UNITED STATES AIR FORCE

OCCUPATIONAL SURVEY REPORT

ENGINEERING

AFSC 3E5X1

AFPT 90-3E5-073

APRIL 1997

OCCUPATIONAL MEASUREMENT SQUADRON
AIR FORCE OCCUPATIONAL MEASUREMENT SQUADRON
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PREFACE

This report presents the results of an Air Force Occupational Survey of the Engineering career ladder, Air Force Specialty Code (AFSC) 3E5X1. Authority for conducting occupational surveys is contained in AFI 36-2623. Computer products used in this report are available for use by operations and training officials.

The survey instrument was developed by Mr. Robert E. Boerstler, Inventory Development Specialist, with computer programming support furnished by Ms. Jeannie C. Guesman. Mr. Richard G. Ramos provided administrative support. Second Lieutenant Scott M. Foley, Occupational Analyst, analyzed the data and wrote the final report. This report has been reviewed and approved by Lieutenant Colonel Roger W. Barnes, Chief, Airman Analysis Section, Occupational Analysis Flight, Air Force Occupational Measurement Squadron (AFOMS).

Copies of this report are distributed to Air Staff sections, major commands, and other interested training and management personnel. Additional copies are available upon request to AFOMS, Attention: Chief, Occupational Analysis Flight (OMY), 1550 5th Street East, Randolph AFB Texas 78150-4449 (DSN 487-6623).

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SUMMARY OF RESULTS

1. **Survey Coverage**: Active-Duty (AD), Air National Guard (ANG) and Air Force Reserve (AFRES) personnel in the Engineering career ladder were surveyed to provide current job and task data. Survey results are based on responses from 1,022 members (54 percent of the total assigned personnel). The sample satisfactorily represents the overall career ladder population of the AD, ANG, and AFRES.

2. **Specialty Jobs**: Seven jobs were identified in the career ladder structure analysis. Six of the jobs were very technical in nature, while the seventh job was strictly supervisory in nature. Survey data indicate personnel are performing jobs as envisioned in the current classification structure, with most sample respondents performing similar job inventory (JI) tasks.

3. **Career Ladder Progression**: Progression in this career ladder follows a regular pattern of highly technical job focus at the lower skill levels, with a broadening into supervision and management at the 7- and 9-skill levels. Additionally, the only 3-skill level personnel represented in the study were serving on active duty and the major difference among the 5-skill level airmen was the increase in Mobility functions in the ANG and AFRES. With the 7-skill level groups, the data showed similar results as their junior counterparts at the 5-skill level, but there is an increase in supervisory functions. Furthermore, ANG 7-skill level personnel are doing very little supervision, but are spending much of their time in the Engineering and Mobility clusters. At the 9-skill level, the data shows a decrease in representation in the Mobility Cluster and an abundance of supervisors in all three components. Skill-level progression for members of this AFSC is typical of most career ladders. All skill level groups responded in like numbers to most of the technical tasks in the JI.

4. **AFMAN 36-2108 *Specialty Description***: The description accurately describes the technical and supervisory aspects of jobs at the various levels.

5. **Training Analysis**: Survey data compiled in the form of a special Utilization & Training Workshop Extract was provided to October 1995 workshop participants. The occupational survey report data were reviewed and utilized to evaluate, as well as to update, such items as 3-, 5-, and 7-skill level Specialty Qualification (AFMAN 36-2108 *Specialty Description*), Specialty Training Standard, and the Career Field Education and Training Plan for a 1996 publication. These items plus several others are supported by survey data.

Implications: Survey results indicate the present classification structure is supported by survey data. Career ladder training documents are well supported by survey data and the overall training system is perceived to be working well based on career ladder member responses.

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OCCUPATIONAL SURVEY REPORT (OSR)
ENGINEERING
(AFSC 3E5X1)

INTRODUCTION

This is a report of an occupational survey of the Engineering career ladder conducted by the Air Force Occupational Measurement Squadron (AFOMS). Survey data will be used to identify current utilization patterns among career ladder personnel and evaluate career ladder documents and training programs. The last OSR published for Engineering was in August 1990 for AFSC 553X0.

Background

As described in the AFMAN 36-2108 *Specialty Description*, dated 31 October 1993, Engineering personnel conduct site location surveys and preliminary engineering inspections and investigations. Additionally, these airmen plan and design site layout, considering factors such as environmental criteria, topography, soil, survey data of area, location of existing structures, and availability of utilities.

Furthermore, these engineering personnel perform engineering studies and designs. They plan and prepare cost estimates, performance work statements, and specifications for existing and proposed facilities. These airmen design rigid or flexible pavements, not subject to extreme climate or loading.

Engineers perform continuous inspection and surveillance of projects being accomplished by contract. These airmen perform standardized tests on soils, asphalt, and concrete. Lastly, they perform command post duties including command and control, technical assistance, and resource control.

Personnel entering the AFSC 3E5X1 career ladder must complete the apprentice course located at Fort Leonard Wood, MO. This 10-week, 2-day course trains members for the required skills, such as: mathematics as applied to surveying; principles, procedures, and performance of plane surveying; use and care of surveying equipment; basic drafting fundamentals; use and care of drafting equipment; multiview and engineering drawings; Safety; Air Force publications; engineering publications; methods of reproducing drawings and plans; operation of reproduction machines; and basic auto Computer Aided Design and Drafting (CADD) software operation.

At the present time, the course Plan of Instruction is being rewritten and updated. Entry into this career ladder currently requires an Armed Forces Vocational Aptitude Test Battery score of GENERAL - 48; a strength factor of "G" (weight lift of 70 lbs) is required as well.

SURVEY METHODOLOGY

Inventory Development

The data collection instrument for this occupational survey was USAF Job Inventory (JI) Air Force Personnel Test 90-3E5-073 dated February 1995. A tentative task list was prepared after reviewing pertinent career ladder publications and directives, pertinent tasks from the previous survey instrument, and data from the last OSR. The preliminary task list was refined and validated through personal interviews with 31 subject-matter experts at the technical training location and at the following installations:

BASE	UNIT VISITED
Sheppard AFB TX	366 TRS/TOC
Hurlburt FLD FL	HQ AFSOC/CEX
Tyndall AFB FL	HQ AFCESA/CESC
Castle AFB CA	93 CES/CEE
Nellis AFB NV	558 CES/CC 820 RED HORSE/CEES

The resulting JI contains a comprehensive listing of 641 tasks grouped under 16 duty headings, and a background section requesting such information as grade, major command (MAJCOM) assigned, organizational level, job title, functional area, and primary surveying equipment used in present job and during a contingency.

Survey Administration

From November 1995 through March 1996, Survey Control Monitors at base training units worldwide administered the inventory to eligible AFSC 3E5X1 personnel. Job incumbents were selected from a computer-generated mailing list obtained from personnel data tapes maintained by the Air Force Personnel Center, Randolph AFB TX. Military members eligible for the survey

consisted of the total Active Duty (AD), Air National Guard (ANG) and Air Force Reserve (AFRES) assigned 3-, 5-, 7-, and 9-skill level population, excluding the following: (1) hospitalized personnel; (2) personnel in transition for a permanent change of station; (3) personnel retiring within the time the inventories were administered to the field; and (4) personnel in their job less than 6 weeks.

Each individual who completed the inventory first completed an identification and biographical information section and then checked each task performed in his or her current job. After checking all tasks performed, each member then rated each of these tasks on a 9-point scale, showing relative time spent on that task, as compared to all other tasks checked. The ratings ranged from 1 (very small amount time spent) through 5 (about average time spent) to 9 (very large amount time spent). To determine relative time spent for each task checked by a respondent, all of the incumbent's ratings are assumed to account for 100 percent of his or her time spent on the job and are summed. Each task rating is then divided by the total task ratings and multiplied by 100 to provide a relative percentage of time for each task. This procedure provides a basis for comparing tasks in terms of both percent members performing and average percent time spent.

Survey Sample

Military personnel were selected to participate in this survey so as to ensure an accurate representation across MAJCOMs and paygrade groups. Table 1 reflects the percentage distribution, by MAJCOM, of assigned active duty AFSC 3E5X1 personnel as of November 1995. The 1,022 military respondents in the final sample represent 54 percent of the total assigned personnel and 59 percent of the total personnel surveyed. Table 2 reflects the paygrade distribution for AFSC 3E5X1 personnel. Overall, the survey sample is considered to be a satisfactory representation of the overall career ladder population.

TABLE 1

MAJCOM DISTRIBUTION OF ACTIVE DUTY 3E5X1 PERSONNEL

COMMAND	PERCENT OF ASSIGNED*	PERCENT OF SAMPLE
ACC	28	31
AFMC	16	18
PACAF	15	16
AMC	13	12
AETC	8	8
AFSPC	8	6
USAFE	6	5
AFSOC	2	2
OTHER	4	2
TOTAL	100	100

	ACTIVE DUTY	AIR NATIONAL GUARD	AIR FORCE RESERVE	TOTAL
Total Assigned:	1,041	542	319	1,902
Total Eligible/Surveyed:	960	507	301	1,768
Total in Survey Sample:	694	216	112	1,022
Percent Assigned in Sample:	66%	40%	35%	54%
Percent Surveyed in Sample:	72%	43%	37%	59%

* All data are as of November 1995

TABLE 2

PAYGRADE DISTRIBUTION OF SAMPLE

PAYGRADE	PERCENT OF ACTIVE DUTY ASSIGNED*	PERCENT OF ACTIVE DUTY IN SAMPLE	PERCENT OF AIR RESERVE ASSIGNED*	PERCENT OF AIR RESERVE IN SAMPLE	PERCENT OF AIR GUARD ASSIGNED*	PERCENT OF AIR GUARD IN SAMPLE
E-1 to E-3	16	17	1	0	4	5
E-4	24	27	11	9	18	17
E-5	23	22	41	35	28	27
E-6	18	16	19	27	21	22
E-7	17	16	19	18	20	22
E-8	2	3	9	12	9	7

* As of November 1995

Task Factor Administration

Job descriptions alone do not provide sufficient data for making decisions about career ladder documents or training programs. Task factor information is needed for a complete analysis of the career ladder. To obtain the needed task factor data, selected senior AFSC 3E5X1 personnel (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. This information is used in a number of different analyses discussed in more detail within the report. In this study, TE and TD information were gathered from ANG, AFRES, and AD personnel.

Training Emphasis (TE): TE is a rating of the amount of emphasis that should be placed on tasks in entry-level training. The 93 senior NCOs who completed a TE booklet were asked to select tasks they felt required some sort of structured training for entry-level personnel, and then indicate how much training emphasis these tasks should receive, from 1 (extremely low emphasis) to 9 (extremely high emphasis). Structured training is defined as training provided at resident technical schools, field training detachments, mobile training teams, formal on-the-job training (OJT), or any other organized training method. Interrater agreement for these 93 raters was acceptable. Separate reviews of ratings across the three component groups showed no differences; thus, TE ratings are reported on the total sample of raters. The average TE rating was 2.17, with a standard deviation of 1.62. Any task with a TE rating of 3.79 or above is considered to have high TE.

Task Difficulty (TD): TD is an estimate of the amount of time needed to learn how to do each task satisfactorily. The 41 senior NCOs who completed TD booklets were asked to rate the difficulty of each task using a 9-point scale (extremely low to extremely high). Interrater reliability was acceptable. As with the TE raters, separate reviews of the ratings by component group was conducted and no differences were found. Therefore, TD ratings are reported on the total sample of raters. Ratings were standardized so tasks have an average difficulty of 5.00 and a standard deviation of 1.00. Any task with a TD rating of 6.00 or above is considered to be difficult to learn.

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

SPECIALTY JOBS
(Career Ladder Structure)

A USAF Occupational Analysis begins with an examination of the career ladder structure. The structure of jobs within the Engineering career ladder was examined on the basis of similarity of tasks performed and the percent of time spent ratings provided by job incumbents, independent of other specialty background factors.

Each individual in the sample performs a set of tasks called a *Job*. For the purpose of organizing individual jobs into similar units of work, an automated job clustering program is used. This hierarchical grouping program is a basic part of the Comprehensive Occupational Data Analysis Program system for job analysis. Each individual job description (all the tasks performed by that individual and the relative amount of time spent on those tasks) in the sample is compared to every other job description in terms of tasks performed and the relative amount of time spent on each task in the JI. The automated system is designed to locate the two job descriptions with the most similar tasks and percent time ratings and combine them to form a composite job description. In successive stages, new members are added to initial groups, or new groups are formed based on the similarity of tasks performed and similar time ratings in the individual job descriptions.

Overview of Specialty Jobs

The analysis procedure described above identified seven jobs within the survey sample. The division of jobs performed by DAFSC 3E5X1 personnel is illustrated in Figure 1, and a listing of those jobs is provided below. The group (GP) or stage (ST) number shown beside each title is a reference to computer-printed information; the number of personnel in each group or stage (N) is also shown.

I. ENTRY-LEVEL CADD DRAFTSMAN JOB (ST285, N=10)

II. ENTRY-LEVEL DRAFTSMAN/SURVEYOR JOB (ST104, N=31)

III. ENGINEERING CLUSTER (ST103, N=376)

IV. MOBILITY CLUSTER (GP108, N=74)

V. CONTRACT MANAGEMENT CLUSTER (ST029, N=265)

VI. GROUND RADAR EVALUATOR JOB (ST315, N=7)

VII. SUPERVISOR CLUSTER (ST052, N=72)

The respondents forming these jobs account for 83 percent of the survey sample. The remaining 17 percent, for one reason or another, did not fall into one of these jobs. Examples of job titles for these people include Systems Administrator, Environmental Permits Manager, Base Programmer, EIAP Program Manager, and Dorm Manager.

AFSC 3E5X1 CAREER LADDER JOBS
(N = 1,022)

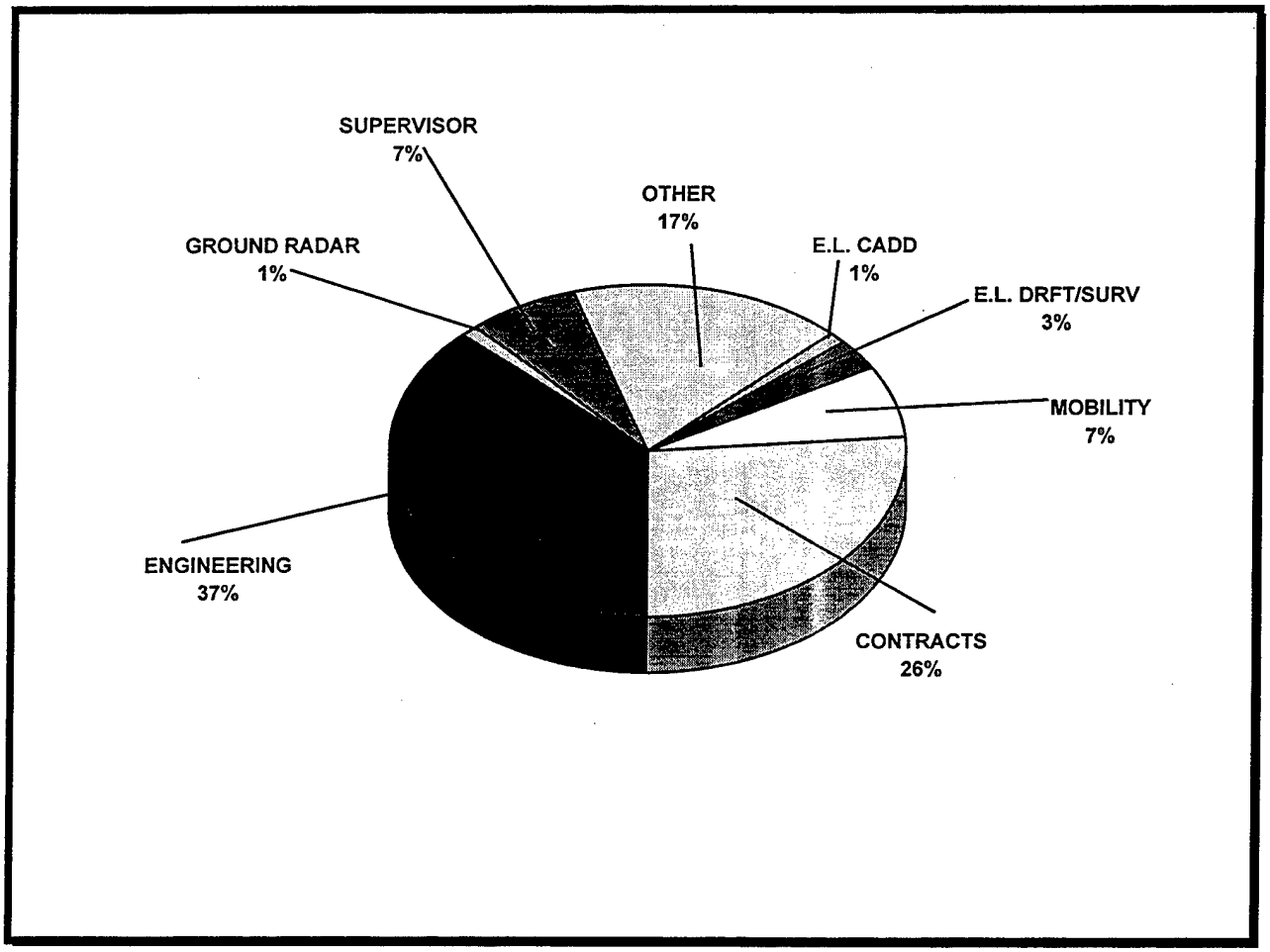

FIGURE 1

Group Descriptions

The following paragraphs contain brief descriptions of the jobs identified through the career ladder structure analysis. Table 3 presents the relative time spent on duties by members of these specialty jobs. Selected background data for these jobs are provided in Table 4. Representative tasks for all the groups are contained in Appendix A.

I. ENTRY-LEVEL CADD DRAFTSMAN JOB (ST285, N=10). The 10 airmen forming this job (1 percent of the survey sample) are primarily young active duty airmen new to the career ladder. They perform very general tasks and primarily use a CADD system to complete their work. Their responsibilities include such things as updating record or as-built drawings, performing fundamental drafting practices, and developing modifications from existing drawings, all utilizing a CADD system. Furthermore, 62 percent of their time is spent performing CADD activities, highest of all the jobs identified (see Table 3).

Performing an average of only 18 tasks, commonly performed tasks include:

- interpret engineering sketches
- interpret blueprints
- complete architectural plans using CADD system
- complete electrical plans using CADD system
- complete civil plans using CADD system
- measure irregular lines using CADD system
- manually input field data into CADD system
- complete structural plans using CADD system
- draw charts using CADD system
- complete mechanical plans using CADD system

These airmen hold either a 3-skill level (60 percent) or a 5-skill level (40 percent). Sixty percent are serving in their first enlistment. The average time in the career field for these AD airmen is a little less than 4 years. The predominant paygrades are E-2 through E-4. One-hundred percent of these members report they are assigned to units within the United States.

II. ENTRY-LEVEL DRAFTSMAN/SURVEYOR JOB (ST104, N=31). The 31 airmen forming this job (3 percent of the survey sample) are similar to the above group, but these personnel have a broader job (41 versus 18 tasks) involving both surveying and drafting activities, with far less use of CADD (see Table 3). Additionally, they are more involved with contingency activities (see Table 3). Personnel in this job are both AD (65 percent) and ANG (32 percent), with only 3 percent in AFRES. Their responsibilities include the reproduction of drawings, as well as the setting up of surveying equipment.

Distinct tasks performed include:

- measure horizontal distances using pacing technique
- reproduce drawings
- measure horizontal distances using tapes
- measure vertical distances or heights
- measure horizontal angles
- measure horizontal distances using electronic equipment
- interpret blueprints
- perform fundamental drafting practices
- record field notes using standard surveying procedures
- communicate using standardized hand signals

As with the Entry-Level CADD Draftsman Job described above, the predominant paygrades for this job are E-3 and E-4. For the AD airmen who make up this job, their average time in service is 4 years, with 90 percent of all AD, ANG and AFRES personnel assigned within the United States.

III. ENGINEERING CLUSTER (ST103, N=376). The 376 airmen forming this cluster (37 percent of the survey sample and the largest job identified) are responsible for the core work of the career ladder. These individuals are involved with all aspects of the engineering job, from reproducing drawings and interpreting blueprints to inspecting mobility bags or kits. Their responsibilities include setting up surveying equipment, maintaining computer drawing files, and completing civil plans using a CADD system. Furthermore, they perform an average of 134 tasks, far more than any other group. Distinct tasks performed include:

- measure horizontal distances using tapes
- interpret engineering sketches
- perform airfield damage assessments
- maintain drawing files, other than computer drawing files
- plot airfield damage assessments
- select MOS candidates
- erect tents
- record field notes using standard surveying procedures
- maintain surveying equipment
- maintain computer drawing files

Personnel from all three component groups are involved in this cluster, with AD personnel comprising 52 percent, ANG personnel comprising 32 percent, and AFRES personnel comprising 16 percent (see Table 4). The predominant paygrades in this job are E-4 and E-5. Performing an average of 134 tasks, the AD personnel hold a 5- (48 percent) or 7-skill level (27 percent). Forty percent of these airmen report supervising, second highest of any job group. Average time in service for AD members is 9 years.

IV. MOBILITY CLUSTER (GP108, N=74). Compromising 7 percent of the survey sample, the majority of these 74 airmen are assigned to the ANG (51 percent) and the AFRES (30 percent), and are performing a series of tasks peculiar to Mobility (note Duty O (Performing General Contingency Activities) in Table 3). While most of their time is spent performing mobility-specific tasks, they still perform engineering tasks in addition to their Mobility functions (see Table 3). Members perform an average of 54 tasks, which include:

- erect tents
- perform airfield damage assessments
- don or doff chemical warfare personal protective clothing
- interpret blueprints
- set up surveying equipment
- lay out minimum operating strip (MOS) centerlines
- select MOS candidates
- identify bomb crater damage locations
- compute repair quality criteria (RQC) for rapid runway
- reproduce drawings

Sixty-two percent of these members hold a 5-skill level, while 37 percent hold a 3- or 5-skill level. Additionally, the AD airmen have an average time in the career field of 9 years. The predominant paygrade is E-5. Furthermore, 96 percent of these members report they are assigned to units within the United States.

V. CONTRACT MANAGEMENT CLUSTER (ST029, N=265). The 265 airmen forming this cluster (26 percent of the survey sample and the second largest specialty job group) are performing an average of 96 tasks. Their job is unique in that they spend most of their time (45 percent) performing contract management activities (see Duty K in Table 3). Personnel making up this job are almost exclusively active duty (98 percent). Their responsibilities include such things as evaluating contractor compliance, conducting daily on-site visits, and identifying contractor performance discrepancies.

In addition to the above, distinctive tasks performed include:

- maintain daily inspection records
- maintain records of contract changes
- inspect and record construction projects for compliance with plans and specifications
- document construction activities
- conduct contract final acceptance inspections
- coordinate construction with appropriate agencies
- evaluate data on AF Forms 3000 (material approval submittal)
- evaluate data on AF Forms 3064 (contract progress schedule)
- identify on-site or design deficiencies
- write official memorandums to contracts

The majority of these airmen hold either a 5- (48 percent) or a 7-skill level (42 percent). Only 13 percent are in their first enlistment. The average time in the career field for the AD airmen is 12 years. The predominant paygrades are E-5 and E-6. Seventy-seven percent of these members report they are assigned to units within the United States.

VI. GROUND RADAR EVALUATOR JOB (ST315, N=7). The seven airmen forming this job (1 percent of the survey sample) perform technical tasks dealing with ground radar. Their responsibilities include analyzing radar and radio lines of sight in relation to ground elevation and computing geographical locations using the global positioning system. All airmen in this job are active duty and spend the majority of their duty time performing Duty G (Performing Surveying Activities) and Duty N (Performing Ground Radar Evaluations). Their distinct tasks performed include:

- collect physical radar site data
- coordinate obtaining TDY orders, passports, or visas with appropriate agencies
- measure horizontal distances using tapes
- calculate magnetic declinations
- compute level circuit data
- set up surveying equipment
- assemble background reconnaissance information on sites
- record field notes using radar evaluation procedures
- establish baselines
- draw pictorial site plans

The predominant paygrade in this job is E-5. Eighty-six percent hold the 5-skill level. Their average time in service is 11 years. All are assigned to Hill AFB UT.

VII. SUPERVISOR CLUSTER (ST052, N=72). The 72 members of this job are responsible for most of the work area or work center supervision tasks. These individuals are essentially shop or zone foremen, section chiefs, or work center supervisors. The cluster is represented by all three components: AD (67 percent), ANG (15 percent), and AFRES (18 percent). Sixty-two percent of their job time is spent organizing and planning, directing and implementing, inspecting and evaluating, and training (see Table 3, Duties A, B, C, and D). They perform an average of 96 tasks. Distinctive tasks performed include:

- participate in general meetings, such as staff meetings, briefings, conferences, and workshops, other than conducting
- determine or establish work priorities
- supervise engineering journeymen (AFSC 3E551)
- plan or schedule work assignments or priorities
- evaluate personnel for compliance with performance standards
- establish performance standards for subordinates
- write EPRs
- conduct on-the-job training (OJT)
- evaluate personnel for promotion, demotion, reclassification, or special awards
- counsel subordinates on personal matters

Seventy-eight percent of the members in this specialty job hold either a 7- or 9-skill level. The predominant paygrades are E-7 and E-8. The AD members' average time in service is 15 years. Ninety-one percent of these members report supervising subordinates.

Comparison of Current Jobs to Previous Survey Findings

The results of the specialty job analysis were compared to those of the last Engineering Assistant OSR published in 1990. As shown in Table 5, five of the seven jobs in the current study were also identified in the 16 jobs reported in 1990. The two entry-level jobs in the 1996 study were the only jobs not specifically identified in the last study, while two jobs identified in the previous study (Instructor and Base Survivability) were not identified in the current study. Overall, the Engineering career ladder has remained fairly stable since the last survey.

TABLE 3

AVERAGE PERCENT TIME SPENT ON DUTIES BY AFSC 3E5X1 JOB GROUPS
(RELATIVE PERCENT OF JOB TIME)

	DUTIES	ENTRY-LVL CADD DRAFTSMAN JOB (ST285, N=10)	ENTRY-LVL DRAFTSMAN/ SURVEYOR JOB (ST104, N=31)	ENGINEERING CLUSTER (ST103, N=376)	MOBILITY CLUSTER (GP108, N=74)
A	ORGANIZING AND PLANNING	6	2	6	4
B	DIRECTING AND IMPLEMENTING	1	1	3	2
C	INSPECTING AND EVALUATING	3	1	5	2
D	TRAINING	2	1	5	3
E	PERFORMING GENERAL ADMINISTRATIVE ACTIVITIES	3	3	3	1
F	PERFORMING SUPPLY AND EQUIPMENT ACTIVITIES	3	2	4	3
G	PERFORMING SURVEYING ACTIVITIES	4	34	21	17
H	PERFORMING MANUAL DRAFTING ACTIVITIES	12	18	11	14
I	PERFORMING COMPUTER AIDED DESIGN AND DRAFTING (CADD) SYSTEM ACTIVITIES	62	21	14	8
J	PERFORMING PROJECT PLANNING ACTIVITIES	1	1	1	1
K	PERFORMING CONTRACT MANAGEMENT ACTIVITIES	*	*	2	1
L	PERFORMING COST-ESTIMATE AND ANALYSIS ACTIVITIES	*	*	*	*
M	PERFORMING MATERIAL TESTING	1	*	1	*
N	PERFORMING GROUND RADAR EVALUATIONS	1	*	*	*
O	PERFORMING ENGINEERING SPECIFIC CONTINGENCY ACTIVITIES	2	6	9	18
P	PERFORMING GENERAL CONTINGENCY ACTIVITIES	*	10	14	25

* Denotes less than 1 percent

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

TABLE 3 (CONTINUED)

AVERAGE PERCENT TIME SPENT ON DUTIES BY AFSC 3E5X1 JOB GROUPS
(RELATIVE PERCENT OF JOB TIME)

DUTIES	CONTRACT MANAGEMENT CLUSTER (ST029, N=265)	GROUND RADAR EVALUATORS (ST315, N=7)	SUPERVISOR CLUSTER (ST052, N=72)
A ORGANIZING AND PLANNING	5	4	20
B DIRECTING AND IMPLEMENTING	2	2	13
C INSPECTING AND EVALUATING	9	6	17
D TRAINING	2	8	12
E PERFORMING GENERAL ADMINISTRATIVE ACTIVITIES	6	9	5
F PERFORMING SUPPLY AND EQUIPMENT ACTIVITIES	2	3	3
G PERFORMING SURVEYING ACTIVITIES	2	40	3
H PERFORMING MANUAL DRAFTING ACTIVITIES	3	*	3
I PERFORMING COMPUTER AIDED DESIGN AND DRAFTING (CADD) SYSTEM ACTIVITIES	2	5	2
J PERFORMING PROJECT PLANNING ACTIVITIES	3	*	1
K PERFORMING CONTRACT MANAGEMENT ACTIVITIES	45	*	6
L PERFORMING COST-ESTIMATE AND ANALYSIS ACTIVITIES	3	*	1
M PERFORMING MATERIAL TESTING	*	*	*
N PERFORMING GROUND RADAR EVALUATIONS	*	22	*
O PERFORMING ENGINEERING SPECIFIC CONTINGENCY ACTIVITIES	7	*	7
P PERFORMING GENERAL CONTINGENCY ACTIVITIES	8	*	8

* Denotes less than 1 percent

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

TABLE 4

SELECTED BACKGROUND DATA FOR SPECIALTY JOBS

	ENTRY-LVL CADD DRAFTSMAN JOB (ST285, N=10)	ENTRY-LVL DRAFTSMAN/ SURVEYOR JOB (ST104, N=31)	ENGINEERING CLUSTER (ST103, N=376)	MOBILITY CLUSTER (GP108, N=74)	CONTRACT MANAGEMENT CLUSTER (ST029, N=265)
PERCENT OF SAMPLE	1%	3%	37%	7%	26%
PERCENT IN CONUS	100%	90%	91%	96%	77%
ACTIVE DUTY PERCENT DAFSC DISTRIBUTION					
3E531	60%	35%	17%	7%	8%
3E551	40%	58%	48%	62%	48%
3E571	-	6%	27%	30%	42%
3E591	0%	0%	8%	1%	2%
COMPONENT STATUS					
ACTIVE DUTY	90%	65%	52%	19%	98%
AIR GUARD	-	32%	32%	51%	-
AIR RESERVE	10%	3%	16%	30%	2%
PREDOMINANT GRADE(S)	E-2 to E-4	E-3 to E-4	E-4 to E-5	E-5	E-5 to E-6
ACTIVE DUTY PERSONNEL DATA ONLY					
AVERAGE MONTHS IN CAREER FIELD	43	41	86	82	113
AVERAGE MONTHS IN SERVICE	47	54	104	106	140
PERCENT IN FIRST ENLISTMENT (1-48 MOS TAFMS)	60%	59%	35%	26%	13%
PERCENT SUPERVISING	-	-	40%	18%	24%
AVERAGE NUMBER OF TASKS PERFORMED	18	41	134	54	96

TABLE 4 (CONTINUED)

SELECTED BACKGROUND DATA FOR SPECIALTY JOBS

	GROUND RADAR EVALUATORS (ST315, N=7)	SUPERVISOR CLUSTER (ST052, N=72)
PERCENT OF SAMPLE	1%	7%
PERCENT IN CONUS	100%	74%
ACTIVE DUTY DAFSC DISTRIBUTION		
3E531	-	-
3E551	86%	22%
3E571	14%	49%
3E591	0%	29%
COMPONENT STATUS		
ACTIVE DUTY	100%	67%
AIR GUARD	-	15%
AIR RESERVE	-	18%
PREDOMINANT GRADE(S)	E-5	E-7 to E-8
AVERAGE MONTHS IN CAREER FIELD	107	140
AVERAGE MONTHS IN SERVICE	129	178
PERCENT IN FIRST ENLISTMENT (1-48 MOS TAFMS)	-	8%
PERCENT SUPERVISING	28%	91%
AVERAGE NUMBER OF TASKS PERFORMED	58	96

TABLE 5

COMPARISON OF JOB GROUPS IN CURRENT STUDY
TO PREVIOUS STUDY

1996 STUDY (AFSC 3E5X1) (N=1,022) AD, GUARD, AND RESERVE	1990 STUDY (AFSC 553X0) (N=1,049) ACTIVE DUTY ONLY
ENTRY-LEVEL CADD DRAFTSMAN JOB (ST285, N=10)	NOT IDENTIFIED
ENTRY-LEVEL DRAFTSMAN/SURVEYOR JOB (ST104, N=31)	NOT IDENTIFIED
ENGINEERING CLUSTER (ST103, N=376)	DRAFTING (N=58) DRAFTING AND SURVEYING (N=242) SURVEYING (N=12) PLANNING (N=6) MATERIAL TESTING (N=14) SUPPLY (N=7)
NOT IDENTIFIED	BASE SURVIVABILITY (N=17)
MOBILITY CLUSTER (GP108, N=74)	PRIME BEEF (N=24)
CONTRACT MANAGEMENT CLUSTER (ST029, N=265)	CONTRACT INSPECTION (N=315) SQ. LVL CONTRACTS (N=5) HQ LVL CONTRACTS (N=9)
GROUND RADAR EVALUATORS JOB (ST315, N=7)	GROUND RADAR (N=7)
SUPERVISOR CLUSTER (ST052, N=72)	NCOIC (N=117)
NOT IDENTIFIED	INSTRUCTOR (N=6)

ANALYSIS OF DAFSC GROUPS

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

The distribution of skill-level groups across the career ladder jobs is displayed in Table 6. Table 7 offers another perspective by displaying the relative percent time spent on each duty across the AD 3-skill level group. Table 8 displays the relative percent time spent on each duty across the AD, ANG, and AFRES 5-skill level groups, while Table 9 and Table 10 display the relative percent time spent on each duty across the various component 7- and 9-skill level groups, respectively. A typical pattern of progression is noted within the AFSC 3E5X1 career ladder. Personnel at the 3- and 5-skill levels work in the technical jobs of the career ladder and spend most of their time on technical tasks involving engineering activities. As incumbents move up to the 7- and 9-skill level, higher percentages work in the Contract Management and Supervisor clusters; however, what is still unique to this career ladder is that both of these skill level groups are performing as an engineer.

Active Duty Skill-Level Descriptions

DAFSC 3E531. Representing 15 percent of the survey sample, these 147 airmen perform an average of 66 tasks. The 3-skill level airmen in this study are all serving on active duty and work primarily in the Engineering (43 percent) and Contract Management clusters (15 percent) (see Table 6).

Representative tasks performed by 3-skill level incumbents are listed in Table 11. Most tasks are technical in nature and relate to Duty I (Performing Computer Aided Design and Drafting (CADD)), Duty G (Performing Surveying Activities), and Duty P (Performing General Contingency Activities).

DAFSC 3E551. Representing 31 percent of the survey sample, the 317 airmen forming this group perform an average of 83 tasks (versus 66 performed by 3-skill level members). The highest percentage of these airmen (40 percent) are working in the Contract Management Cluster (versus only 15 percent of the 3-skill levels). Another 31 percent of these airmen are performing duties and tasks within the Engineering Cluster.

Table 12 lists representative tasks performed by these AD 5-skill level personnel. Table 13 reflects those tasks which best differentiate AD 5-skill level personnel from their 3-skill level counterparts. The major difference between the two groups is that 5-skill level personnel perform a broader range of tasks, many being related to Contract Management.

DAFSC 3E571. AD 7-skill level personnel represent 21 percent of the survey sample. Similar to their junior counterparts at the 5-skill level, a little over half (52 percent) of these airmen are working in the Contract Management Cluster. However, 17 percent of these 7-skill level personnel are still working in the Engineering Cluster (see Table 6). Furthermore, 15 percent of these airmen can be found in the Supervisor Cluster.

Table 14 lists the most time consuming tasks performed by these airmen. Most of these involve Contract Management or Supervisory functions. Table 15 shows those tasks which best differentiate the 5- and 7-skill levels. As expected, the key difference is a much greater emphasis on supervisory functions at the 7-skill level.

DAFSC 3E591. AD 9-skill level personnel represent 1 percent of the survey sample. They are primarily working in the Supervisor Cluster (36 percent), the Contract Management Cluster (27 percent), and the Engineering Cluster (18 percent).

Table 16 lists the most time consuming tasks performed by these senior NCOs. Most of these involve supervisory or management functions. Table 17 shows those tasks which best differentiate the 7- and 9-skill levels. Again, as expected, the key difference is a much greater emphasis on management functions at the 9-skill level, while 7-skill level personnel are still performing many of the technical engineering tasks.

Air National Guard Skill-Level Descriptions

DAFSC 3E551. Representing 9 percent of the survey sample, these 92 airmen perform an average of 84 tasks. A major difference can be seen in the jobs performed by these personnel when compared to their AD counterparts. Whereas the largest percentage of AD 5-skill level airmen work in the Contract Management Cluster, the highest percentage of ANG personnel are found working in the Engineering Cluster (52 percent). Another major difference is that 23 percent of ANG personnel at this skill level work in the Mobility Cluster (versus only 3 percent of the AD members, see Table 6). Almost no ANG personnel work in the Contract Management Cluster.

Table 18 lists representative tasks performed by these 5-skill level personnel. Most tasks are technical in nature and relate to Duty G (Performing Surveying Activities), Duty P (Performing General Contingency Activities), Duty H (Performing Manual Drafting Activities), Duty O, (Performing Engineering Specific Contingency Activities), and Duty I (Performing Computer Aided Design and Drafting (CADD)).

DAFSC 3E571. These 88 7-skill level personnel represent 9 percent of the survey sample. Like their junior ANG counterparts at the 5-skill level, over half (63 percent) of these personnel are working in the Engineering Cluster and 18 percent are working in the Mobility Cluster. This utilization of personnel is dramatically different from patterns seen in the AD sample in that AD personnel are far more involved with contract management, engineering, and supervision at this level, while ANG personnel do very little of the contract management and supervision functions (see Table 6).

Table 19 lists the most time consuming tasks performed by these airmen. Most of these involve core engineering or mobility functions. Table 20 shows those tasks which best differentiate the ANG 5- and 7-skill levels. All tasks in the table show a negative value, indicating that 7-skill level personnel are also performing essentially the same technical tasks performed at the 5-skill level, but higher percentages are involved with supervision, training, and contingency tasks.

DAFSC 3E591. ANG 9-skill level personnel represent 3 percent of the survey sample. Fifty percent are working in the Engineering Cluster and 31 percent are working in the Supervisor Cluster. When compared to the active duty 9-skill levels, several major differences are noted. First, ANG personnel at this level are still not as involved with contract management functions as their AD counterparts (see Table 6). There is a higher percentage of these personnel working in the Engineering Cluster than found in the AD force (50 percent versus 18 percent).

Table 21 lists the most time consuming tasks performed by these senior NCOs. Most of these involve supervisory or contingency functions. Table 22 shows those tasks which best differentiate the 7- and 9-skill levels. Again, as expected, the key difference is a much greater emphasis on management functions at the 9-skill level, while 7-skill level personnel are still performing many of the technical engineering tasks.

Air Force Reserve Skill-Level Descriptions

DAFSC 3E551. Representing 7 percent of the survey sample, these 69 airmen perform an average of 97 tasks (the most tasks performed by any 5-skill level group). These airmen work primarily in the Engineering (54 percent) and Mobility (25 percent) clusters. As with ANG personnel, very few are involved with contract management functions.

Table 23 lists representative tasks performed by AFRES 5-skill level personnel. Most tasks are technical in nature and relate to Duty P (Performing General Contingency Activities), Duty G (Performing Surveying Activities), Duty O, (Performing Engineering Specific Contingency Activities), Duty H (Performing Manual Drafting Activities), and Duty I (Performing Computer Aided Design and Drafting (CADD)).

DAFSC 3E571. These 21 AFRES 7-skill level personnel represent 2 percent of the survey sample (the smallest group of 7-skill levels in the survey sample). Like their junior counterparts at the 5-skill level, a little over half of these personnel (57 percent) are working in the Engineering Cluster, with 24 percent working in the Mobility Cluster. Additionally, the percentage working in the Supervisor Cluster jumps from 4 percent at the 5-skill level to 14 percent. This percentage is similar to that seen for AD 7-skill level airmen, but far higher than seen for ANG personnel.

Table 24 lists the most time consuming tasks performed by these airmen. Most of these involve core engineering or mobility functions. Table 25 shows those tasks which best differentiate the 5- and 7-skill levels. The majority of the tasks in the table show a negative value, indicating that 7-skill level personnel are also performing essentially the same technical tasks performed at the 5-skill level but, as mentioned above, have a greater emphasis on supervisory and training tasks.

DAFSC 3E591. AFRES 9-skill level personnel represent 2 percent of the survey sample. Like their counterparts in the ANG group, the highest percent of group members are found in the Engineering Cluster (55 percent). Additionally, 35 percent of these members are working in the Supervisor Cluster, which is similar to their ANG and AD counterparts (see Table 6).

Table 26 lists the most time consuming tasks performed by these senior NCOs. Most of these involve supervisory, contingency, or core engineering functions. Table 27 shows those tasks which best differentiate the 7- and 9-skill levels. Again, as expected, the majority of the tasks in the table show a negative value, indicating that 9-skill level personnel are also performing essentially the same tasks performed at the 7-skill level, but as mentioned above have a greater emphasis on supervisory or management tasks.

Comparison Between Active Duty, Air National Guard, and Air Force Reserve Groups

Several noticeable differences were noted between the AD, ANG, and AFRES personnel. Table 6 shows that higher percentages of AD personnel concentrate on contract management activities while in the ANG and AFRES components, a heavy emphasis is placed on core engineering and mobility activities. ANG and AFRES personnel were clearly more involved with the core Engineering Job at the 5-, 7-, and 9-skill levels than their AD counterparts. Conversely, AD personnel at these skill levels were more involved with contract management. In the area of supervision, higher percentages of 5- and 7-skill level AD and AFRES personnel performed this function while almost none of the members from the ANG performed related activities. Only at the 9-skill level did three component groups reflect similar percentages of personnel in the Supervisor Job.

Summary

Progression in this career ladder for AD personnel follows a regular pattern of highly technical job focus at the lower skill levels, with a broadening into supervision and management at the 7- and 9-skill levels. An emphasis is clearly seen in performing primarily the core job of engineering at the 3- and 5-skill levels, with some broadening into supervisory functions at the 5-skill level. Craftsmen at the 7-skill level are beginning to shift to supervisory jobs, but a good deal of their job time is spent in the contract management arena. The 9-skill level personnel, for the most part, are managers of the career ladder, but still appear to be involved in contract management and engineering functions.

TABLE 6

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

JOBS	DAFSC 3E531		DAFSC 3E551			
	ALL (N=147)	AD (N=147)	ALL (N=478)	AD (N=317)	ANG (N=92)	RES (N=69)
I. ENTRY-LEVEL CADD DRAFTSMAN JOB (ST285, N=10)	4	4	1	1	*	1
II. ENTRY-LEVEL DRAFTSMAN/SURVEYOR JOB (ST104, N=31)	8	8	4	3	10	1
III. ENGINEERING CLUSTER (ST103, N=376)	43	43	38	31	52	54
IV. MOBILITY CLUSTER (GP108, N=74)	3	3	10	3	23	25
V. CONTRACT MANAGEMENT CLUSTER (ST029, N=265)	15	15	27	40	*	*
VI. GROUND RADAR EVALUATORS JOB (ST315, N=7)	*	*	1	2	*	*
VII. SUPERVISOR CLUSTER (ST052, N=72)	*	*	3	4	*	4
NOT GROUPED	27	27	16	16	15	15

* Denotes less than 1 percent

TABLE 6 (CONTINUED)

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

JOBS		DAFSC 3E571				DAFSC 3E591			
		ALL (N=318)	AD (N=209)	ANG (N=88)	RES (N=21)	ALL (N=63)	AD (N=11)	ANG (N=32)	RES (N=20)
I.	ENTRY-LEVEL CADD DRAFTSMAN JOB (ST285, N=10)	*	*	*	*	*	*	*	*
II.	ENTRY-LEVEL DRAFTSMAN/SURVEYOR JOB (ST104, N=31)	1	1	1	*	*	*	*	*
III.	ENGINEERING CLUSTER (ST103, N=376)	32	17	63	57	46	18	50	55
IV.	MOBILITY CLUSTER (GP108, N=74)	7	1	18	24	2	*	3	*
V.	CONTRACT MANAGEMENT CLUSTER (ST029, N=265)	35	52	3	*	6	27	3	*
VI.	GROUND RADAR EVALUATORS JOB (ST315, N=7)	*	1	*	*	*	*	*	*
VII.	SUPERVISOR CLUSTER (ST052, N=72)	11	15	1	14	33	36	31	35
	NOT GROUPED	14	13	14	5	13	19	13	10

* Denotes less than 1 percent

TABLE 7

RELATIVE PERCENT OF TIME SPENT ON DUTIES BY ACTIVE DUTY 3-SKILL LEVEL PERSONNEL**

	DUTIES	PERCENT TIME SPENT (N=147)
A	ORGANIZING AND PLANNING	5
B	DIRECTING AND IMPLEMENTING	1
C	INSPECTING AND EVALUATING	4
D	TRAINING	1
E	PERFORMING GENERAL ADMINISTRATIVE ACTIVITIES	6
F	PERFORMING SUPPLY AND EQUIPMENT ACTIVITIES	5
G	PERFORMING SURVEYING ACTIVITIES	16
H	PERFORMING MANUAL DRAFTING ACTIVITIES	12
I	PERFORMING COMPUTER AIDED DESIGN AND DRAFTING (CADD) SYSTEM ACTIVITIES	24
J	PERFORMING PROJECT PLANNING ACTIVITIES	1
K	PERFORMING CONTRACT MANAGEMENT ACTIVITIES	7
L	PERFORMING COST-ESTIMATE AND ANALYSIS ACTIVITIES	*
M	PERFORMING MATERIAL TESTING	*
N	PERFORMING GROUND RADAR EVALUATIONS	*
O	PERFORMING ENGINEERING SPECIFIC CONTINGENCY ACTIVITIES	7
P	PERFORMING GENERAL CONTINGENCY ACTIVITIES	10

* Denotes less than 1 percent

** No ANG or AFRES 3-skill level personnel identified in this study

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

TABLE 8

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

DUTIES		ACTIVE (N=317)	GUARD (N=92)	RESERVE (N=69)
A	ORGANIZING AND PLANNING	6	4	6
B	DIRECTING AND IMPLEMENTING	3	1	2
C	INSPECTING AND EVALUATING	7	3	4
D	TRAINING	4	2	4
E	PERFORMING GENERAL ADMINISTRATIVE ACTIVITIES	6	2	3
F	PERFORMING SUPPLY AND EQUIPMENT ACTIVITIES	3	2	3
G	PERFORMING SURVEYING ACTIVITIES	10	24	18
H	PERFORMING MANUAL DRAFTING ACTIVITIES	7	14	11
I	PERFORMING COMPUTER AIDED DESIGN AND DRAFTING (CADD) SYSTEM ACTIVITIES	12	11	8
J	PERFORMING PROJECT PLANNING ACTIVITIES	2	2	1
K	PERFORMING CONTRACT MANAGEMENT ACTIVITIES	20	1	1
L	PERFORMING COST-ESTIMATE AND ANALYSIS ACTIVITIES	1	1	*
M	PERFORMING MATERIAL TESTING	1	*	*
N	PERFORMING GROUND RADAR EVALUATIONS	1	*	*
O	PERFORMING ENGINEERING SPECIFIC CONTINGENCY ACTIVITIES	7	13	14
P	PERFORMING GENERAL CONTINGENCY ACTIVITIES	10	21	24

* Denotes less than 1 percent

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

TABLE 9

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

DUTIES		ACTIVE (N=209)	GUARD (N=88)	RESERVE (N=21)
A	ORGANIZING AND PLANNING	11	7	12
B	DIRECTING AND IMPLEMENTING	6	4	6
C	INSPECTING AND EVALUATING	12	4	7
D	TRAINING	5	7	10
E	PERFORMING GENERAL ADMINISTRATIVE ACTIVITIES	6	2	2
F	PERFORMING SUPPLY AND EQUIPMENT ACTIVITIES	3	3	4
G	PERFORMING SURVEYING ACTIVITIES	4	19	15
H	PERFORMING MANUAL DRAFTING ACTIVITIES	4	13	7
I	PERFORMING COMPUTER AIDED DESIGN AND DRAFTING (CADD) SYSTEM ACTIVITIES	5	7	3
J	PERFORMING PROJECT PLANNING ACTIVITIES	2	2	1
K	PERFORMING CONTRACT MANAGEMENT ACTIVITIES	25	3	*
L	PERFORMING COST-ESTIMATE AND ANALYSIS ACTIVITIES	2	1	*
M	PERFORMING MATERIAL TESTING	1	*	*
N	PERFORMING GROUND RADAR EVALUATIONS	*	*	*
O	PERFORMING ENGINEERING SPECIFIC CONTINGENCY ACTIVITIES	6	11	15
P	PERFORMING GENERAL CONTINGENCY ACTIVITIES	7	18	19

* Denotes less than 1 percent

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

TABLE 10

RELATIVE PERCENT OF TIME SPENT ON DUTIES
BY MEMBERS OF 9-SKILL LEVEL GROUPS

DUTIES		ACTIVE (N=11)	GUARD (N=32)	RESERVE (N=20)
A	ORGANIZING AND PLANNING	23	12	17
B	DIRECTING AND IMPLEMENTING	11	10	9
C	INSPECTING AND EVALUATING	17	9	11
D	TRAINING	5	14	13
E	PERFORMING GENERAL ADMINISTRATIVE ACTIVITIES	10	2	2
F	PERFORMING SUPPLY AND EQUIPMENT ACTIVITIES	2	3	2
G	PERFORMING SURVEYING ACTIVITIES	4	12	10
H	PERFORMING MANUAL DRAFTING ACTIVITIES	4	9	6
I	PERFORMING COMPUTER AIDED DESIGN AND DRAFTING (CADD) SYSTEM ACTIVITIES	3	2	3
J	PERFORMING PROJECT PLANNING ACTIVITIES	1	2	1
K	PERFORMING CONTRACT MANAGEMENT ACTIVITIES	12	2	1
L	PERFORMING COST-ESTIMATE AND ANALYSIS ACTIVITIES	1	1	*
M	PERFORMING MATERIAL TESTING	*	*	*
N	PERFORMING GROUND RADAR EVALUATIONS	*	*	*
O	PERFORMING ENGINEERING SPECIFIC CONTINGENCY ACTIVITIES	4	10	11
P	PERFORMING GENERAL CONTINGENCY ACTIVITIES	4	14	13

* Denotes less than 1 percent

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

TABLE 11

REPRESENTATIVE TASKS PERFORMED BY ACTIVE DUTY DAFSC 3E531 PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=147)
H341	Reproduce drawings	70
I363	Perform fundamental drafting practices, such as dimensioning, line weights, or sheet layouts using CADD system	64
H307	Interpret blueprints	64
I360	Maintain computer drawing files	63
I343	Complete civil plans using CADD system	60
I365	Update as-built drawings using CADD system	59
I342	Complete architectural plans using CADD system	59
H308	Interpret engineering sketches	59
I350	Develop modifications from existing drawings using CADD system	57
G306	Set up surveying equipment	56
I344	Complete electrical plans using CADD system	55
I346	Complete structural plans using CADD system	54
H312	Maintain drawing files, other than computer drawing files	53
I345	Complete mechanical plans using CADD system	53
G289	Measure horizontal distances using tapes	53
O549	Plot airfield damage assessments	52
O545	Perform airfield damage assessments	51
I366	Update record drawings using CADD system	50
O535	Identify and report suspected unexploded ordnance (UXO)	50
I356	Draw charts using CADD system	49
G283	Manually input field data into CADD system	46
G286	Measure horizontal distances using electronic equipment	46
A30	Participate in general meetings, such as staff meetings, briefings, conferences, and workshops, other than conducting	41
H335	Manually update as-built drawings	41
I361	Measure irregular lines using CADD system	39
I352	Draft preliminary designs for civil plans using CADD system	39
I351	Draft preliminary designs for architectural plans using CADD system	39
I353	Draft preliminary designs for electrical plans using CADD system	36
C89	Evaluate drawings or engineering plans for accuracy	35
E205	Pick up or deliver messages	33
I364	Revise BCPs using CADD system	31

*Average Number of Tasks Performed - 66

TABLE 12

REPRESENTATIVE TASKS PERFORMED BY ACTIVE DUTY DAFSC 3E551 PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=317)
H307	Interpret blueprints	65
H341	Reproduce drawings	60
O545	Perform airfield damage assessments	60
A30	Participate in general meetings such as staff meetings, briefings, conferences, and workshops, other than conducting	59
O551	Select MOS candidates	57
H308	Interpret engineering sketches	56
P568	Don or doff chemical warfare personal protective clothing	56
O549	Plot airfield damage assessments	56
O529	Compute repair quality criteria (RQC) for rapid runway repairs (RRRs)	56
C89	Evaluate drawings or engineering plans for accuracy	54
P574	Erect tents	52
O542	Lay out minimum operating strip (MOS) centerlines	51
I360	Maintain computer drawing files	48
I363	Perform fundamental drafting practices, such as dimensioning, line weights, or sheet layouts using CADD system	48
G306	Set up surveying equipment	47
I342	Complete architectural plans using CADD system	45
I350	Develop modifications from existing drawings using CADD system	44
K413	Maintain records of contract changes	43
I343	Complete civil plans using CADD system	42
I365	Update as-built drawings using CADD system	41
K387	Conduct daily on-site visits	40
K407	Identify contractor performance discrepancies	40
I356	Draw charts using CADD system	39
C87	Evaluate contractor compliance with work standards	38
H312	Maintain drawing files, other than computer drawing files	38
D125	Conduct on-the-job training (OJT)	38
E195	Maintain daily inspection records	36
I344	Complete electrical plans using CADD system	36
I345	Complete mechanical plans using CADD system	36
I366	Update record drawings using CADD system	35
K412	Inspect and record construction projects for compliance with plans and specifications	35

*Average Number of Tasks Performed - 83

TABLE 13

TASKS WHICH BEST DIFFERENTIATE BETWEEN
ACTIVE DUTY DAFSC 3E531 AND DAFSC 3E551 PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS		3E531 (N=147)	3E551 (N=317)	DIFFERENCE
I346	Complete structural plans using CADD system	54	34	+20
I344	Complete electrical plans using CADD system	55	36	+19
I365	Update as-built drawings using CADD system	59	41	+18
I343	Complete civil plans using CADD system	60	42	+18
I345	Complete mechanical plans using CADD system	53	36	+17
I363	Perform fundamental drafting practices, such as dimensioning, line weights, or sheet layouts using CADD system	64	48	+16
H310	Letter drawings using free-hand style	46	30	+16
I360	Maintain computer drawing files	63	48	+16
G257	Compute azimuths and bearings	37	22	+15
I366	Update record drawings using CADD system	50	35	+15
K413	Maintain records of contract change	16	43	-27
K396	Coordinate work clearance requests with appropriate agencies	8	35	-27
K387	Conduct daily on-site visits	16	40	-25
K407	Identify contractor performance discrepancies	16	40	-24
K386	Conduct contract final acceptance inspections	10	34	-24
E195	Maintain daily inspection records	12	36	-24
K401	Evaluate data on AF Forms 3000 (Material Approval Submittal)	7	30	-23
K417	Participate in preperformance conferences	12	35	-23
K410	Inspect and record construction activities compliance with safety regulations or procedures	10	33	-23
K389	Coordinate construction with appropriate agencies	7	31	-23

TABLE 14

REPRESENTATIVE TASKS PERFORMED BY ACTIVE DUTY DAFSC 3E571 PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=209)
A30	Participate in general meetings, such as staff meetings, briefings, conferences, and workshops, other than conducting	75
C87	Evaluate contractor compliance with work standards	54
K387	Conduct daily on-site visits	50
C89	Evaluate drawings or engineering plans for accuracy	62
K407	Identify contractor performance discrepancies	55
K412	Inspect and record construction projects for compliance with plans and specifications	47
A7	Determine or establish work priorities	57
H307	Interpret blueprints	61
E195	Maintain daily inspection records	43
E187	Initiate electronic mail (E-mail)	49
K401	Evaluate data on AF Forms 3000 (Material Approval Submittal)	47
K398	Document construction activities	45
K413	Maintain records of contract changes	52
A12	Develop or establish work methods or procedures	55
E170	Compile information for records, reports, or logs	40
K389	Coordinate construction with appropriate agencies	46
K408	Identify on-site or design deficiencies	51
L439	Compare government cost-estimates with contractor cost-estimates	44
C90	Evaluate drawings or engineering plans for constructibility	51
K386	Conduct contract final acceptance inspections	47
J376	Estimate cost-elements, such as materials, equipment, or labor	41
O551	Select MOS candidates	61
J375	Draft or write statements of work (SOWs)	38
C105	Evaluate project specifications	43
C116	Write EPRs	55
K410	Inspect and record construction activities compliance with safety regulations or procedures	46
K403	Evaluate data on AF Forms 3065	45

*Average Number of Tasks Performed - 109

TABLE 15

TASKS WHICH BEST DIFFERENTIATE BETWEEN ACTIVE DUTY
DAFSC 3E551 AND DAFSC 3E571 PERSONNEL
(PERCENT MEMBERS PERFORMING)

	TASKS	3E551 (N=317)	3E571 (N=209)	DIFFERENCE
I363	Perform fundamental drafting practices, such as dimensioning, line weights, or sheet layouts using CADD system	48	28	+20
I342	Complete architectural plans using CADD system	45	26	+19
I360	Maintain computer drawing files	48	29	+19
G289	Measure horizontal distances using tapes	45	27	+18
G306	Set-up surveying equipment	47	29	+18
I352	Draft preliminary designs for civil plans using CADD system	37	20	+17
H341	Reproduce drawings	60	43	+17
I343	Complete civil plans using CADD system	42	26	+16
I356	Draw charts using CADD system	39	23	+16
I346	Complete structural plans using CADD system	34	18	+16
C18	Write recommendations for awards and decorations	15	49	-34
C116	Write EPRs	20	55	-34
C78	Conduct performance feedback evaluation sessions	18	52	-34
C102	Evaluate personnel for compliance with performance standards	16	50	-33
A24	Establish performance standards for subordinates	18	51	-33
C103	Evaluate personnel for promotion, demotion, reclassification, or special awards	11	43	-32
A1	Assign personnel to work areas or duty positions, other than mobility positions	12	43	-30
B49	Conduct supervisory orientations of newly assigned personnel	11	41	-30
C111	Inspect personnel for compliance with military standards	16	45	-30
B50	Counsel subordinates on personal matters	22	51	-29

TABLE 16

REPRESENTATIVE TASKS PERFORMED BY ACTIVE DUTY DAFSC 3E591 PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=11)
A30	Participate in general meetings, such as staff meetings, briefings, conferences, and workshops, other than conducting	91
A34	Plan or prepare briefings, conferences, or workshops	91
E187	Initiate electronic mail (E-mail)	82
A7	Determine or establish work priorities	82
A35	plan or schedule work assignments or priorities	82
A23	Establish organizational policies, such as operating instructions (OIs) or standard operating procedures (SOPs)	82
A40	Prepare agenda for general meetings, such as staff meetings, briefings, conferences, or workshops	73
A28	Establish work schedules	73
C97	Evaluate logistics requirements, such as personnel, equipment, space, tools, or supplies	73
A19	Establish administrative files	73
A12	Develop or establish work methods or procedures	73
C118	Write recommendations for awards or decorations	73
C116	Write EPRs	73
H307	Interpret blueprints	73
B49	Conduct supervisory orientations of newly assigned personnel	73
C120	Write staff studies, surveys, or special reports, other than training reports	64
A5	Determine logistics requirements, such as personnel, equipment, space, or supplies, other than contingency requirements	64
E217	Write minutes of briefings, meeting, or conferences	64
A42	Review drafts of regulations, manuals, or other directives	55
C105	Evaluate project specifications	55
A13	Develop organizational or functional charts	55
B48	Conduct general staff meetings or briefings	55
E170	Compile information for records, reports, or logs	45
A39	plan status boards, charts, or graphs	45
B75	Supervise military personnel with AFSCs other than AFSC 3E5X1	45
E171	Compile statistics on trend analysis	36
B55	Draft supplements or changes to regulations, manuals, or other directives	18

*Average Number of Tasks Performed - 133

TABLE 17

TASKS WHICH BEST DIFFERENTIATE BETWEEN ACTIVE DUTY
DAFSC 3E571 AND DAFSC 3E591 PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS		3E571 (N=209)	3E591 (N=11)	DIFFERENCE
O549	Plot airfield damage assessments	57	18	+39
O551	Select MOS candidates	61	27	+33
P574	Erect tents	48	18	+30
K403	Evaluate data on AF Forms 3065	45	18	+27
O545	Perform airfield damage assessments	53	27	+25
D125	Conduct on-the-job training (OJT)	53	27	+25
E192	Maintain administrative files	34	9	+25
K413	Maintain records of contract changes	52	27	+25
O543	Lay out taxiway and runway traffic markings	33	9	+24
O42	Lay out minimum operating strip (MOS) centerlines	50	27	+23
A34	Plan or prepare briefings, conferences, or workshops	39	91	-52
C97	Evaluate logistics requirements, such as personnel, equipment, space, tools, or supplies	24	73	-48
B66	Initiate personnel action requests	17	64	-46
C120	Write staff studies, surveys, or special reports, other than training reports	18	64	-46
B54	Draft recommendations for policy changes in logistics requirements, such as personnel, equipment, space or supplies	19	64	-46
C115	Write civilian performance appraisals	11	55	-44
B57	Implement cost-reduction programs	11	55	-44
A23	Establish organizational policies, such as operating instructions (OIs) or standard operating procedures (SOPs)	39	82	-43
B65	Initiate actions required due to substandard performances of personnel	32	73	-41
C112	Investigate accidents or incidents	14	55	-40

TABLE 18

REPRESENTATIVE TASKS PERFORMED BY GUARD DAFSC 3E551 PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=92)
G306	Set up surveying equipment	84
P574	Erect tents	78
H307	Interpret blueprints	76
G289	Measure horizontal distances using tapes	73
H341	Reproduce drawings	72
P579	Inspect mobility bags or kits	70
H310	Letter drawings using free-hand style	68
P576	Identify bomb damage locations	65
G280	Maintain surveying equipment	65
G303	Record field notes using standard surveying procedures	65
O545	Perform airfield damage assessments	64
G256	Communicate using standardized hand signals	64
O549	Plot airfield damage assessments	63
P568	Don or doff chemical warfare personal protective clothing	61
H312	Maintain drawing files, other than computer drawing files	61
O542	Lay out minimum operating strip (MOS) centerlines	61
H308	Interpret engineering sketches	59
G287	Measure horizontal distances using pacing techniques	58
I356	Draw charts using CADD system	57
O551	Select MOS candidates	57
O546	Perform crater layout surveys	55
P598	Operate vehicle during contingency exercises or operations	55
P638	Tear down, inspect, clean, and reassemble weapons	51
I363	Perform fundamental drafting practices, such as dimensioning, line weights, or sheet layouts using CADD system	50
I342	Complete architectural plans using CADD system	49
I343	Complete civil plans using CADD system	49
O535	Identify and report suspected unexploded ordnance (UXO)	48
I360	Maintain computer drawing files	48
P261	Practice base recovery after attack (BRAT) concepts	47
O529	Compute repair quality criteria (RQC) for rapid runway repairs (RRRs)	47
A30	Participate in general meetings, such as staff meetings, briefings, conferences, and workshops, other than conducting	40

*Average Number of Tasks Performed - 84

TABLE 19

REPRESENTATIVE TASKS PERFORMED BY GUARD DAFSC 3E571 PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=88)
G306	Set up surveying equipment	90
P579	Inspect mobility bags or kits	78
P574	Erect tents	83
P568	Don or doff chemical warfare personal protective clothing	69
H307	Interpret blueprints	85
H341	Reproduce drawings	84
G289	Measure horizontal distances using tapes	81
O542	Lay out minimum operating strip (MOS) centerlines	75
A30	Participate in general meetings, such as staff meetings, briefings, conferences, and workshops, other than conducting	74
H310	Letter drawings using free-hand style	75
O545	Perform airfield damage assessments	76
D125	Conduct on-the-job training (OJT)	75
H308	Interpret engineering sketches	74
P576	Identify bomb crater damage locations	70
O551	Select MOS candidates	74
P621	Practice base recovery after attack (BRAT) concepts	68
O529	Compute repair quality criteria (RQC) for rapid runway repairs (RRRs)	66
O549	Plot airfield damage assessments	72
H312	Maintain drawing files, other than computer drawing files	69
P595	Operate portable radios, such as field radios during contingency exercises or operations	61
G300	Perform topographic surveys	65
G280	Maintain surveying equipment	72
P598	Operate vehicles during contingency exercises or operations	67
O546	perform crater layout surveys	67
B72	Supervise Engineering Apprentices (AFSC 3E531)	51
O535	Identify and report suspected unexploded ordnance (UXO)	65
G285	Measure horizontal angles	64
G303	Record field notes using standard surveying procedures	70
I360	Maintain computer drawing files	49
P638	Tear down, inspect, clean, and reassemble weapons	63
G305	Set grade stakes	72
O547	Perform crater profile measurements (CPMs)	59

* Average Number of Tasks Performed - 126

TABLE 20

TASKS WHICH BEST DIFFERENTIATE BETWEEN GUARD
DAFSC 3E551 AND DAFSC 3E571 PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS		3E551 (N=92)	3E571 (N=88)	DIFFERENCE
D125	Conduct on-the-job training (OJT)	29	75	-46
B73	Supervise Engineering Journeymen (AFSC 3E551)	4	49	-45
B68	Interpret engineering plans for subordinates	16	55	-38
D153	Evaluate progress of trainees	4	40	-36
B72	Supervise Engineering Apprentice (AFSC 3E531)	16	51	-35
A12	Develop or establish work methods or procedures	10	44	-34
D157	Maintain training records, charts, graphs, or files	10	44	-34
D132	Counsel trainees on training progress	5	39	-34
O533	Develop camp cantonment layouts	28	62	-34
A30	Participate in general meetings, such as staff meetings, briefings, conferences, and workshops, other than conducting	40	74	-34
A28	Establish work schedules	5	38	-33
A35	Plan or schedule work assignments or priorities	8	40	-32
D134	Determine OJT requirements	4	34	-30
C103	Evaluate personnel for promotion, demotion, reclassification, or special awards	2	32	-30
H331	Manually draw structural plans	26	47	-21
H311	Letter drawings using mechanical lettering sets	28	49	-21
A24	Establish performance standards for subordinates	6	27	-21
F232	Initiate requisitions for equipment, tools, or supplies, other than for local purchase	11	32	-21
H325	Manually draw civil plans	36	57	-21
O532	Develop base denial plans	14	35	-21

TABLE 21

REPRESENTATIVE TASKS PERFORMED BY GUARD DAFSC 3E591 PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=32)
C103	Evaluate personnel for promotion, demotion, reclassification, or special awards	88
O549	Plot airfield damage assessments	88
H307	Interpret blueprints	88
O551	Select MOS candidates	88
O542	Lay out minimum operating strip (MOS) centerlines	88
B73	Supervise Engineering Apprentices (AFSC 3E531)	84
B73	Supervise Engineering Journeymen (AFSC 3E551)	84
A7	Determine or establish work priorities	84
D125	Conduct on-the-job training	81
H341	Reproduce drawings	81
A1	Assign personnel to work areas or duty positions, other than mobility positions	78
O545	Perform airfield damage assessments	78
B74	Supervise Engineering Craftsmen (3E571)	75
P595	Operate portable radios, such as field radios during contingency exercises or operations	75
H308	Interpret engineering sketches	75
P574	Erect tents	75
B68	Interpret engineering plans for subordinates	72
O546	Perform crater layout surveys	72
A30	Participate in general meetings, such as staff meetings, briefings, conferences, and workshops, other than conducting	69
P568	Don or doff chemical warfare personal protective clothing	69
P576	Identify bomb crater damage locations	69
O529	Compute repair quality criteria (RQC) for rapid runway repair (RRRs)	69
A35	Plan or schedule work assignments or priorities	66
C111	Inspect personnel for compliance with military standards	66
A28	Establish work schedules	66
D132	Counsel trainees on training progress	59
P621	Practice base recovery after attack (BRAT) concepts	59
D157	Maintain training records, charts, graphs, or files	59
A12	Develop or establish work methods or procedures	59
D165	Verify personnel CDC enrollments	56
D153	Evaluate progress of trainees	53

*Average Number of Tasks Performed - 126

TABLE 22

TASKS WHICH BEST DIFFERENTIATE BETWEEN GUARD
DAFSC 3E571 AND DAFSC 3E591 PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS		3E571 (N=88)	3E591 (N=32)	DIFFERENCE
I343	Complete civil plans using CADD system	57	25	+32
G283	Manually input field data into CADD system	51	25	+26
I350	Develop modifications from existing drawings using CADD system	45	22	+24
H309	Letter drawings using electronic labeling machines	51	28	+23
I363	Perform fundamental drafting practices, such as dimensioning, line weights, or sheet layouts using CADD system	47	25	+22
P599	Palletize equipment for deployments	43	22	+21
P629	Repair bomb craters	33	13	+20
C103	Evaluate personnel for promotion, demotion, reclassification, or special awards	32	88	-56
B74	Supervise Engineering Craftsmen (AFSC 3E571)	25	75	-50
D163	Select OJT trainers or certifiers	14	63	-49
A7	Determine or establish work priorities	42	84	-42
A1	Assign personnel to work areas or duty positions, other than mobility positions	38	78	-41
A2	Assign sponsors for newly assigned personnel	16	56	-40
B50	Counsel subordinates on personal matters	28	66	-37
C111	Inspect personnel for compliance with military standards	30	66	-36
B73	Supervise Engineering Journeymen (AFSC 3E551)	49	84	-36
D165	Verify personnel CDC enrollments	22	56	-35
B49	Conduct supervisory orientations of newly assigned personnel	25	59	-34
B72	Supervise Engineering Apprentices (AFSC 3E531)	51	84	-33
C102	Evaluate personnel for compliance with performance standards	27	59	-32

TABLE 23

REPRESENTATIVE TASKS PERFORMED BY RESERVE DAFSC 3E551 PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=69)
P574	Erect tents	80
O545	Perform airfield damage assessments	75
G306	Set up surveying equipment	75
O549	Plot airfield damage assessments	74
H307	Interpret blueprints	72
H308	Interpret engineering sketches	72
O542	Layout minimum operating strip (MOS) centerlines	72
G289	Measure horizontal distances using tapes	72
P568	Don or doff chemical warfare personal protective clothing	71
P576	Identify bomb crater damage locations	70
O546	perform crater layout surveys	68
O535	Identify and report suspected unexploded ordnance (UXO)	68
O551	Select MOS candidates	67
H310	Letter drawings using free-hand style	67
P638	Tear down, inspect, clean, and reassemble weapons	64
O529	Compute repair quality criteria (RQC) for rapid runway repairs (RRRs)	64
P631	Report base damage	62
O547	Perform crater profile measurements (CPMs)	61
G305	Set grade stakes	61
P579	Inspect mobility bags or kits	59
O530	Conduct mobility exercises or deployment site surveys	59
H341	Reproduce drawings	58
O533	Develop camp cantonment layouts	58
P621	Practice base recovery after attack (BRAT) concepts	58
P600	Participate in convoy exercises	55
O531	Develop bare base plans	55
P595	Operate portable radios, such as field radios during contingency exercises or operations	54
G256	Communicate using standardized hand signals	54
A30	Participate in general meetings, such as staff meetings, briefings, conferences, and workshops, other than conducting	48
P570	Erect bare base structures	43
I356	Draw charts using CADD system	42
F235	Inventory equipment, tools, or supplies	41

*Average Number of Tasks Performed - 97

TABLE 24

REPRESENTATIVE TASKS PERFORMED BY RESERVE DAFSC 3E571 PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=21)
O545	Perform airfield damage assessments	90
O549	Plot airfield damage assessments	90
O542	Layout minimum operating strip (MOS) centerlines	90
O535	Identify and report suspected unexploded ordnance (UXO)	90
P574	Erect tents	86
H307	Interpret blueprints	86
P576	Identify bomb crater damage locations	86
G306	Set up surveying equipment	81
P568	Don or doff chemical warfare personal protective clothing	81
O551	Select MOS candidates	81
G289	Measure horizontal distances using tapes	76
O529	Compute repair quality criteria (RQC) for rapid runway repairs (RRRs)	76
P621	Practice base recovery after attack (BRAT) concepts	71
P600	Participate in convoy exercises	71
P595	Operate portable radios, such as field radios during contingency exercises or operations	71
G256	Communicate using standardized hand signals	71
H308	Interpret engineering sketches	67
H310	Letter drawings using free-hand style	67
P638	Tear down, inspect, clean, and reassemble weapons	67
O547	Perform crater profile measurements (CPMs)	67
G305	Set grade stakes	67
O530	Conduct mobility exercises or deployment site surveys	67
O533	Develop camp cantonment layouts	67
O531	Develop bare base plans	67
A30	Participate in general meetings, such as staff meetings, briefings, conferences, and workshops, other than conducting	67
F235	Inventory equipment, tools, or supplies	67
O546	Perform crater layout surveys	62
P579	Inspect mobility bags or kits	62
H341	Reproduce drawings	57
P570	Erect bare base structures	52
P631	Report base damage	43

* Average Number of Tasks Performed - 125

TABLE 25

TASKS WHICH BEST DIFFERENTIATE BETWEEN RESERVE
DAFSC 3E551 AND DAFSC 3E571 PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS		3E551 (N=69)	3E571 (N=21)	DIFFERENCE
G283	Manually input field data into CADD system	48	14	+34
G288	Measure horizontal distances using stadia	51	24	+27
H317	Manually draft architectural renderings	25	-	+25
H318	Manually draft engineering sketches for architectural plans	43	19	+24
I366	Update record drawings using CADD system	29	5	+25
I342	Complete architectural plans using CADD system	49	29	+21
B73	Supervise Engineering Journeymen (AFSC 3E551)	20	67	-46
A1	Assign personnel to work areas or duty positions, other than mobility positions	17	62	-45
B50	Counsel subordinates on personal matters	9	52	-44
D162	Review STSs	16	52	-36
D157	Maintain training records, charts, graphs, or files	26	62	-36
C102	Evaluate personnel for compliance with performance standards	7	43	-36
D125	Conduct on-the-job training (OJT)	41	76	-36
A24	Establish performance standards for subordinates	14	48	-33
A36	Plan personnel or equipment deployments	10	43	-33
A28	Establish work schedules	17	48	-31
D158	Plan or schedule training, such as OJT, proficiency training, orientation training, or ancillary training	13	43	-30
B72	Supervise Engineering Apprentices (AFSC 3E531)	33	62	-29
B49	Conduct supervisory orientations of newly assigned personnel	10	38	-28

TABLE 26

REPRESENTATIVE TASKS PERFORMED BY RESERVE DAFSC 3E591 PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=20)
C103	Evaluate personnel for promotion, demotion, reclassification, or special awards	95
O551	Select MOS candidates	95
A30	Participate in general meetings, such as staff meetings, briefings, conferences, and workshops, other than conducting	95
O549	Plot airfield damage assessments	90
A7	Determine or establish work priorities	90
B68	Interpret engineering plans for subordinates	90
O529	Compute repair quality criteria (RQC) for rapid runway repair (RRRs)	90
H307	Interpret blueprints	85
O542	Lay out minimum operating strip (MOS) centerlines	85
A1	Assign personnel to work areas or duty positions, other than mobility positions	85
P621	Practice base recovery after attack (BRAT) concepts	85
A12	Develop or establish work methods or procedures	85
B73	Supervise Engineering Journeymen (AFSC 3E551)	80
B74	Supervise Engineering Craftsmen (3E571)	80
H308	Interpret engineering sketches	80
P568	Don or doff chemical warfare personal protective clothing	80
P576	Identify bomb crater damage locations	80
A35	Plan or schedule work assignments or priorities	80
A28	Establish work schedules	80
C111	Inspect personnel for compliance with military standards	75
D132	Counsel trainees on training progress	75
B73	Supervise Engineering Apprentices (AFSC 3E531)	70
P595	Operate portable radios, such as field radios during contingency exercises or operations	70
D125	Conduct on-the-job training	65
O546	Perform crater layout surveys	65
J372	Draft or write materials takeoffs	65
D153	Evaluate progress of trainees	65
D152	Evaluate personnel for training needs	55
P574	Erect tents	90

* Average Number of Tasks Performed - 139

TABLE 27

TASKS WHICH BEST DIFFERENTIATE BETWEEN RESERVE
DAFSC 3E571 AND DAFSC 3E591 PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS		3E571 (N=21)	3E591 (N=20)	DIFFERENCE
G256	Communicate using standardized hand signals	71	45	+26
P637	Tear down bare base structures	48	25	+23
D157	Maintain training records, charts, graphs, or files	62	40	+22
D543	Lay out taxiway and runway traffic markings	76	55	+21
D163	Select OJT trainers or certifiers	14	80	-66
C103	Evaluate personnel for promotion, demotion, reclassification, or special awards	33	95	-62
B74	Supervise Engineering Craftsmen (AFSC 3E571)	19	80	-61
C76	Analyze workload requirements	14	75	-61
C118	Write recommendations for awards or decorations	24	80	-56
A35	Plan or schedule work assignments or priorities	33	80	-47
C108	Evaluate work schedules	19	65	-46
C111	Inspect personnel for compliance with military standards	33	75	-42
J372	Draft or write materials takeoffs	24	65	-41
A2	Assign sponsors for newly assigned personnel	24	65	-41
D164	Select or schedule personnel for upgrade or specialized training classes	24	65	-41
D152	Evaluate personnel to determine training needs	14	55	-41
A7	Determine or establish work priorities	52	90	-38
A12	Develop or establish work methods or procedures	48	85	-37
C89	Evaluate drawings or engineering plans for accuracy	43	80	-37
C102	Evaluate personnel for compliance with performance standards	43	80	-37

ANALYSIS OF AFMAN 36-2108 *SPECIALTY DESCRIPTION*

Survey data were compared to the AFMAN 36-2108 *Specialty Description* for Engineering, dated 31 October 1993. The overall specialty description for the 3-, 5-, 7- and 9-skill levels accurately describes the technical and supervisory nature of jobs at the various skill levels. The description also reflects the primary tasks and responsibilities discussed in the **SPECIALTY JOBS** section of this report. The specialty description should be carefully reviewed against the job structure described in the **SPECIALTY JOBS** section of this OSR to ensure all technical and support functions are adequately covered.

TRAINING ANALYSIS

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

Active Duty First-Enlistment Personnel

In this study, there are 191 AD members in their first enlistment (1-48 months TAFMS), representing 19 percent of the total survey sample. Most of their duty time is spent on technical activities involving the reproduction of drawings, performing fundamental drafting practices, and maintaining computer drawing files. Table 28 displays the relative percent of time spent on duties by first-enlistment personnel. Reviewing the table, it is clearly evident that most first-enlistment personnel are primarily performing tasks under Duty I (Performing Computer Aided Design and Drafting (CADD) System Activities), Duty G (Performing Surveying Activities), Duty H (Performing Manual Drafting Activities), and Duty P (Performing General Contingency Activities).

Table 29 lists representative tasks performed by AD first-enlistment personnel. Most involve general tasks, such as reproducing drawings, performing fundamental drafting practices, such as dimensioning, line weights, or sheet layouts using a CADD system. In addition, they maintain computer drawing files and interpret blueprints. Reviewing Table 29, the data displays a very diversified group of first-enlistment personnel who essentially work in two distinct areas--engineering and contract management (see Figure 2).

AFSC 3E5X1 FIRST-ENLISTMENT PERSONNEL CAREER LADDER JOBS (N=191)

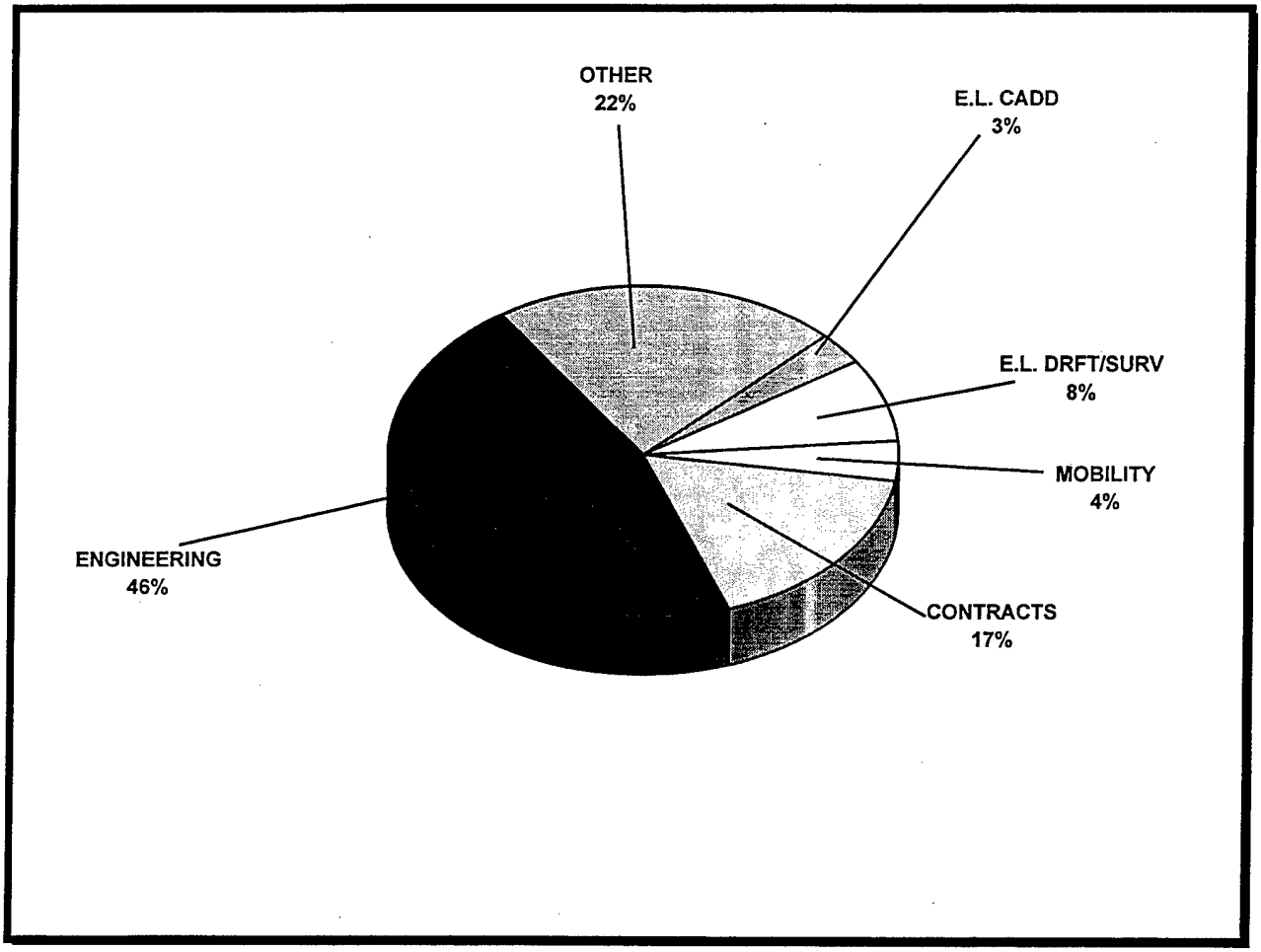

FIGURE 2

Table 30 lists all of the surveying tools, systems or equipment used or maintained by 30 percent or more of first-enlistment airmen. Most commonly used equipment include Autocad, Transit, Total Station with Data Recorder, computers and calculators

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

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

training personnel with a rank-ordering of those tasks in the JI considered important for first-enlistment personnel training (see Table 31 for the top-rated tasks), along with a measure of the difficulty of the JI tasks (see selected high rated tasks presented in Table 32). When combined with data on the percentages of first-enlistment personnel performing tasks, comparisons can then be made to determine if training adjustments are necessary. For example, tasks receiving high ratings on both task factors, accompanied by moderate to high percentages performing, may warrant resident training. Those tasks receiving high task factor ratings, but low percentages performing, may be more appropriately planned for OJT programs within the career ladder. Low task factor ratings may highlight tasks best omitted from training for first-enlistment personnel, but this decision must be weighed against percentages of personnel performing the tasks, command concerns, and criticality of the tasks.

To assist technical school personnel, AFOMS has developed a computer program that incorporates these secondary factors and the percentage of first-enlistment personnel performing each task to produce an Automated Training Indicator (ATI) for each task. These indicators correspond to training decisions listed and defined in the Training Decision Logic Table found in Attachment 2, AFI 36-2601, and allows course personnel to quickly focus their attention on those tasks which are most likely to qualify for initial resident course consideration.

Table 31 presents tasks with the highest TE ratings for AFSC 3E5X1 first-enlistment airmen, while Table 32 displays those tasks AFSC 3E5X1 raters judged to be most difficult to learn how to do. For example, TE raters (refer to Table 31) reported that tasks such as setting up surveying equipment and completing architectural plans and civil plans using a CADD system require a lot of training emphasis and, from the data, most airmen in their first job and within their first enlistment are performing these tasks. Table 32 shows TD raters report drafting or writing project specifications, developing career development courses (CDCs) and computing horizontal curve data to be examples of some of the more difficult tasks to learn. However, due to the low numbers of individuals performing these type of tasks, these tasks would be inappropriate for including in a technical resident curriculum and are more appropriately taught as an OJT item.

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

TABLE 28

RELATIVE PERCENT TIME SPENT ON DUTIES BY ACTIVE DUTY
FIRST-ENLISTMENT PERSONNEL
(N=191)

	DUTIES	PERCENT TIME SPENT
A	ORGANIZING AND PLANNING	5
B	DIRECTING AND IMPLEMENTING	1
C	INSPECTING AND EVALUATING	4
D	TRAINING	1
E	PERFORMING GENERAL ADMINISTRATIVE ACTIVITIES	6
F	PERFORMING SUPPLY AND EQUIPMENT ACTIVITIES	5
G	PERFORMING SURVEYING ACTIVITIES	16
H	PERFORMING MANUAL DRAFTING ACTIVITIES	12
I	PERFORMING COMPUTER AIDED DESIGN AND DRAFTING (CADD) SYSTEM ACTIVITIES	23
J	PERFORMING PROJECT PLANNING ACTIVITIES	1
K	PERFORMING CONTRACT MANAGEMENT ACTIVITIES	8
L	PERFORMING COST-ESTIMATE AND ANALYSIS ACTIVITIES	1
M	PERFORMING MATERIAL TESTING	*
N	PERFORMING GROUND RADAR EVALUATIONS	1
O	PERFORMING ENGINEERING SPECIFIC CONTINGENCY ACTIVITIES	7
P	PERFORMING GENERAL CONTINGENCY ACTIVITIES	10

* Denotes less than .5 percent

TABLE 29

REPRESENTATIVE TASKS PERFORMED BY
ACTIVE DUTY FIRST-ENLISTMENT PERSONNEL
(N=191)

TASKS		PERCENT MEMBERS PERFORMING
H341	Reproduce drawings	73
I363	Perform fundamental drafting practices, such as dimensioning, line weights, or sheet layouts using CADD system	65
H307	Interpret blueprints	64
I360	Maintain computer drawing files	63
H308	Interpret engineering sketches	62
G306	Set up surveying equipment	60
I342	Complete architectural plans using CADD system	59
I343	Complete civil plans using CADD system	59
I350	Develop modifications from existing drawings using CADD system	59
I365	Update as-built drawings using CADD system	58
G289	Measure horizontal distances using tapes	58
H312	Maintain drawing files, other than computer drawing files	56
I344	Complete electrical plans using CADD system	54
O545	Perform airfield damage assessments	53
I345	Complete mechanical plans using CADD system	52
G286	Measure horizontal distances using electronic equipment	52
I366	Update record drawings using CADD system	51
I346	Complete structural plans using CADD system	51
I356	Draw charts using CADD system	51
O549	Plot airfield damage assessments	51
G283	Manually input field data into CADD system	45
A30	Participate in general meetings, such as s staff meetings, briefings, conferences, and workshops, other than conducting	43
I352	Draft preliminary designs for civil plans using CADD system	41
I351	Draft preliminary designs for architectural plans using CADD system	40
I361	Measure irregular lines using CADD system	39
I353	Draft preliminary designs for electrical plans using CADD system	37
C89	Evaluate drawings or engineering plans for accuracy	36
I364	Revise BCPs using CADD system	34
E205	Pick up or deliver messages	33

Average Number of Tasks Performed - 70

TABLE 30

SURVEYING TOOLS, SYSTEMS OR EQUIPMENT MAINTAINED BY MORE THAN 30 PERCENT ACTIVE DUTY FIRST-JOB OR FIRST-ENLISTMENT PERSONNEL

	% MEMBERS MAINTAINING	
EQUIPMENT	3E5X1 1ST JOB (N=78)	3E5X1 1ST ENL (N=191)
Computer Aided Design System Used (CADD)		
Autocad	64	63
Intergraph	26	27
None	6	8
Other	4	2
Survey Instruments used within functional area		
Transit	42	47
Total Station with Data Recorder	37	42
Theodolite without EDM	32	34
Total Station with out Data Recorder	31	31
General Equipment used		
Computers	97	97
Calculators	78	85
Drawing tables	71	66
Mechanical pencils	64	62
Plotters	60	60
Level rods	63	59
Precision rods, such as Philadelphia rods	54	56
Radios	53	54
Range poles	49	50
Plumb bobs	49	48
Prisms	47	48
Diazo process copying machines	47	46
Lettering set with lettering guides	46	46
Drafting machines	41	38
Lead holders	54	36
Hammers, sledge	38	35
Levels, dumpy or engineer	26	33
Cameras	31	31
Recorder, data	33	31

TABLE 31

DAFSC 3E5X1 TASKS WITH HIGHEST TRAINING EMPHASIS RATINGS

TASKS		TNG EMP*	PERCENT MEMBERS PERFORMING 1ST JOB	1ST ENL	TASK DIFF**
G306	Set up surveying equipment	6.81	64	60	3.63
I342	Complete architectural plans using CADD system	6.75	53	59	5.78
I343	Complete civil plans using CADD system	6.71	53	59	5.93
I345	Complete mechanical plans using CADD system	6.58	46	52	6.12
I363	Perform fundamental drafting practices, such as dimensioning, line weights, or sheet layouts using CADD system	6.57	68	65	4.73
I344	Complete electrical plans using CADD system	6.57	47	54	6.13
I350	Develop modifications from existing drawings using CADD system	6.55	56	59	5.26
I360	Maintain computer drawing files	6.54	62	63	4.83
I346	Complete structural plans using CADD system	6.43	47	51	5.85
I365	Update as-built drawings using CADD system	6.29	54	58	5.02
I366	Update record drawings using CADD system	6.19	47	51	5.10
H308	Interpret engineering sketches	6.16	63	62	5.36
H307	Interpret blueprints	6.13	65	64	5.29
I351	Draft preliminary designs for architectural plans using CADD system	6.08	36	40	6.04
I352	Draft preliminary designs for civil plans using CADD system	6.08	36	41	6.04
I355	Draft preliminary designs for structural plans using CADD system	6.02	32	36	6.11
G286	Measure horizontal distances using electronic equipment	6.01	50	52	4.28
I353	Draft preliminary designs for electrical plans using CADD system	6.00	28	37	6.19
I354	Draft preliminary designs for mechanical plans using CADD system	6.00	32	38	6.26
G283	Manually input field data into CADD system	5.98	46	45	5.65
G280	Maintain surveying equipment	5.97	40	41	4.35
O545	Perform airfield damage assessments	5.91	45	53	5.27
G303	Record field notes using standard surveying procedures	5.89	38	39	3.94
G285	Measure horizontal angles	5.87	51	48	4.37

* Mean TE Rating is 2.17, and Standard Deviation is 1.62 (High TE = 3.79)

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

TABLE 32

DAFSC 3E5X1 TASKS WITH HIGHEST TASK DIFFICULTY RATINGS

TASKS			PERCENT MEMBERS PERFORMING					
		TASK DIFF*	1ST JOB	1ST ENL	DAFSC 3E531	DAFSC 3E551	DAFSC 3E571	TNG EMP
J374	Draft or write project specifications	7.76	1	2	2	12	20	2.38
D136	Develop career development courses (CDCs)	7.23	4	3	3	1	1	.59
G263	Compute horizontal curve data	7.23	12	13	11	8	7	4.68
G271	Construct map drawings using geographical information system (GIS)	7.19	5	10	10	9	7	4.00
L444	Prepare final cost-estimates	7.08	6	7	4	18	28	1.40
C105	Evaluate project specifications	7.08	6	8	7	24	43	2.55
A29	Initiate host-tenant or interservice agreements	7.07	0	3	3	4	8	.35
N518	Compute surveyed shadow and vertical angles	7.03	0	0	0	1	1	.40
J372	Draft or write materials takeoffs	6.99	3	3	3	7	20	2.91
J370	Create preliminary designs for mechanical plans	6.99	5	7	7	10	13	2.45
C90	Evaluate drawings or engineering plans for constructibility	6.98	6	10	12	32	51	3.63
J376	Estimate cost-elements, such as materials, equipment, or labor	6.98	5	11	7	25	41	2.75
G269	Compute vertical curves	6.98	6	9	9	5	4	4.57
M513	Write final airfield pavement evaluation reports	6.94	0	0	0	1	1	.61
J373	Draft or write programming documents	6.90	3	3	2	6	11	1.74
D138	Develop formal course curricula, plans of instructions (POIs), or specialty training standards (STSs)	6.89	1	2	3	2	3	.38
J369	Create preliminary designs for electrical plans	6.86	5	7	7	10	13	2.46
N519	Construct movable radar coverage indicators	6.85	0	0	0	0	0	.25
L448	Write evaluations of BCPs	6.84	0	1	0	2	2	.78
K397	Develop performance work statements	6.82	10	10	8	18	23	1.86
M455	Conduct California Bearing Ratio (CBR) field tests	6.80	0	2	2	3	2	1.60
J371	Create preliminary designs for structural plans	6.79	5	7	7	10	13	2.52
J375	Draft or write statements of work (SOWs)	6.79	5	7	6	21	38	2.25
I362	Perform architectural renderings using CADD system	6.75	14	21	19	14	8	3.94
G260	Compute earthwork volumes	6.72	4	10	12	9	10	4.85

* TD MEAN = 5.00; SD = 1.00

Specialty Training Standard (STS)
Engineering Utilization and Training Workshop (U&TW)

As mentioned earlier, data from this occupational survey were used to support a Engineering U&TW in October 1996. Survey data compiled in the form of a special U&TW Extract was provided to workshop participants. This U&TW Extract included information relating to survey sample, job structure, skill level progression, first-job and first-enlistment personnel utilization, job satisfaction and Mission Ready Technician (MRT) core task identification. The purpose and other pertinent information concerning the U&TW is described below:

Purpose: To review the CFETP, identify Engineering Assistant MRT and Career Development Course (CDC) requirements, verify/identify core tasks, and review advanced courses to meet the future training needs for the career field.

Location/Dates: Detachment 7/366th Training Squadron, Ft Leonard Wood, MO. 28 October - 1 November 96.

Attendees: The workshop was chaired by SMSgt Gelsleichter, HQ AFCESA/CEOT, and facilitated by Mr. Bobby Halterman, Det 7/366 TRS.

NAME	OFFICE	
• SMSgt MICHAEL GELSLEICHTER	HQ/AFCESA/CEOT	Chairman
• Mr. BOBBY HALTERMAN	DET 7/366 TRS	Facilitator
• 2Lt SCOTT M. FOLEY	AFOMS/OMYO	Member
• SMSgt DON BRANNAM	HQ AMC/CECD	Member
• SMSgt JESSE PARKS	HQ PACAF/CECS	Member
• MSgt ROBERT ELLS	AFTAC/LESC	Member
• MSgt JOHN TUCKER	11 CES/CEOEC	Member
• TSgt CHRISTINE CLAY	159 CES/CEEE	Member
• TSgt JOHN SANCHEZ	944 CES/CEEC	Member
• TSgt RANDY VANSLAMBROUCK	HQ USAFE/CEOM	Member

Summary: The U&TW established MRT and CDC requirements for the career ladder, restructured and simplified the CFETP, verified/identified core tasks, and identified future training needs for the Engineering Assistant career ladder. OSR data were used throughout the U&TW and supported changes made by workshop participants.

JOB SATISFACTION ANALYSIS

An examination of the job satisfaction indicators of various groups can give career ladder managers a better understanding of some of the factors which may affect the job performance of airmen in the career ladder. Attitude questions covering job interest, perceived utilization of talents and training, sense of accomplishment from work, and reenlistment intentions were included in the survey booklet to provide indications of job satisfaction.

Table 33 presents job satisfaction data for AFSC 3E5X1 AD TAFMS groups, together with TAFMS data for a comparative sample of Direct Support career ladders surveyed in 1995. Overall, the majority of the AD AFSC 3E5X1 survey sample express very positive feelings toward their jobs and display approximately the same percentages than the comparative sample groups. However, there are some differences among the groups. Personnel in this career ladder report on the average higher job interest indicators than their comparative sample; however, in the 1-48 months TAFMS group, the indicators are lower for the 3E5X1 personnel than the comparative sample. Indicators for the perceived use of personnel talents show a positive trend; however, again, the 1-48 months TAFMS 3E5X1 personnel display the lower indicators. Of more importance is the perceived use of training, both in the 1-48 months and 49-96 months TAFMS for this study reported lower scores than did their comparative sample counterparts. Overall, the sense of accomplishment from the job is about equal or greater than the comparative sample, but the reenlistment intentions of the 3E5X1 personnel are equal or lower across the board.

An indication of how job satisfaction perceptions have changed over time is provided in Table 34, where again TAFMS data for 1996 survey respondents are presented, along with data from respondents to the last OSR. The incumbents in the current study express equal job interest, and feel their talents and training are being used about the same as was expressed by respondents in the last OSR.

In Table 35, review of the job satisfaction data for personnel in the specialty jobs identified in this survey reveals that airmen in all jobs responded very positively to all the indicators listed. The Entry-Level CADD Draftsmen Job did express the lowest (60 percent) reenlistment intentions than did any other specialty job.

When there are serious problems in a career ladder, survey respondents are usually quite free with write-in comments to complain about perceived problems in the field. No particular trends were noted among the comments received.

TABLE 33

JOB SATISFACTION INDICATORS FOR ACTIVE DUTY AFSC 3E5X1 TAFMS GROUPS
(PERCENT MEMBERS RESPONDING)

	1-48 MONTHS TAFMS		49-96 MONTHS TAFMS		97+ MONTHS TAFMS	
	AFSC 3E5X1 (N=191)	COMP SAMPLE (N=5,049)	AFSC 3E5X1 (N=125)	COMP SAMPLE (N=3,150)	AFSC 3E5X1 (N=368)	COMP SAMPLE (N=6,337)
EXPRESSED JOB INTEREST:						
INTERESTING	80	86	78	65	84	73
SO-SO	14	10	15	19	9	17
DULL	7	4	6	16	7	10
PERCEIVED USE OF TALENTS:						
FAIRLY WELL TO PERFECTLY	81	89	80	74	82	80
NONE TO VERY LITTLE	19	11	20	26	18	20
PERCEIVED USE OF TRAINING:						
FAIRLY WELL TO PERFECT	73	91	66	72	74	72
NONE TO VERY LITTLE	27	9	34	28	26	28
SENSE OF ACCOMPLISHMENT FROM JOB:						
SATISFIED	73	57	74	74	73	69
NEUTRAL	11	42	9	26	8	9
DISSATISFIED	16	1	17	-	19	22
REENLISTMENT INTENTIONS:						
YES OR PROBABLY YES	54	62	67	67	74	77
NO OR PROBABLY NO	46	16	33	12	7	9
WILL RETIRE	-	22	-	21	18	14

NOTE: Comparative data are from 2T1X1, 2S0X1, 3C0X1, 3C0X2, 3E0X1, 3E2X1, 3E3X1, 3E4X1 and 3V0X3 surveyed in 1995 (N=14,536).

TABLE 34

COMPARISON OF JOB SATISFACTION INDICATORS FOR ACTIVE DUTY AFSC 3E5X1
TAFMS GROUPS IN CURRENT STUDY TO PREVIOUS STUDY
(PERCENT MEMBERS RESPONDING)

	1-48 MONTHS TAFMS		49-96 MONTHS TAFMS		97+ MONTHS TAFMS	
	1996 3E5X1 (N=191)	1990 553X0 (N=209)	1996 3E5X1 (N=125)	1990 553X0 (N=298)	1996 3E5X1 (N=368)	1990 553X0 (N=531)
EXPRESSED JOB INTEREST:						
INTERESTING	80	82	78	81	84	86
SO-SO	14	9	15	11	9	7
DULL	7	9	6	8	7	7
PERCEIVED USE OF TALENTS:						
FAIRLY WELL TO PERFECT	81	80	80	82	82	71
NONE TO VERY LITTLE	19	20	20	17	18	29
PERCEIVED USE OF TRAINING:						
FAIRLY WELL TO PERFECT	73	77	66	71	74	74
NONE TO VERY LITTLE	27	33	34	29	26	26
SENSE OF ACCOMPLISHMENT FROM JOB:						
SATISFIED	73	NA	74	NA	73	NA
NEUTRAL	11	NA	9	NA	8	NA
DISSATISFIED	16	NA	17	NA	19	NA
REENLISTMENT INTENTIONS:						
YES OR PROBABLY YES	54	45	67	67	74	68
NO OR PROBABLY NO	46	54	33	22	7	30
WILL RETIRE	-	0	-	0	18	*

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

TABLE 35

JOB SATISFACTION INDICATORS FOR AFSC 3E5X1 JOB GROUPS
(PERCENT MEMBERS RESPONDING)

	ENTRY-LVL CADD DRAFTSMEN JOB (ST285, N=10)	ENTRY-LVL DRAFTSMEN/ SURVEYOR JOB (ST104, N=31)	ENGINEERING CLUSTER (ST103, N=376)	MOBILITY CLUSTER (GP108, N=74)
EXPRESSED JOB INTEREST:				
INTERESTING	70%	84%	88%	82%
SO-SO	30%	13%	10%	13%
DULL	-	3%	2%	5%
PERCEIVED USE OF TALENTS:				
FAIRLY WELL TO PERFECT	70%	87%	88%	89%
NONE TO VERY LITTLE	30%	13%	12%	11%
PERCEIVED USE OF TRAINING:				
FAIRLY WELL TO PERFECT	40%	94%	87%	87%
NONE TO VERY LITTLE	60%	6%	13%	13%
SENSE OF ACCOMPLISHMENT FROM JOB:				
SATISFIED	80%	68%	79%	76%
NEUTRAL	20%	16%	9%	12%
DISSATISFIED	-	16%	12%	12%
REENLISTMENT INTENTIONS:				
YES OR PROBABLY YES	60%	71%	72%	76%
NO OR PROBABLY NO	40%	29%	18%	12%
WILL RETIRE	-	-	10%	12%

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

TABLE 35 (CONTINUED)

JOB SATISFACTION INDICATORS FOR AFSC 3E5X1 JOB GROUPS
(PERCENT MEMBERS RESPONDING)

	CONTRACT MANAGEMENT CLUSTER (ST029, N=265)	GROUND RADAR EVALUATORS JOB (ST315, N=7)	SUPERVISOR CLUSTER (ST052, N=72)
EXPRESSED JOB INTEREST:			
INTERESTING	83%	86%	79%
SO-SO	11%	14%	10%
DULL	6%	-	10%
PERCEIVED USE OF TALENTS:			
FAIRLY WELL TO PERFECT	82%	71%	79%
NONE TO VERY LITTLE	18%	29%	21%
PERCEIVED USE OF TRAINING:			
FAIRLY WELL TO PERFECT	73%	71%	67%
NONE TO VERY LITTLE	27%	29%	33%
SENSE OF ACCOMPLISHMENT FROM JOB:			
SATISFIED	71%	71%	69%
NEUTRAL	10%	14%	7%
DISSATISFIED	18%	14%	24%
REENLISTMENT INTENTIONS:			
YES OR PROBABLY YES	72%	86%	69%
NO OR PROBABLY NO	17%	14%	8%
WILL RETIRE	11%	-	22%

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

IMPLICATIONS

This survey was initiated to provide current job and task data for use in evaluating the AFMAN 36-2108 *Specialty Description* and appropriate training documents

Survey results clearly indicate that the present classification structure, as described in the latest specialty description, accurately portrays the jobs performed in this career ladder. Career ladder training documents appear, on the whole, to be well supported by survey data. As was pointed out in the **JOB SATISFACTION ANALYSIS** section, job satisfaction responses by AFSC 3E5X1 personnel are very high and most individuals reported high utilization of training, thus indicating great support for the overall training system. Additionally, the career ladder progression is good, with the move from technical work at the 3- and 5-skill levels to supervisory and management at the 7- and 9-skill levels.

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APPENDIX A

SELECTED REPRESENTATIVE TASKS PERFORMED BY MEMBERS OF CAREER LADDER JOBS

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TABLE A1

ENTRY-LEVEL CADD DRAFTSMEN JOB (ST285, N=10)

TASKS		PERCENT MEMBERS PERFORMING
I366	Update record drawings using CADD system	100
I365	Update as-built drawings using CADD system	100
I363	Perform fundamental drafting practices, such as dimensioning, line weights, or sheet layouts using CADD system	70
I350	Develop modifications from existing drawings using CADD system	70
H308	Interpret engineering sketches	70
H307	Interpret blueprints	70
I342	Complete architectural plans using CADD system	70
I344	Complete electrical plans using CADD system	70
I343	Complete civil plans using CADD system	60
I361	Measure irregular lines using CADD system	70
G283	Manually input field data into CADD system	50
I346	Complete structural plans using CADD system	50
I356	Draw charts using CADD system	40
I345	Complete mechanical plans using CADD system	50
I360	Maintain computer drawing files	50
I362	Perform architectural renderings using CADD system	30
C89	Evaluate drawings or engineering plans for accuracy	60
F226	Identify and report equipment or supply problems	30
D125	Conduct on-the-job training (OJT)	40
A30	Participate in general meetings, such as staff meetings, briefings, conferences, and workshops, other than conducting	40
H341	Reproduce drawings	40
J372	Draft or write materials takeoffs	20
I364	Revise BCPs using CADD system	20
I348	Develop airfield marking plans using CADD system	20
E187	Initiate electronic mail (E-mail)	30
I357	Draw oblique projection drawings, such as plumbing riser diagrams using CADD system	30
I353	Draft preliminary designs for electrical plans using CADD system	20

TABLE A2

ENTRY-LEVEL DRAFTSMEN/SURVEYOR JOB (ST104, N=31)

TASKS		PERCENT MEMBERS PERFORMING
G306	Set up surveying equipment	90
G287	Measure horizontal distances using pacing technique	90
H341	Reproduce drawings	87
G289	Measure horizontal distances using tapes	87
G291	Measure vertical distances or heights	71
G285	Measure horizontal angles	68
G286	Measure horizontal distances using electronic equipment	68
H307	Interpret blueprints	65
I363	Perform fundamental drafting practices, such as	65
G303	Record field notes using standard surveying procedures	65
G256	Communicate using standardized hand signals	58
I360	Maintain computer drawing files	55
I342	Complete architectural plans using CADD system	55
H310	Letter drawings using free-hand style	55
H312	Maintain drawing files, other than computer drawing files	52
G283	Manually input field data into CADD system	52
G288	Measure horizontal distances using stadia	52
H335	Manually update as-built drawings	48
I350	Develop modifications from existing drawings using CADD	48
H308	Interpret engineering sketches	48
I343	Complete civil plans using CADD system	42
I365	Update as-built drawings using CADD system	42
G280	Maintain surveying equipment	42
G294	Perform as-built surveys	39
I356	Draw charts using CADD system	39
I361	Measure irregular lines using CADD system	35
G300	Perform topographic surveys	35
I344	Complete electrical plans using CADD system	35
I352	Draft preliminary designs for civil plans using CADD system	32
H336	Manually update record drawings	29

TABLE A3

ENGINEERING CLUSTER (ST103, N=376)

TASKS		PERCENT MEMBERS PERFORMING
G306	Set up surveying equipment	94
H307	Interpret blueprints	93
H341	Reproduce drawings	89
G289	Measure horizontal distances using tapes	88
H308	Interpret engineering sketches	87
O545	Perform airfield damage assessments	81
H312	Maintain drawing files, other than computer drawing files	80
O549	Plot airfield damage assessments	79
O551	Select MOS candidates	78
P574	Erect tents	78
G303	Record field notes using standard surveying procedures	76
G280	Maintain surveying equipment	76
I360	Maintain computer drawing files	75
G256	Communicate using standardized hand signals	75
O542	Lay out minimum operating strip (MOS) centerlines	75
I343	Complete civil plans using CADD system	74
G285	Measure horizontal angles	74
I363	Perform fundamental drafting practices, such as	73
P568	Don or doff chemical warfare personal protective clothing	71
P576	Identify bomb crater damage locations	70
I342	Complete architectural plans using CADD system	69
I350	Develop modifications from existing drawings using CADD	68
G286	Measure horizontal distances using electronic equipment	68
I356	Draw charts using CADD system	67
I365	Update as-built drawings using CADD system	66
I344	Complete electrical plans using CADD system	64
I346	Complete structural plans using CADD system	64
I345	Complete mechanical plans using CADD system	61
I352	Draft preliminary designs for civil plans using CADD system	61
I366	Update record drawings using CADD system	60

TABLE A4

MOBILITY CLUSTER (GP108, N=74)

TASKS		PERCENT MEMBERS PERFORMING
P574	Erect tents	88
O545	Perform airfield damage assessments	77
P568	Don or doff chemical warfare personal protective clothing	76
H307	Interpret blueprints	76
G306	Set up surveying equipment	76
O542	Lay out minimum operating strip (MOS) centerlines	74
O551	Select MOS candidates	72
P576	Identify bomb crater damage locations	72
O529	Compute repair quality criteria (RQC) for rapid runway	69
H341	Reproduce drawings	68
O549	Plot airfield damage assessments	68
O535	Identify and report suspected unexploded ordnance (UXO)	68
P579	Inspect mobility bags or kits	61
G289	Measure horizontal distances using tapes	61
O546	Perform crater layout surveys	54
H308	Interpret engineering sketches	54
O533	Develop camp cantonment layouts	54
P621	Practice base recovery after attack (BRAT) concepts	53
P598	Operate vehicles during contingency exercises or operations	51
P595	Operate portable radios, such as field radios during	51
P571	Erect camouflage netting	51
H312	Maintain drawing files, other than computer drawing files	49
P638	Tear down, inspect, clean, and reassemble weapons	49
O547	Perform crater profile measurements (CPMs)	47
D125	Conduct on-the-job training (OJT)	47
H310	Letter drawings using free-hand style	47
G256	Communicate using standardized hand signals	45
G280	Maintain surveying equipment	45

TABLE A5

CONTRACT MANAGEMENT CLUSTER (ST029, N=265)

TASKS		PERCENT MEMBERS PERFORMING
C87	Evaluate contractor compliance with work standards	74
K387	Conduct daily on-site visits	83
K407	Identify contractor performance discrepancies	86
E195	Maintain daily inspection records	72
K413	Maintain records of contract changes	88
K412	Inspect and record construction projects for compliance with plans and specifications	77
K398	Document construction activities	72
K386	Conduct contract final acceptance inspections	75
K389	Coordinate construction with appropriate agencies	72
K401	Evaluate data on AF Forms 3000 (Material Approval Submittal)	69
K402	Evaluate data on AF Forms 3064 (Contract Progress Schedule)	73
K408	Identify on-site or design deficiencies	75
K436	Write official memorandums to contracts	65
K410	Inspect and record construction activities compliance with safety regulations or procedures	72
K424	Prepare prefinal punch lists	72
K427	Review progress schedules	74
K385	Conduct construction contract preacceptance inspections	71
K388	Conduct inspections of service contracts	29
K396	Coordinate work clearance requests with appropriate agencies	72
K403	Evaluate data on AF Forms 3065	68
K417	Participate in preperformance conferences	76
K390	Coordinate contract modifications with construction managers	69
J376	Estimate cost-elements, such as materials, equipment, or labor	51
K382	Complete AF Forms 3065 (Contract Progress Report)	65

TABLE A6

GROUND RADAR EVALUATORS JOB (ST315, N=7)

TASKS		PERCENT MEMBERS PERFORMING
N514	Analyze radar or radio lines of sight in relation to ground	100
G261	Compute geographical locations using global positioning	100
N516	Collect physical radar site data	100
E175	Coordinate obtaining TDY orders, passports, or visas with appropriate agencies	100
G289	Measure horizontal distances using tapes	100
N515	Calculate magnetic declinations	100
G265	Compute level circuit data	100
G306	Set up surveying equipment	86
G255	Assemble background reconnaissance information on sites	86
N525	Record field notes using radar evaluation procedures	86
N522	Establish baselines	86
N521	Draw pictorial site plans	86
N524	Format field data for computer input	86
G285	Measure horizontal angles	86
G280	Maintain surveying equipment	86
E182	Draft requests for TDY orders, passports, or visas	86
G253	Adjust level circuit data	86
G290	Measure vertical angles	86
G299	Perform site reconnaissance	86
D125	Conduct on-the-job training (OJT)	85
G257	Compute azimuths and bearings	71
N517	Compute solar data	71
G279	Maintain field survey files	71
G303	Record field notes using standard surveying procedures	71
G291	Measure vertical distances or heights	71
C92	Evaluate field notes	71
G272	Download electronic data recorders into computer aided	57
N523	Establish horizontal profiles	57
E183	Draft trip itineraries	57

TABLE A7

SUPERVISOR CLUSTER (ST052, N=72)

TASKS		PERCENT MEMBERS PERFORMING
A30	Participate in general meetings, such as staff meetings, briefings, conferences, and workshops, other than conducting	80
A7	Determine or establish work priorities	81
B73	Supervise Engineering Journeymen (AFSC 3E551)	61
A35	Plan or schedule work assignments or priorities	74
C102	Evaluate personnel for compliance with performance standards	72
A24	Establish performance standards for subordinates	78
C116	Write EPRs	68
D125	Conduct on-the-job training (OJT)	69
C103	Evaluate personnel for promotion, demotion, reclassification, or special awards	73
B50	Counsel subordinates on personal matters	78
C78	Conduct performance feedback evaluation sessions	69
A12	Develop or establish work methods or procedures	71
B72	Supervise Engineering Apprentices (AFSC 3E531)	51
A1	Assign personnel to work areas or duty positions, other than mobility positions	65
B74	Supervise Engineering Craftsmen (AFSC 3E571)	47
A28	Establish work schedules	64
C118	Write recommendations for awards or decorations	72
C76	Analyze workload requirements	61
C111	Inspect personnel for compliance with military standards	64
B69	Interpret policies, directives, or procedures for subordinates	60
B75	Supervise military personnel with AFSCs other than AFSC 3E5X1	38
B49	Conduct supervisory orientations of newly assigned personnel	63
A34	Plan or prepare briefings, conferences, or workshops	56

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