Files, Hand	77	80
Files, Rotary	77	80
Microshavers	75	80
Cutters, Rivet	75	79
Machines, Box and Pan Brake	75	79
Straight Edges	78	79
Aviation Snips	74	78
Machines, Cornice Brake	74	78
Respirators, Cartridge	73	77
Computers	74	76
Cutting Tools-Chisels, Hacksaws or Snips	72	76
Clamps	70	75
Saws, Band	69	75
Shears, Throatless	68	75
Apex Bits	69	74
Microstops	69	74
Rivet Pull Tools, Hand	67	74
Tube Benders, Hand	69	74
Respirators, Air-Supplied (Forced-Air)	66	73
Vacuum Cleaners	69	73
Machines, Shrinking	65	72
Machines, Slip Roll Forming	67	72
Paint Shakers	65	72
Presses, Drill	67	72
Cutters, Tube	65	71

TABLE 34 (CONTINUED)

EQUIPMENT, TOOLS, OR MATERIALS USED BY MORE THAN 30 PERCENT OF ACTIVE
DUTY AFSC 2A7X3 FIRST-ENLISTMENT MEMBERS
(PERCENT MEMBERS USING)

EQUIPMENT/TOOL/MATERIAL	FIRST-JOB (N=249)	FIRST-ENLISTMENT (N=501)
Dies, Dimpling	65	71
Forming Blocks and Dies	65	71
Low-Packs	65	71
Machines, Stretching	63	71
Equipment, Personal Protective	65	70
Mallets, such as Plain-Face or Stretching	66	70
Inspection Mirrors	63	69
Cheesecloth	59	68
Chisels, Cold	62	68
Spray Cans, Aerosol	62	68
Stands, Maintenance	62	68
Abrasive Mats	62	67
Abrasive Wheels	62	67
Razors, Utility	62	67
Squaring Shears, Foot	65	67
Brushes, Paint	62	66
Compressors, Air, other than portable	59	66
Machines, Bar Folder	62	66
Shears, Scroll	63	66
Spray Guns, High-Volume/Low-Pressure	54	66
Equipment, Metal Forming	60	65
Machines, Dimpling Stationary	58	65
Machines, Single-Flaring	59	65
Tube Benders, Production	60	65
Templates	60	64
Brushes, Hand Wire	61	63
Grinders, High-Speed Die	53	63
Machines, Double-Flaring	54	62
Punches, Rotary/Turret	62	62
Gauges, Depth	53	61
Squaring Shears, Power-Operated	59	61
Tack Rags	54	61
Machines, Computerized Stencil Cutting	53	60
Rivet Sets, not Special Swaging Hi-Shear	53	59
Blasters, Abrasive	52	58
Scrapers, Paint	56	58
Aircraft Marking Pencils, MIL-P-83953	56	57
Grinders, Bench	50	57
Cups, Zahn or Ford	47	56

TABLE 34 (CONTINUED)

EQUIPMENT, TOOLS, OR MATERIALS USED BY MORE THAN 30 PERCENT OF
ACTIVE DUTY AFSC 2A7X3 FIRST-ENLISTMENT MEMBERS
(PERCENT MEMBERS USING)

EQUIPMENT/TOOL/MATERIAL	FIRST-JOB (N=249)	FIRST-ENLISTMENT (N=501)
Slip Roll Formers, Hand	54	55
Cable Swagers, Pneumatic Portable	47	54
Heat Lamps, Portable	45	54
Compressors, Air Breathing Portable	49	53
Dies, Flanging	50	53
Knives, Skin	39	53
Tweezers	46	53
Grinders, Pneumatic	44	52
Punches, Whitney	45	52
Saws, Ketts Circle	46	52
Pull Guns, Pneumatic, CP-353	50	51
Kits, Spill	42	50
Saws, Reciprocating	45	50
Tube Benders, Mechanical	44	50
Film, Polyvinyl Alcohol (PVA)	41	49
Permaswage Fittings/Couplings	42	49
Permaswage Tools	41	49
Routers	43	49
Strainers	40	49
Blasting Cabinets	41	47
Magnets	44	47
Punches, other than Dzus Installation, Rotary/ Turret, and Whitney	40	47
Heat Lamps, Infrared	39	46
Devices, Automatic Metal-Shearing	39	45
Fibers, Chopped	35	45
Installation Kits, Permaswage	37	45
Shears, Utility	43	44
Paint Rollers	34	43
Sanders, Power	42	43
Spray Booths, Aircraft	37	43
Spray Booths, Dry	33	43
Spray Guns, Pressure-Feed	42	43
Cutters, Paper	35	42
Machines, Power Flanging	36	42
Paint Curing Booths	36	42
Scrapers, Phenolic	30	42
Calipers, Inside-Outside	34	41
Holders, Dimpling Die	37	41

TABLE 34 (CONTINUED)

EQUIPMENT, TOOLS, OR MATERIALS USED BY MORE THAN 30 PERCENT OF ACTIVE
DUTY AFSC 2A7X3 FIRST-ENLISTMENT MEMBERS
(PERCENT MEMBERS USING)

EQUIPMENT/TOOL/MATERIAL	FIRST-JOB (N=249)	FIRST-ENLISTMENT (N=501)
Restraint or Safety Harnesses	33	41
Heating Blankets	31	40
Magnifying Glasses	36	40
Paint Rolling Pans	31	40
Holders, Rivet-Set Type Apex	38	39
Scales, Triple Beam Balance	34	39
Grinders, Pedestal	38	38
Niblers	31	38
Permaswage Hydraulic Units	34	38
Spray Guns, Suction-Feed	36	38
Anvil/Chuck Mandrels	29	36
Heat Guns	29	36
Swage Sets	29	36
Cores, Aluminum	25	35
Dollies	26	35
Gun Washers, Pneumatic	26	35
Micrometers, Optical Depth	31	35
Respirators, Disposable	31	35
Brush Attachments, Wire	32	34
Machines, Dimpling Portable	30	34
Presses, Arbor	33	34
Pressure Pots	27	34
Rotary Wire Wheels	27	34
Wrenches, Torque	29	34
Knives, Stencil	29	33
Composite Repair Tool Kits	29	32
Cores, Phenolic	25	32
Heaters	26	32
Machines, Manual Stencil Cutting	22	32
Metallic Wools	31	32
Reamers, Taper-Lok	28	32
Lights, Drop	23	31
Spray Guns, Air-Assisted Airless	24	31
Stands, Support Adjustable	24	31
Cherry Pickers	22	30
Dynatube Fittings	30	30
Rotary Flap Wheels	28	30
Sealant Removal and Fairing Tools	26	30

TABLE 35

AFSC 2A7X3 TASKS WITH THE HIGHEST TRAINING EMPHASIS RATINGS

TASK	TE*	1ST JOB (N=249)	1ST ENL (N=501)	TD**
A49 Research technical data for repair procedures	7.49	62	68	5.67
H320 Perform flush skin repairs	7.29	53	61	6.62
G265 Lay out patterns for fasteners	7.08	56	62	4.93
H296 Fabricate repair parts	6.90	54	61	5.74
B68 Inspect installed rivets	6.79	55	64	4.47
H319 Perform combination substructural member and skin repairs	6.78	36	49	6.99
G217 Countersink fastener holes	6.74	78	81	3.81
G220 Drill fastener holes	6.69	77	78	3.49
H322 Perform nonflush skin repairs	6.64	57	64	4.98
H292 Develop layouts for repairs or parts	6.64	50	57	5.57
H297 Hand form metal parts	6.50	49	56	5.78
B64 Identify types of corrosion	6.50	42	52	5.66
F182 Bend tubing using production tube benders	6.38	47	53	6.48
H285 Calculate shop mathematics	6.35	41	49	5.68
G221 Inspect fasteners for flush installation	6.33	65	72	3.32
A50 Research technical data to perform inspections	6.31	36	45	5.70
H313 Lay out sheet metal materials for local manufacturing	6.28	37	47	5.99
G246 Install or remove hi-lok fasteners	6.21	52	61	4.57
O743 Prepare polyurethane coatings for application	6.18	37	46	4.53
H321 Perform foreign object inspections of repair areas	6.11	47	56	4.20
H312 Interpret drawings or blueprints	6.08	31	43	6.66
H343 Trim and fit aircraft skins	6.07	51	58	5.98
J396 Apply vacuum pressure to laminated fiberglass repair surfaces	6.07	28	39	5.15
B60 Classify severity of corrosion	6.04	35	48	5.53
O744 Prepare primers for application	6.00	38	43	4.32
F213 Select tubing and tubing hardware	5.97	40	49	4.89
J393 Apply fiberglass repair materials to damaged areas	5.96	37	46	5.29
J418 Prepare resin mixtures	5.92	29	38	4.68
G266 Microshave fasteners	5.90	57	64	3.96
H332 Remove damaged areas by chain drilling	5.90	56	65	4.39
H289 Cut and trim sheet metal	5.89	68	72	3.39

* The mean TE rating is 2.60 with a standard deviation of 1.55; tasks with TE ratings in excess of 4.15 are considered to be "high" in task emphasis

** The mean TD rating is 5.00 with a standard deviation of 1.00; tasks with TD ratings in excess of 6.00 are considered to be "high" in task difficulty

TABLE 36

AFSC 2A7X3 TASKS WITH THE HIGHEST TASK DIFFICULTY RATINGS

TASK	TD*	IST JOB (N=249)	IST ENL (N=501)	ACTIVE 2A733 (N=405)	ACTIVE 2A753 (N=862)	ACTIVE 2A773 (N=742)	TE**
G268 Precision ream holes for taper-lok fasteners	7.65	13	17	14	18	16	4.72
F179 Bend tubing using computerized tube benders	7.52	14	18	15	15	12	4.22
A35 Perform computer-aided design/computer-aided manufacturing (CAD/ CAM) operations	7.49	21	19	19	13	11	1.56
H283 Balance aircraft flight control surfaces using scale method	7.33	12	17	15	17	15	4.04
I357 Machine graphite/aramid/epoxy hybrid composite materials	7.33	2	2	2	2	3	2.49
H282 Balance aircraft flight controls surfaces using component method	7.30	5	6	6	7	7	3.47
A31 Interpret corrosion control contracts	7.30	10	10	11	9	10	0.99
I355 Machine boron composite materials	7.28	2	2	2	2	2	2.06
H281 Balance aircraft flight control surfaces using calculation method	7.26	10	14	13	15	12	3.68
I356 Machine graphite composite materials	7.23	2	3	3	3	4	2.49
H284 Balance aircraft flight control surfaces using trial weight method	7.20	7	9	9	9	6	3.21
I378 Perform step-joint repairs on graphite/epoxy structures	7.19	6	6	6	6	3	3.82
I358 Machine graphite/boron/epoxy hybrid composite materials	7.19	2	2	2	3	2	2.29
G267 Precision ream holes for taper jo-bolt fasteners	7.19	14	15	14	15	9	4.28
I377 Perform step-joint repairs on aramid/epoxy structures	7.17	5	6	5	7	5	3.53
E168 Polish out transparent plastic surface scratches using power sanders	7.09	5	6	6	6	4	2.51
I376 Perform scarf repairs on graphite/epoxy unidirectional structures	7.07	4	6	6	7	5	3.56
Q791 Establish setup points for optical alignment of aircraft	7.06	1	1	1	1	2	0.50
I372 Perform honeycomb core damage repairs on graphite/epoxy structures	7.05	6	7	7	9	6	3.85
I370 Perform honeycomb core damage repairs on aramid/epoxy structures	7.00	6	9	8	10	7	3.96
I354 Machine aramid composite materials	7.00	2	3	2	3	3	2.93
Q790 Establish alignment reference planes with autoreflexion targets and angle mirrors	6.99	0	1	1	1	0	0.25
H319 Perform combination substructural member and skin repairs	6.99	36	49	44	55	35	6.78

* The mean TD rating is 5.00 with a standard deviation of 1.00; tasks with TD ratings in excess of 6.00 are considered to be "high" in task difficulty

** The mean TE rating is 2.60 with a standard deviation of 1.55; tasks with TE ratings in excess of 4.15 are considered to be "high" in task emphasis

was then printed with the percentages of members performing these tasks displayed for various TAFMS and DAFSC groups. Criteria contained within AETC Instruction (AETCI) 36-2601, paragraph 2.2, and Attachment 2, were used to review the relevance of each STS item with respect to occupational data. All STS items with matched tasks were reviewed; a complete review of the STS was not possible due to the presence of items without matched tasks. Overall, the STS was generally supported by occupational data. However, several items are recommended as candidates for training personnel review and potential revision. These candidates, which are presented in the succeeding paragraphs, were reviewed by Air Force and MAJCOM functional managers at the AFSC 2A7X3 career ladder Utilization and Training Workshop held in October 1997. As a result, the following recommendations may have already been implemented at the time of this report's publication.

AETCI 36-2601 states that any STS item with matched tasks performed by 20 percent or more of first-job (i.e., 1-24 months TAFMS), first-enlistment (i.e., 1-48 months TAFMS), or 3-, 5-, or 7-skill level members is considered to be supported and should be retained in the STS. Only six items relating to spray equipment, transparent plastics, chemicals, and tubing repair were found to be unsupported (see Table 37). These STS items are matched to tasks with low percent members performing and generally moderate to low TE and TD ratings. As a result, they have been identified as candidates for deletion from the STS. Training personnel should carefully review these areas of the STS to determine which are suitable for deletion. Additionally, five items relating to low observables and tubing repair were initially identified as unsupported when compared to TAFMS and DAFSC group data. However, a subsequent review using occupational data associated with the identified job groups provided support for these items. For example, 98 percent of F-117A LO personnel were performing tasks matched to the previously unsupported LO items. Thus, these items were judged to be supported based on job group data.

The STS analysis also identified three items that possessed alphanumeric proficiency codes despite low percentages of first-job, first-enlistment, and 3-skill level members performing matched tasks (see Table 38). For example, STS item 6d(20)(a) concerns the use of conventional spray equipment and requires that entry-level personnel be trained to the "2b" proficiency level (i.e., trainee can determine the step-by-step procedures for doing the task, can do most parts of the task, and requires help on only the hardest parts of the task). However, since only 20 percent of first-enlistment personnel are setting up "pressure-feed spray equipment for use" in the field, the STS item only warrants a "-", indicating training by OJT only. Thus, the items in Table 38 have been identified as candidates for OJT. Training personnel should carefully review these areas of the STS to determine which are suitable for OJT. The review should also consider the TE and TD ratings provided in the table. A more detailed explanation of these ratings is provided in the **SURVEY METHODOLOGY** section.

Table 39 displays unmatched tasks with greater than 20 percent members performing these tasks for various TAFMS and DAFSC groups. These tasks are technical in nature and are associated with a number of technical duties. Due to the moderate to high percentage of members performing these tasks and their high TE ratings, training personnel should review these tasks for possible inclusion in the STS. These tasks may either fit existing items, but were simply not referenced during the match, or they may require the introduction of a new STS item.

TABLE 37

AFSC 2A7X3 SPECIALTY TRAINING STANDARD ITEMS NOT SUPPORTED BY OCCUPATIONAL SURVEY REPORT DATA

STS ITEMS WITH ASSOCIATED MATCHED TASKS	TE*	ATI	1ST JOB (N=249)	1ST ENL (N=501)	ACTIVE 2A733 (N=405)	ACTIVE 2A753 (N=862)	ACTIVE 2A773 (N=742)	TD**
6d(20)(b). Airless (2b)								
O747 Set up air-assisted airless spray equipment for use	4.44	11	9	12	13	10	5	5.21
O749 Set up airless spray equipment for use	4.11	7	6	10	10	8	5	5.21
8c(4). Transparent plastics (-)								
E166 Measure surface scratches and depth on transparent plastics using optical micrometers	3.43	7	6	8	8	8	10	6.55
E176 Visually inspect transparent plastic assemblies	2.83	7	6	7	7	10	12	5.21
E147 Classify damaged transparent plastic assemblies	2.81	7	6	7	6	11	11	5.50
10b(2). Prepare chemicals (-)								
H315 Mix alodine solutions	3.15	7	15	16	16	15	10	4.19
H324 Prepare passivating solutions for application on aluminum	3.06	7	5	7	7	7	5	4.37
H316 Neutralize passivating solutions for aluminum	2.71	7	4	5	5	5	4	4.23
10b(3). Apply chemicals (-)								
A8 Apply neutralizing agents to corrosive material spills	3.68	7	14	16	15	14	8	4.03
H277 Apply passivating solutions to aluminum	3.57	7	10	12	11	15	9	4.34
13c(2). Cryofit (-)								
F207 Perform repairs using cryofit fittings	2.51	2	6	7	7	4	2	6.79
F190 Install and inspect cryofit fittings	2.50	2	8	9	9	5	3	6.52
13c(5). Wiggins (-)								
F197 Install and inspect wiggins fittings	3.56	7	7	11	9	10	8	5.44
F202 Perform repairs to damaged aircraft tubing assemblies using wiggins repair method	2.61	7	6	8	7	6	5	5.79
F212 Perform repairs using wiggins fittings	2.50	2	6	9	8	7	5	5.58

* The mean TE rating is 2.60 with a standard deviation of 1.55; tasks with TE ratings in excess of 4.15 are considered to be "high" in task emphasis

** The mean TD rating is 5.00 with a standard deviation of 1.00; tasks with TD ratings in excess of 6.00 are considered to be "high" in task difficulty

TABLE 38

AFSC 2A7X3 SPECIALTY TRAINING STANDARD ITEMS FOR DAFSC 2A733 PROFICIENCY CODE REVIEW

STS ITEM AND PROFICIENCY CODE WITH ASSOCIATED TASK(S)	TE*	ATI	1ST JOB (N = 249)	1ST ENL (N = 501)	ACTIVE	
					2A733	TD**
					(N = 405)	
3c. Storage and labeling (2b)						
C102 Maintain hazardous waste in marked and secure locations	3.79	7	25	26	28	4.40
C98 Inspect grounding of hazardous waste containers	3.40	3	25	28	29	2.31
C99 Inspect markings or decals on waste containers	3.19	3	19	22	23	3.15
6d(20)(a). Conventional (2b)						
O752 Set up pressure-feed spray equipment for use	4.53	11	18	20	19	4.92
O753 Set up suction-feed spray equipment for use	4.42	11	16	17	16	4.75
O748 Set up gravity-feed spray equipment for use	3.54	7	10	11	11	4.87
9e. CAMS supply interface (SBSS) (B)						
P769 Order and track supplies using standard base supply system (SBSS)	2.99	7	5	4	7	5.20

* The mean TE rating is 2.60 with a standard deviation of 1.55; tasks with TE ratings in excess of 4.15 are considered to be "high" in task emphasis

** The mean TD rating is 5.00 with a standard deviation of 1.00; tasks with TD ratings in excess of 6.00 are considered to be "high" in task difficulty

TABLE 39

EXAMPLES OF TECHNICAL TASKS NOT REFERENCED IN THE AFSC 2A7X3 SPECIALTY TRAINING STANDARD

TASK	TE*	ATI	1ST JOB (N=249)	1ST ENL (N=501)	ACTIVE 2A733 (N=405)	ACTIVE 2A753 (N=862)	ACTIVE 2A773 (N=742)	TD**
H321 Perform foreign object inspections of repair areas	6.11	18	47	56	53	61	42	4.20
G266 Microshave fasteners	5.90	13	57	64	61	63	40	3.96
F215 Visually inspect and evaluate tubing for damage, such as dents, chaffing, cracks, scratches, or corrosion	5.67	12	31	41	37	46	38	4.58
N631 Prepare sealant compounds	5.47	10	37	43	40	50	34	3.91
F193 Install and inspect flared-type fittings	5.22	12	32	41	37	44	34	5.04
N617 Apply fastener seals	5.15	10	39	42	40	44	32	3.90
H290 Design molds, forming blocks, or templates	4.92	12	39	45	42	45	28	6.59
C86 Clean personal protective equipment	4.83	13	69	74	72	65	43	2.60
N632 Prepare surfaces for sealant application	4.74	10	32	40	36	45	30	3.91
C97 Inspect condition and cleanliness of personal protective equipment	4.71	13	43	50	48	50	44	2.70
C107 Store respirators	4.71	13	45	52	51	45	31	2.54
C95 Inspect air-supplied (forced-air) respirator systems	4.58	10	26	32	32	32	27	3.86
N628 Perform fillet sealing applications	4.56	12	25	34	29	43	28	4.06
A38 Perform minor surface damage repairs using sealants and potting compounds	4.33	13	45	50	48	50	36	3.82

* The mean TE rating is 2.60 with a standard deviation of 1.55; tasks with TE ratings in excess of 4.15 are considered to be "high" in task emphasis

** The mean TD rating is 5.00 with a standard deviation of 1.00; tasks with TD ratings in excess of 6.00 are considered to be "high" in task difficulty

JOB SATISFACTION ANALYSIS

An analysis of job satisfaction indicators can provide career ladder functional managers with a better understanding of the factors affecting the overall performance of ASM personnel. The survey included items dealing with job interest, perceived use of talents, perceived use of training, sense of accomplishment, and reenlistment intentions. On the whole, the analysis concluded that ASM personnel are generally content with their jobs. This conclusion can be interpreted from three perspectives as depicted in Tables 40 through 42.

Table 40 compares the responses of active duty ASM personnel to a comparative sample of active duty "mission equipment management" personnel. This group consists of the 2A0X1B, 2A1X1, 2A1X7, 2A3X3, 2A6X1A/B, 2A6X2, 2E1X4, 2E4X1, 2E5X1, 2E6X1, 2E6X2, and 2P0X1 career ladders using occupational data obtained in 1996. Generally, the table reveals the job satisfaction of ASM personnel is only slightly lower than personnel in comparative career ladders, regardless of TAFMS. Table 41 compares the responses of active duty ASM personnel in this study to the personnel surveyed in the 1993 ASM study. Overall, job satisfaction is lower in 1997 than in 1993. Although satisfaction tends to increase with TAFMS, decreases in job interest and sense of accomplishment are notable among first-enlistment personnel. Finally, Table 42 permits comparisons of job satisfaction indicators across job groups. Job satisfaction is notably lower among F-117A LO personnel than any other ASM job group. Additionally, LO personnel (i.e., F-117A and B-2A LO personnel) perceive their training is not being used effectively. Comments from LO personnel attribute this to the nature of their airframes; LO maintenance utilizes little of the knowledge and methods taught in the current ASM operational training curriculum.

IMPLICATIONS

This survey was conducted primarily to provide training personnel with current information on the ASM career ladder for use in revising current career ladder documents and training programs. The career ladder structure was found to be generally stable when compared to the previous study. However, the introduction of the LO and Composite jobs reflect the growing use of nontraditional airframe skins and coatings. ASM career ladder progression is typical of other career ladders, with personnel transitioning from technical to managerial and supervisory roles with increasing experience. The training analysis concluded the STS was supported overall. However, several items were identified for review by training personnel as candidates for revision. Finally, ASM job satisfaction was found to be good, with the exception of F-117A LO personnel.

TABLE 40

**JOB SATISFACTION INDICATORS FOR ACTIVE DUTY AFSC 2A7X3 MEMBERS AND A COMPARATIVE SAMPLE ACROSS TAFMS
(PERCENT MEMBERS RESPONDING)**

JOB SATISFACTION INDICATOR	1-48 MONTHS TAFMS		49-96 MONTHS TAFMS		97+ MONTHS TAFMS	
	2A7X3 (N=501)	COMPARATIVE SAMPLE (N=4,506)	2A7X3 (N=432)	COMPARATIVE SAMPLE (N=3,339)	2A7X3 (N=1,076)	COMPARATIVE SAMPLE (N=9,548)
EXPRESSED JOB INTEREST: INTERESTING	68	75	69	73	75	78
SO-SO	19	16	19	16	16	14
DULL	13	9	11	11	9	8
PERCEIVED USE OF TALENTS: FAIRLY WELL TO PERFECT	79	83	82	83	84	85
NONE TO VERY LITTLE	20	17	18	17	16	15
PERCEIVED USE OF TRAINING: FAIRLY WELL TO PERFECT	86	89	83	84	82	81
NONE TO VERY LITTLE	14	11	17	16	18	18
SENSE OF ACCOMPLISHMENT: SATISFIED	69	73	73	72	74	74
NEUTRAL	16	14	9	13	11	11
DISSATISFIED	15	13	17	15	15	15
REENLISTMENT INTENTIONS: YES OR PROBABLY YES	49	63	70	73	67	78
NO OR PROBABLY NO	50	36	29	26	7	7
WILL RETIRE	0	*	0	*	25	15

* Less than 1 percent

NOTE: Comparative data are from AFSCs 2A0X1B, 2A1X1, 2A1X7, 2A3X3, 2A6X1A/B, 2A6X2, 2E1X4, 2E4X1, 2E5X1, 2E6X1, 2E6X2, and 2P0X1 personnel surveyed in 1996. Due to rounding, columns may not add to 100 percent

TABLE 41

COMPARISON OF CURRENT AND PREVIOUS STUDY JOB SATISFACTION INDICATORS ACROSS TAFMS
(PERCENT MEMBERS RESPONDING)

JOB SATISFACTION INDICATOR	1-48 MONTHS TAFMS		49-96 MONTHS TAFMS		97+ MONTHS TAFMS	
	1997 2A7X3 (N=501)	1993 458X2 (N=1,040)	1997 2A7X3 (N=432)	1993 458X2 (N=620)	1997 2A7X3 (N=1,076)	1993 458X2 (N=1,442)
EXPRESSED JOB INTEREST:						
INTERESTING	68	81	69	80	75	80
SO-SO	19	13	19	13	16	13
DULL	13	6	11	7	9	6
PERCEIVED USE OF TALENTS:						
FAIRLY WELL TO PERFECT	79	88	82	89	84	86
NONE TO VERY LITTLE	20	12	18	11	16	14
PERCEIVED USE OF TRAINING:						
FAIRLY WELL TO PERFECT	86	92	83	88	82	85
NONE TO VERY LITTLE	14	8	17	12	18	15
SENSE OF ACCOMPLISHMENT:						
SATISFIED	69	83	73	81	74	78
NEUTRAL	16	10	9	8	11	9
DISSATISFIED	15	7	17	11	15	13
REENLISTMENT INTENTIONS:						
YES OR PROBABLY YES	49	60	70	73	67	76
NO OR PROBABLY NO	50	39	29	27	7	9
WILL RETIRE	0	0	0	0	25	15

NOTE: AFSC 458X2 Aircraft Structural Maintenance was redesignated AFSC 2A7X3 in 1993

Due to rounding, columns may not add to 100 percent

TABLE 42

JOB SATISFACTION INDICATORS FOR AFSC 2A7X3 MEMBERS ACROSS JOBS
(PERCENT MEMBERS RESPONDING)

JOB SATISFACTION INDICATOR	AIRCRAFT STRUCTURAL MAINTENANCE CLUSTER (ST159)	CORROSION CONTROL CLUSTER (ST075)	SUPERVISORY CLUSTER (ST174)	TOOL CRIB JOB (ST095)	F-117A LOW OBSERVABLE JOB (ST333)
EXPRESSED JOB INTEREST:					
INTERESTING	77	65	85	65	21
SO-SO	15	22	9	23	27
DULL	8	14	4	11	52
PERCEIVED USE OF TALENTS:					
FAIRLY WELL TO PERFECT	88	81	90	82	23
NONE TO VERY LITTLE	12	20	9	18	77
PERCEIVED USE OF TRAINING:					
FAIRLY WELL TO PERFECT	91	82	84	76	14
NONE TO VERY LITTLE	9	18	16	24	87
SENSE OF ACCOMPLISHMENT:					
SATISFIED	77	72	79	62	23
NEUTRAL	11	14	8	14	21
DISSATISFIED	12	14	13	24	56
REENLISTMENT INTENTIONS:					
YES OR PROBABLY YES	75	61	55	55	63
NO OR PROBABLY NO	17	28	7	21	27
WILL RETIRE	8	11	37	21	10

NOTE: Due to rounding, columns may not add to 100 percent

TABLE 42 (CONTINUED)

JOB SATISFACTION INDICATORS FOR AFSC 2A7X3 MEMBERS ACROSS JOBS

JOB SATISFACTION INDICATOR	B-2A LOW		QUALITY		COMPOSITE JOB (ST245)
	OBSERVABLE JOB (ST318)	ASSURANCE JOB (ST388)	TRAINING JOB (ST276)		
EXPRESSED JOB INTEREST:					
INTERESTING	75	85	69		78
SO-SO	9	7	27		17
DULL	16	7	4		6
PERCEIVED USE OF TALENTS:					
FAIRLY WELL TO PERFECT	77	86	81		83
NONE TO VERY LITTLE	23	15	19		17
PERCEIVED USE OF TRAINING:					
FAIRLY WELL TO PERFECT	55	85	85		83
NONE TO VERY LITTLE	45	15	15		17
SENSE OF ACCOMPLISHMENT:					
SATISFIED	64	81	73		89
NEUTRAL	9	0	19		0
DISSATISFIED	27	19	8		11
REENLISTMENT INTENTIONS:					
YES OR PROBABLY YES	66	78	65		56
NO OR PROBABLY NO	20	0	4		33
WILL RETIRE	11	22	31		11

NOTE: Due to rounding, columns may not add to 100 percent

APPENDIX A

**SELECTED REPRESENTATIVE TASKS PERFORMED BY
CAREER LADDER STRUCTURE GROUPS**

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TABLE A1
AIRCRAFT STRUCTURAL MAINTENANCE CLUSTER
(ST159)

TASK		PERCENT MEMBERS PERFORMING (N=1,803)
G217	Countersink fastener holes	98
G220	Drill fastener holes	97
H289	Cut and trim sheet metal	96
H287	Cut rivets	96
G221	Inspect fasteners for flush installation	94
H342	Stopdrill cracks on sheet metal	93
G224	Inspect installed nut plates	92
G259	Install or remove pull-through blind rivets	91
H332	Remove damaged areas by chain drilling	91
G222	Inspect drilled fastener holes	90
H322	Perform nonflush skin repairs	90
H320	Perform flush skin repairs	89
B68	Inspect installed rivets	89
G265	Lay out patterns for fasteners	89
H339	Secure sheet metal with cleco fasteners	88
A49	Research technical data for repair procedures	88
G232	Install or remove nut plates, other than gang channel or tridair	87
H296	Fabricate repair parts	87
H292	Develop layouts for repairs or parts	87
G266	Microshave fasteners	87
H274	Align rivet or special fastener holes	85
F186	Cut tubing	85
D114	Clean sheet metal hand tools	84
G262	Install or remove solid-shank rivets	84
H310	Install or remove hinges	84
A42	Prepare surfaces using pneumatic tools	84
G246	Install or remove hi-lok fasteners	84
H343	Trim and fit aircraft skins	84
H311	Install or remove latches	84
H344	Trim and fit doors or access panels	84
H321	Perform foreign object inspections of repair areas	83
A43	Prepare surfaces by hand sanding	83
H297	Hand form metal parts	83
D123	Inspect sheet metal hand tools	83
F187	Deburr, file, or sand tubing	82

TABLE A2
CORROSION CONTROL CLUSTER
(ST075)

TASK		PERCENT MEMBERS PERFORMING (N=246)
A45	Remove masking materials from surfaces	94
A5	Apply masking materials to surfaces	89
A43	Prepare surfaces by hand sanding	89
C86	Clean personal protective equipment	86
C84	Change respirator cartridges or pre-filters	86
A42	Prepare surfaces using pneumatic tools	84
A7	Apply stencil markings to aircraft or support equipment	83
A44	Remove decals from aircraft or support equipment	81
A3	Apply decals to aircraft or support equipment	80
A41	Prepare surfaces using plastic media blasters	79
O757	Wipe down surfaces prior to painting	76
A27	Fabricate stencil by computer	76
C107	Store respirators	71
C85	Clean paint guns or cups in pneumatic gun washing tanks	70
O693	Apply polyurethane coatings using HV/LP spray guns	69
O743	Prepare polyurethane coatings for application	69
C89	Document amount of paint used	69
B63	Identify causes of spray defects	69
A36	Perform foreign object walks to prevent foreign object damage (FOD)	68
C90	Document amount of paint waste generated	67
B74	Inspect condition of protective coatings	66
M590	Remove protective coatings using pneumatic sanders	65
A25	Dispose of protective coating materials	65
C97	Inspect condition and cleanliness of personal protective equipment	65
O751	Set up HV/LP spray equipment for use	65
M587	Remove protective coatings using plastic media blasting (PMB)	65
B60	Classify severity of corrosion	65
A40	Prepare corrosion control materials prior to use	64
B64	Identify types of corrosion	64
C95	Inspect air-supplied (forced-air) respirator systems	63
C87	Dispose of contaminated protective clothing	62
M565	Remove corrosion using abrasive papers or cloths	62
O703	Apply primers using HV/LP spray guns	61
A21	Dispose of abrasive blasting materials and residue	61
B65	Identify types of protective coating failures	60

TABLE A3
SUPERVISORY CLUSTER
(ST174)

TASK	PERCENT MEMBERS PERFORMING (N=215)
R987 Write recommendations for awards or decorations	94
R957 Inspect personnel for compliance with military standards	94
R982 Supervise military personnel	93
R898 Counsel subordinates concerning personal matters	92
R883 Conduct supervisory performance feedback sessions	91
R963 Participate in general meetings, such as staff meetings, briefings, conferences, or workshops, other than conducting	89
R985 Write performance reports or supervisory appraisals	88
R959 Interpret policies, directives, or procedures for subordinates	87
R902 Determine or establish work assignments or priorities	86
R874 Assign personnel to work areas or duty positions	83
R884 Conduct safety inspections of equipment or facilities	83
R908 Develop or establish work schedules	82
R880 Conduct general meetings, such as staff meetings, briefings, conferences, or workshops	82
R872 Adjust daily maintenance plans to meet operational commitments	81
R881 Conduct self-inspections or self-assessments	81
R940 Evaluate personnel for compliance with performance standards or technical orders	80
R941 Evaluate personnel for promotion, demotion, reclassification, or special awards	80
R958 Inspect shop maintenance activities	80
R907 Develop or establish work methods or procedures	78
R885 Conduct supervisory orientations for newly assigned personnel	75
R944 Evaluate work schedules	75
R945 Evaluate workload requirements	74
R978 Schedule personnel for temporary duty (TDY) assignments, leaves, or passes	74
R900 Determine or establish logistics requirements, such as personnel, equipment, tools, parts, supplies, or workspace	72
R929 Establish performance standards for subordinates	71
R980 Schedule work assignments or priorities	70
R955 Initiate actions required due to substandard performance of personnel	69
R951 Indorse performance reports or supervisory appraisals	68
R891 Coordinate maintenance activities with crew chiefs, dock chiefs, or flightline expeditors	68

TABLE A4
TOOL CRIB JOB
(ST095)

TASK	PERCENT MEMBERS PERFORMING (N=66)
U1069 Inventory consolidated tool kits (CTKs)	91
U1073 Maintain CTKs or tool cribs	89
U1070 Inventory equipment, tools, parts, or supplies, other than CTKs	89
U1072 Maintain benchstock parts or equipment levels	85
U1071 Issue or log turn-ins of equipment, tools, parts, or supplies	85
U1089 Store equipment, tools, parts, or supplies	85
U1062 Evaluate serviceability of equipment, tools, parts, or supplies	82
U1079 Pick up or deliver equipment, tools, parts, or supplies	70
U1059 Coordinate supply-related matters with appropriate agencies	67
U1067 Initiate requisitions for equipment, tools, parts, or supplies	67
U1064 Identify and report equipment or supply problems	65
U1065 Initiate documentation to turn in excess or surplus property	62
P768 Open or close CAMS	59
U1066 Initiate letters of justification for supply-related matters	59
P758 Access CAMS menus and data screens	56
P769 Order and track supplies using standard base supply system (SBSS)	53
U1075 Maintain precision measurement equipment (PME) calibration schedules	53
U1077 Maintain documentation on items requiring periodic inspections	53
D123 Inspect sheet metal hand tools	52
R883 Conduct supervisory performance feedback sessions	45
U1086 Rotate stock to keep old items in front	44
A36 Perform foreign object walks to prevent foreign object damage (FOD)	42
D125 Inspect sheet metal special equipment	41
U1085 Review CA/CRLs	41
C102 Maintain hazardous waste in marked and secure locations	39
R930 Establish procedures for accountability of equipment, tools, parts, or supplies	38
D114 Clean sheet metal hand tools	36
R881 Conduct self-inspections or self-assessments	36
R898 Counsel subordinates concerning personal matters	36
U1060 Coordinate maintenance of equipment with appropriate agencies	35
R884 Conduct safety inspections of equipment or facilities	35
R897 Coordinate disposal of waste materials with hazardous waste monitors	35
A49 Research technical data for repair procedures	35
U1074 Maintain due-in-from maintenance (DIFM) transaction rosters	33
D108 Clean coating hand tools	33

TABLE A5
F-117A LOW OBSERVABLE JOB
(ST333)

TASK	PERCENT MEMBERS PERFORMING (N=52)	
L530	Remove urethane sheet coatings	100
L468	Apply urethane sheet coatings	98
L538	Use straight edges for cutting RAM	98
L463	Apply silicone sheet coatings	98
L528	Remove silicone sheet coatings	98
L516	Prepare titanium surfaces for RAM applications	98
L443	Apply conductive top coatings/putties	96
L522	Remove edge moldings	96
L536	Trim putty to meet flushness requirements	96
L507	Prepare aluminum surfaces for RAM applications	94
L453	Apply fillers	92
L444	Apply "Vee" door and urethane conductive frame edge moldings	92
L445	Apply "Vee" door and urethane plain frame edge moldings	92
L462	Apply silicone edge moldings	92
L505	Perform tape masking of putty seams	90
L459	Apply putty to flushness requirements	90
L451	Apply canopy Kapton materials	90
L508	Prepare composite surfaces for RAM applications	88
L502	Mix fillers	88
L467	Apply transparent film to lens	88
L446	Apply "Vee" door and urethane resistive frame edge moldings	87
L520	Remove BX241 or C199X spray coatings	87
L526	Remove Kapton paper and lens coatings	87
L460	Apply putty to material edges	85
L537	Use protractor for proper repair angles	85
L493	Inspect silicone sheet coatings	85
L496	Inspect urethane edge moldings	85
L466	Apply transfer adhesive to Kapton materials	83
L481	Identify putty type and location usage	81
A1	Apply aerodynamic smoothing compounds	81
L497	Inspect urethane sheet coatings	81
L492	Inspect silicone edge moldings	81
L501	Mix conductive top coatings/putties	79
L461	Apply repair materials to probe transition areas	79
L532	Repair contour of aluminum surfaces	75

TABLE A6

B-2A LOW OBSERVABLE JOB
(ST318)

TASK		PERCENT MEMBERS PERFORMING (N=44)
L452	Apply fairing compounds	95
A5	Apply masking materials to surfaces	93
A43	Prepare surfaces by hand sanding	93
L448	Apply adhesives for application of temporary tapes	91
L447	Apply adhesives for application of permanent tapes	91
L514	Prepare surfaces for application of permanent tapes	91
L443	Apply conductive top coatings/putties	91
L513	Prepare surface for application of foaming compounds	91
L512	Prepare surface for application of fairing compounds	91
L487	Inspect fairing compounds	91
L523	Remove fairing compounds	91
L535	Skieve foaming compounds	91
L457	Apply permanent tapes	89
L515	Prepare surfaces for application of temporary tapes	89
L441	Accomplish alignment procedures for application of temporary tapes	89
L476	Conduct curing operations for application of permanent tapes	89
A45	Remove masking materials from surfaces	89
L440	Accomplish alignment procedures for application of permanent tapes	86
L477	Conduct curing operations for application of temporary tapes	86
L488	Inspect hot trailing edge tiles	86
L524	Remove foaming compounds	86
L501	Mix conductive top coatings/putties	86
L517	Program ATACS bonding units	86
A49	Research technical data for repair procedures	84
L454	Apply foaming compounds	84
L544	Verify damage of temporary tapes	84
L543	Verify damage of permanent tapes	84
L449	Apply adhesives to hot trailing edge tiles	84
L474	Classify damage of hot trailing edge tiles	84
L498	Install hot trailing edge tiles	84
L479	Cure hot trailing edge tiles	84
C84	Change respirator cartridges or pre-filters	84
G259	Install or remove pull-through blind rivets	84
L453	Apply fillers	82
L541	Verify damage of fairing compounds	82

TABLE A7
QUALITY ASSURANCE JOB
(ST388)

TASK	PERCENT MEMBERS PERFORMING (N=27)
B68 Inspect installed rivets	100
R958 Inspect shop maintenance activities	96
B66 Inspect aircraft for cleanliness	96
R884 Conduct safety inspections of equipment or facilities	89
D123 Inspect sheet metal hand tools	89
G224 Inspect installed nut plates	89
R940 Evaluate personnel for compliance with performance standards or technical orders	85
R942 Evaluate quality-control procedures	85
G226 Inspect installed mechanical-lock blind rivets	85
R956 Inspect flightline maintenance activities	85
B73 Inspect areas for corrosion using hand equipment, such as flashlights, probes, or mirrors	85
R933 Evaluate inspection report findings or inspection procedures	85
Q792 Inspect airframes	81
G221 Inspect fasteners for flush installation	81
D124 Inspect sheet metal shop equipment	81
R983 Write inspection reports	81
B74 Inspect condition of protective coatings	81
B67 Inspect aircraft for structural failures	81
C96 Inspect emergency showers	81
J406 Inspect fiberglass repairs for proper bonding	81
G222 Inspect drilled fastener holes	78
U1069 Inventory consolidated tool kits (CTKs)	78
C100 Inspect permanently installed emergency eyewashers	78
C101 Inspect portable emergency eyewashers	78
R881 Conduct self-inspections or self-assessments	74
D125 Inspect sheet metal special equipment	74
B79 Perform periodic visual inspections of support equipment	74
B70 Inspect reshaped areas for defects	74
R960 Investigate accidents or incidents	74
G223 Inspect installed gang channels	74
H308 Inspect installed hinges	74
H309 Inspect installed latches	74
G225 Inspect installed friction-lock blind rivets	70

TABLE A8

TRAINING JOB
(ST276)

TASK		PERCENT MEMBERS PERFORMING (N=26)
R911	Direct training functions	96
S1009	Maintain training records or files	92
S997	Determine training requirements	92
S1016	Schedule training, other than CAMS training	88
S1007	Evaluate progress of trainees	88
S1017	Schedule personnel for training	85
S1001	Develop training programs, plans, or procedures	85
S1000	Develop training materials or aids	81
S996	Counsel trainees on training progress	77
S991	Brief organizational personnel concerning training programs or matters	73
S995	Conduct training conferences, briefings, or debriefings	73
R963	Participate in general meetings, such as staff meetings, briefings, conferences, or workshops, other than conducting	73
S1008	Inspect training materials or aids for operation or suitability	69
S989	Administer or score tests	69
S1006	Evaluate effectiveness of training programs, plans, or procedures	69
S1003	Evaluate personnel to determine training needs	69
R883	Conduct supervisory performance feedback sessions	65
S1002	Establish or maintain study reference files	62
R898	Counsel subordinates concerning personal matters	62
R909	Direct administrative functions	58
S1015	Procure training aids, space, or equipment	54
R941	Evaluate personnel for promotion, demotion, reclassification, or special awards	54
R880	Conduct general meetings, such as staff meetings, briefings, conferences, or workshops	54
R881	Conduct self-inspections or self-assessments	54
R905	Develop self-inspection or self-assessment program checklists	54
P771	Perform CAMS inquiries for training status	50
P768	Open or close CAMS	50
S993	Conduct formal course classroom training	50
R985	Write performance reports or supervisory appraisals	50
R982	Supervise military personnel	50
S990	Assign formal course instructors or on-the-job training (OJT) trainers or certifiers	50

TABLE A9
COMPOSITE JOB
(ST245)

TASK	PERCENT MEMBERS PERFORMING (N=18)	
J393	Apply fiberglass repair materials to damaged areas	100
J404	Finish fiberglass repairs	100
J418	Prepare resin mixtures	100
J397	Clean damaged fiberglass structural areas with solvents	94
J406	Inspect fiberglass repairs for proper bonding	94
C84	Change respirator cartridges or pre-filters	94
J401	Cure fiberglass repairs with infrared heat lamps	89
J396	Apply vacuum pressure to laminated fiberglass repair surfaces	89
J394	Apply parting agents, such as polyvinyl alcohol (PVA)	89
J422	Tap test fiberglass to determine defects	89
A49	Research technical data for repair procedures	89
G217	Countersink fastener holes	89
J398	Cure fiberglass repairs with air-circulating ovens	83
J420	Repair or replace fiberglass constructed assemblies	83
D111	Clean composite hand tools	83
J403	Cut and shape replacement fiberglass, other than by using core slicer assemblies	83
K423	Apply vacuum pressure to metal bonded honeycomb repair surfaces	83
J407	Inspect and classify fiberglass honeycomb damages	83
K439	Tap test metal bonded honeycomb structures to determine defects	83
K435	Perform potting compound repairs to metal bonded honeycomb cores	83
J395	Apply direct pressure to fiberglass repair surfaces	78
D112	Clean composite shop equipment	78
J419	Remove moisture from fiberglass honeycomb assemblies	78
J408	Inspect and classify fiberglass laminated damages	78
K436	Prepare adhesives for metal bonded honeycomb repairs	78
K437	Remove moisture from metal bonded honeycomb assemblies	78
J405	Inject resin into skin delaminated areas	78
J411	Perform solid laminate component repairs	72
J416	Perform scarf repairs on fiberglass structures	72
K426	Cure metal bonded honeycomb repairs with infrared heat lamps	72
K428	Cut and shape replacement metal honeycomb cores, other than by using core slicer assemblies	72
J417	Perform step-joint repairs on fiberglass structures	72
K433	Perform hot bonding of aluminum to metal bonded honeycomb panels	72

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