UNITED STATES AIR FORCE

OCCUPATIONAL SURVEY REPORT

AIRBORNE SURVEILLANCE RADAR SYSTEMS

AFSC 2A1X4

OSSN 2304

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OCCUPATIONAL ANALYSIS PROGRAM
AIR FORCE OCCUPATIONAL MEASUREMENT SQUADRON
AIR EDUCATION AND TRAINING COMMAND
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PREFACE

This report presents the results of an Air Force Occupational Survey of the Airborne Surveillance Radar Systems career ladder, Air Force Specialty Code (AFSC) 2A1X4. 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 Second Lieutenant Jeffrey Nagy, Inventory Development Specialist. Computer programming support was provided by Mr. Tyrone Hill. Mr. Richard G. Ramos provided administrative support. Second Lieutenant Robert J. Schmoldt, 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/OMYXI, 1550 5th Street East, Randolph Air Force Base, Texas 78150-4449, or by calling DSN 487-5543. For information on the Air Force occupational survey process or other on-going projects, visit our web site at http://www.omsq.af.mil.

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SUMMARY OF RESULTS

1. **Survey Coverage**: The Airborne Surveillance Radar Systems career ladder (AFSC 2A1X4) was surveyed to obtain current job and task data for use in examining training programs. Survey results are based on responses from 150 AFSC 2A1X4 personnel (63 percent of the assigned population) from a well-represented range of major commands.

2. **Specialty Jobs**: Structure analysis identified two clusters and four jobs: ISO-Phase Inspector Job, AWACS Technician Cluster, JSTARS Technician Job, Maintenance Support Job, Management/Supervision Cluster, and Formal Training Instructor Job. Most personnel are distributed into either the AWACS Cluster (59 percent), JSTARS Job (12 percent), or Management/Supervision Cluster (18 percent).

3. **Career Ladder Progression**: Personnel in the Airborne Surveillance Radar Systems career ladder follow a typical career progression pattern. Three- and 5-skill level personnel perform technical functions oriented toward fault isolation, bench checking, and equipment removal, repair, and replacement actions. Seven-skill level members perform more supervisory and management tasks, although they still perform some equipment maintenance. AFMAN 36-2108 Specialty Descriptions are accurate.

4. **Training Analysis**: Career ladder training documents appear to be well supported by survey data. The Specialty Training Standard (STS) provides comprehensive coverage of the work performed by personnel in this career ladder, although many paragraphs relating to JSTARS activities lacked typical support. Support for these paragraphs was found, however, through high performance by personnel in the JSTARS Technician Job. Both Plans of Instruction (POI) were generally supported. The largest disparity found was in high-performance tasks not matched to Course E3ABR2A134 000 (AWACS). All training documents should be reviewed thoroughly against the Training Extract to identify and correct any real deficiencies. High perceived levels of training utilization, across all categories, indicate support for the overall training program.

5. **Job Satisfaction**: When compared to the previous 1994 survey and to a comparative sample of similar AFSCs surveyed in 1997, members within AFSC 2A1X4 seemed generally satisfied, find their job interesting, and gain a sense of accomplishment from what they do. As well, they believe that their talents and training are being utilized very well. Intentions for reenlistment, however, were lower than the comparison samples across all categories. Satisfaction within jobs or clusters identified indicates that AWACS and JSTARS Technicians, as well as managers and supervisors, feel their jobs are interesting, their talents and training are well utilized, and they obtain a sense of accomplishment from their work. Reenlistment intentions were noticeably better for AWACS and JSTARS Technicians than other jobs identified.

6. **Implications**: This is the first survey that includes information pertinent to JSTARS personnel and contains updated information on AWACS personnel. Most personnel (59 percent) in this AFSC were working in the AWACS Technician Cluster, while 12 percent were working in the JSTARS Technician Job. Career ladder progression is very typical of most career ladders, and is well reflected in the AFMAN 36-2108 Specialty Descriptions. Training documents appear to be well supported by OSR data, although some elements in both the STS and POIs should be carefully reviewed for fine-tuning. And finally, job satisfaction among career ladder personnel is good, especially with those performing the technical jobs and those who manage and supervise.

OCCUPATIONAL SURVEY REPORT (OSR)
AIRBORNE SURVEILLANCE RADAR SYSTEMS
(AFSC 2A1X4)

INTRODUCTION

This is a report of an occupational survey for the Airborne Surveillance Radar Systems career ladder as conducted by the Occupational Analysis Flight, Air Force Occupational Measurement Squadron (AFOMS). Data collected from this survey will provide the most current information available to aid in updating and validating career ladder documents and training programs.

The last OSR for this AFSC was published in June 1994, and covered both AFSC 1A5X3, Airborne Radar Systems and AFSC 2A1X4, Airborne Warning and Control Radar. Since the last survey in 1994, the E-8 Joint Surveillance Target Attack Radar Systems (JSTARS) aircraft has been introduced into the career field, and the title of AFSC 2A1X4 has been changed to Airborne Surveillance Radar Systems.

Background

As described in the AFMAN 36-2108 *Airman Classification*, dated 11 March 1998, Airborne Surveillance Radar System members inspect, modify, and maintain equipment for the airborne warning and control system (AWACS) surveillance radar, and JSTARS, as well as interrogator systems.

Specific duties and responsibilities of AFSC 2A1X4 include advising on problems of fault detection and isolation, maintenance, and modification of surveillance radar and interrogation systems. Personnel analyze equipment operating characteristics to determine sources of malfunction. They identify maintenance problem areas and recommend corrective action. They perform production functions and coordinate maintenance plans to meet operational commitments. They supervise and assist in aircraft launching and recovery. They review maintenance data collection summaries to determine trends and production effectiveness. They debrief flight personnel.

Members of AFSC 2A1X4 also inspect and perform surveillance radar and interrogator system maintenance. They also inspect and test radar and interrogator systems to locate defects. They modify equipment according to time compliance technical orders and other directives. They isolate malfunctioning radar equipment using built-in and manual fault isolation testing and diagnostic routines. They check components for technical order compliance and verify equipment performance and modifications.

Finally, members of AFSC 2A1X4 maintain ground test stations, support equipment, and maintenance records. They operate and maintain surveillance radar and interrogator system support equipment.

Entrants into the AFSC 2A1X4 career ladder must attend an initial skills course (E3AQR30020-010, Common Electronic Training Program (CETP)) at Keesler AFB MS. This course lasts 9 weeks and provides "hands-on" training and knowledge required by the AFSC 2A1X4 STS. Upon successful completion of the initial skills course, one of two equipment and knowledge specific follow-on courses is also required for upgrade to the 3-skill level. Both of these courses are conducted at Keesler AFB, one for the E-3 (E3ABR2A134 000, Apprentice Airborne Surveillance Radar Specialty) and one for the E-8 (E3ABR2A134 100/E3AZR2A154 000, Apprentice Airborne Surveillance Radar Specialty). Common areas are covered in both follow-on courses.

Entry into this career field currently requires an Armed Services Vocational Aptitude Battery score of 67 in electronics and a strength factor of "G" (weight lift of 40 lbs).

SURVEY METHODOLOGY

Inventory Development

The data collection instrument for this occupational survey was USAF Job Inventory (JI) OSSN 2304, dated September 1997. 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 16 subject-matter experts (SME) at the technical training location and at the following locations:

BASE	UNIT VISITED
Keesler AFB MS	336 TRS/TTKN
Robins AFB GA	12 ACCS/MAOM
Tinker AFB OK	552 CRS/LGMVR

The resulting JI contains a comprehensive listing of 682 tasks grouped under 17 duty headings, and a background section requesting such information as grade, major command (MAJCOM) assigned, organizational level, job title, functional area, job satisfaction, equipment maintained, and forms used in present job.

Survey Administration

From August 1997 through February 1998, Survey Control Monitors at base training units worldwide administered the inventory to all eligible DAFSC 2A1X4 personnel. Members eligible for the survey consisted of the total assigned 3-, 5-, and 7-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. 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.

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

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 AFSC 2A1X4 personnel as of September 1997. The 150 respondents in the final sample represent 63 percent of the total assigned personnel and 64 percent of the total personnel surveyed. Table 2 reflects the paygrade distribution for these AFSC 2A1X4 personnel. The survey sample is considered to be a satisfactory representation of the overall career ladder population.

TABLE 1

COMMAND DISTRIBUTION OF 2A1X4 PERSONNEL

COMMAND	PERCENT OF ASSIGNED*	PERCENT OF SAMPLE
ACC	76	82
AETC	10	11
PACAF	10	5
EUR	3	1
AIA	1	1

TOTAL ASSIGNED* = 237
TOTAL SURVEYED** = 234
TOTAL IN SURVEY SAMPLE = 150
PERCENT OF ASSIGNED IN SAMPLE = 63%
PERCENT OF SURVEYED IN SAMPLE = 64%

* Assigned strength as of September 1997
** Excludes personnel in PCS, student, or hospital status, or less than 6 weeks on the job

TABLE 2

PAYGRADE DISTRIBUTION OF SURVEY SAMPLE

GRADE	PERCENT OF ASSIGNED*	PERCENT OF SAMPLE
E-1 - E-3	16	18
E-4	30	27
E-5	28	28
E-6	14	13
E-7, E-8	11	13

* Assigned strength as of September 1997

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

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 2A1X4 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.

Training Emphasis (TE): TE is a rating of the amount of emphasis that should be placed on tasks in entry-level training. The 28 senior AFSC 2A1X4 NCOs who completed TE booklets were asked to select tasks they felt required some sort of structured training for entry-level personnel, and then indicate how much training emphasis these tasks should receive, from 1 (extremely low emphasis) to 9 (extremely high emphasis). Structured training is defined as training provided 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 28 raters was acceptable. The average TE rating was 2.4, with a standard deviation of 1.79. Any task with a TE rating of 4.19 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 35 senior NCOs who completed TD booklets were asked to rate the difficulty of each task using a 9-point scale (extremely low to extremely high). Interrater reliability was acceptable. Ratings were standardized so tasks have an average difficulty of 5.00 and a standard deviation of 1.00. Any task with a TD rating of 6.00 or above is considered to be difficult to learn.

When used in conjunction with the primary criterion of percent members performing, 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 Airborne Surveillance Radar Systems 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 fundamental 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. When two or more jobs have a substantial degree of similarity in tasks performed and time spent on tasks, they are grouped together and defined as a *Cluster*. The structure of the career ladder is then defined in terms of *Jobs* and *Clusters*.

Overview of Specialty Jobs

The analysis procedure described above identified four jobs and two clusters within the survey sample. The division of jobs performed by AFSC 2A1X4 personnel is illustrated in Figure 1, and a listing of those jobs is provided below. The 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. ISO-PHASE INSPECTOR JOB (ST041, N=4)

II. AWACS TECHNICIAN CLUSTER (ST013, N=88)

III. JSTARS TECHNICIAN JOB (ST020, N=18)

IV. MAINTENANCE SUPPORT JOB (ST015, N=3)

V. MANAGEMENT/SUPERVISOR CLUSTER (ST010, N=27)

VI. FORMAL TRAINING INSTRUCTOR JOB (ST047, N=3)

The respondents forming these jobs account for 96 percent of the survey sample. The remaining 4 percent were performing tasks or series of tasks that did not allow them to group with any of the defined jobs. Examples of job titles given by these ungrouped respondents included QA Evaluator and CDC Writer, as well as technicians who perform very few tasks.

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.

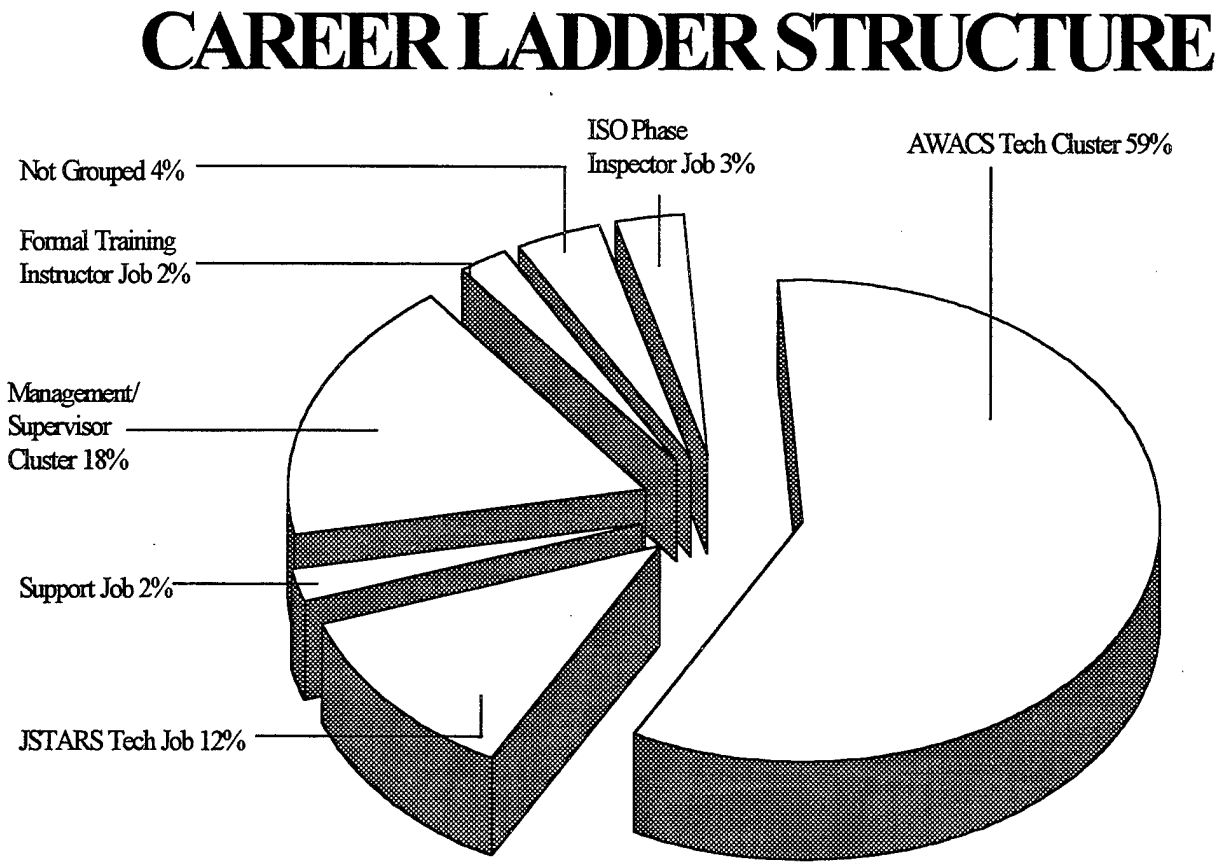

FIGURE 1

I. ISO-PHASE INSPECTOR JOB (ST041)

Number of members - 4
Percent of total sample - 3%
Average number of tasks performed - 53
Average time in career field - 8 years
Average TAFMS - 8 years
Predominant DAFSC - 2A154
Predominant paygrades - E-4/5

The four members identified within this job perform phased inspections in accordance with the isochronal inspection concept. Respondents identified that work in the phase dock can be found at Tinker AFB at 552 EMS. Most of their time is spent performing general radar maintenance activities, Core Automated Maintenance activities, cross utilization training activities, and maintaining the lower compartment and antenna pedestal for the E-3 (AWACS) (see Table 3). Typical tasks performed by these members include:

- perform phase inspections
- remove or replace common hardware
- perform corrosion control on surveillance radars
- clean surveillance radars
- clean strut cables
- perform CAMS inquiries for uncompleted maintenance event listings
- verify aircraft is safe for maintenance
- inspect equipment shock mounts

Although isochronal maintenance is performed on JSTARS equipment, it is not being performed on JSTARS Radar equipment. The main distinction here is that while isochronal maintenance is a job for AWACS Radar personnel, it is not for JSTARS Radar personnel.

II. AWACS TECHNICIAN CLUSTER (ST013)

Number of members - 88
Percent of total sample - 59%
Average number of tasks performed - 325
Average time in career field - 4.4 years
Average TAFMS - 7.3 years
Predominant DAFSC - 2A154
Predominant paygrades - E-3/4/5

The 88 members that were identified as AWACS Technicians are mainly located at Tinker AFB (552 CRS) and comprise the core work in the career ladder. They spend most of their time maintaining equipment for the crew compartment, lower compartment, and antenna pedestal for the E-3 aircraft. They also perform scheduled maintenance on AWACS surveillance radar and interrogator systems, which may entail manual or mechanical fault isolation. Once identified, technicians may remove, repair, and replace these components.

General radar maintenance activities may include:

- trace signals through circuits using schematics or wiring diagrams
- interpret block or schematic diagrams of surveillance radar functional groups
- troubleshoot wiring, coaxial cables, or triaxial cables

Maintenance of the **mission crew compartment** may include tasks such as:

- mask continuously monitored parameters (CMPs)
- inhibit or enable automatic test sequences on surveillance radars
- monitor memory locations displayed on RCMPs

Maintenance of **lower compartment equipment** may include:

- remove or replace SF-6 bottles
- connect or disconnect SF-6 ground carts

In addition to the core job identified, there are also members within this cluster who are **Field Training Detachment Instructors**. All of these instructors are located at Tinker AFB and perform about 190 tasks, to include:

- conduct formal course classroom training
- evaluate progress of trainees
- personalize lesson plans
- administer or score tests
- write test questions

III. JSTARS TECHNICIAN JOB (ST020)

Number of members - 18
Percent of total sample - 12%
Average number of tasks performed - 174
Average time in career field - 3.8 years
Average TAFMS - 6 years
Predominant DAFSC - 2A154
Predominant paygrades - E-3/4/5

The 18 members that were identified as JSTARS Technicians spend most of their time at Robins AFB GA (12 ACCS). Main duties involve maintaining equipment for the crew compartment, lower compartment, and antenna pedestal for the E-8 aircraft. Most of their time (39 percent) is spent working with the **mission crew compartment** to include such tasks as:

- initializing and shutting down operation and control subsystems
- initializing and shutting down prime mission equipment
- initializing and shutting down radar subsystems
- reconfiguring various subsystems using software
- interpreting various diagnostics
- fault isolate PSPs

Lower compartment maintenance may include:

- fault isolate exciters
- fault isolate high power combiners
- fault isolate signal pre-processors

Antenna pedestal maintenance may include:

- removing or replacing antenna down converter
- fault isolate antenna down converters

IV. MAINTENANCE SUPPORT JOB (ST015)

Number of members - 3
Percent of total sample - 2%
Average number of tasks performed - 27
Average time in career field - 4.4 years
Average TAFMS - 10.4 years
Predominant DAFSC - 2A154
Predominant paygrades - E-4/5

The three members in this specialty job are either an E-4 or an E-5 and spend more time than any other job group performing supply and equipment activities (36 percent). They are responsible for maintaining and storing equipment, tools and supplies. As well, they also perform some administrative functions. On average, they responded to only 27 tasks which include:

- inventory equipment, tools, parts, or supplies
- maintain technical order libraries
- evaluate serviceability of equipment, tools, parts, or supplies
- store equipment, tools, parts, or supplies
- issues or log turn-ins of equipment

V. MANAGEMENT/SUPERVISOR CLUSTER (ST010)

Number of members - 27
Percent of total sample - 18%
Average number of tasks performed - 75
Average time in career field - 11.2 years
Average TAFMS - 17.3 years
Predominant DAFSC - 2A174
Predominant paygrades - E-6/7

The 27 members of this cluster are all managers and supervisors. They reported spending 56 percent of their time in traditional management and supervisory activities, to include interpreting policy, planning and attending meetings, general evaluating, and schedule development. An additional 12 percent of their time is spent on training duties, and an equivalent amount of their time is spent with general administrative and TO system activities (see Table 3). A sampling of tasks performed by this group includes:

- interpret policies, directives, or procedures for subordinates
- develop or establish work schedules
- determine or establish work assignments or priorities
- evaluate workload requirements
- direct training functions
- direct administrative functions

Members within this cluster can be distinguished into two main types of jobs - **line management and supervision, and general staff management**. Activities performed and job titles are what mainly provide for the distinction.

Line managers and supervisors are typically E-7s and E-8s, hold job positions such as Superintendent, Flight Chief, and Section Chief and perform specific tasks, in addition to the above, such as:

- supervise military personnel
- determine or establish logistics requirements, such as personnel, equipment, tools, parts, supplies or workspace
- determine or establish work assignments or priorities

General staff managers are typically E-5s and E-6s, hold job positions such as QA Product Improvement, Wing Logistics Requirements, Radar Equipment Manager, Resource Advisor, and Wing TODO and perform specific tasks, in addition to the above, such as:

- compile data for records, reports, logs, or trend analysis
- maintain TCTOs

VI. FORMAL TRAINING INSTRUCTOR JOB (ST047)

Number of members - 3
Percent of total sample - 2%
Average number of tasks performed - 24
Average time in career field - 8.5 years
Average TAFMS - 11 years
Predominant DAFSC - 2A154
Predominant paygrades - E-4, E-6

The 3 members identified as Formal Training Instructors spend 74 percent of their time in training activities, 10 percent of their time performing general administrative and TO system activities and 9 percent of their time performing management and supervisory activities (see Table 3). All of these members are located at Keesler AFB (336 TRS) and typically perform tasks such as:

- conduct formal classroom training
- personalize lesson plans
- develop formal course curricula, plans of instruction, or specialty training standards
- develop training materials or aids
- evaluate progress of trainees
- inspect training materials or aids for operation or suitability
- develop performance tests
- maintain training records or files

TABLE 3

RELATIVE PERCENT TIME SPENT ON DUTY BY SPECIALTY JOB

DUTIES		ISO PHASE INSPECTOR JOB	AWACS RADAR TECH CLUSTER	JSTARS RADAR TECH JOB	MAINT SUPPORT JOB	MGMT SPVSR CLUSTER	FORMAL TRAINING INSTRUCTOR JOB
A	Performing General Radar Maintenance Activities	35	13	14	4	2	2
B	Maintaining Special Test Equipment	-	1	*	-	-	-
C	Performing In-Shop Activities	*	11	*	-	-	-
D	Maintaining E-3 Mission Crew Compartment Equipment	1	21	3	-	*	-
E	Maintaining E-3 Lower Compartment Equipment	10	20	*	-	*	-
F	Maintaining E-3 Antenna Pedestal Equipment	7	9	*	*	-	-
G	Maintaining E-8 Mission Crew Compartment Equipment	-	1	39	-	*	-
H	Maintaining E-8 Lower Compartment Equipment	-	*	8	-	-	-
I	Maintaining E-8 Antenna Pedestal Equipment	-	*	10	-	-	-
J	Maintaining Identification Friend Or Foe Equipment	-	6	-	-	*	-
K	Performing Core Automated Maintenance System (CAMS) Activities	27	6	10	5	8	-
L	Performing Cross Utilization Training (CUT) Activities	10	2	3	-	*	-
M	Performing Management And Supervisory Activities	5	4	5	27	56	9
N	Performing Training Activities	1	2	2	*	12	74
O	Performing General Administrative and Technical Order System Activities	*	1	1	26	12	10
P	Performing General Supply And Equipment Activities	1	1	2	36	4	3
Q	Performing Mobility And Contingency Activities	2	1	1	2	5	1

* Indicates less than 1 percent

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

TABLE 4

SELECTED BACKGROUND DATA FOR 2A1X4 CAREER LADDER JOBS

DUTIES	ISO PHASE INSPECTOR JOB	AWACS RADAR TECH CLUSTER	JSTARS RADAR TECH JOB	MAINT SUPPORT JOB	MGMT SPVSR CLUSTER	FORMAL TRAINING INSTRUCTOR JOB
NUMBER IN GROUP	4	88	18	3	27	3
PERCENT OF TOTAL SAMPLE	3%	59%	12%	2%	18%	2%
PREDOMINANT PAYGRADES	E-4/5	E-3/4/5	E-3/4/5	E-4/5	E-6/7	E-4, E-6
AVERAGE MONTHS IN CAREER FIELD	94	53	46	53	135	102
PERCENT IN FIRST ENLISTMENT	25%	40%	44%	0%	0%	0%
PERCENT SUPERVISING	25%	36%	33%	0%	85%	33%
AVERAGE NUMBER TASKS PERFORMED	52	325	174	27	75	24
DAFSC DISTRIBUTION						
- 2A134	0%	31%	11%	0%	0%	0%
- 2A154	100%	59%	83%	100%	7%	67%
- 2A174	0%	10%	6%	0%	93%	33%

Comparison of Specialty Jobs to Previous Survey

The 1994 occupational survey for AFSCs 1A5X3/2A1X4 also yielded four identifiable jobs and two clusters, to include the In-Flight Maintenance Job, On/Off Equipment Maintenance Cluster, Back Shop Maintenance Job, Technical Training School Job, Field Training Detachment Job, and Management Cluster. In-Flight Maintenance is not performed by AFSC 2A1X4 personnel, and On/Off Equipment Maintenance has been broken down to identify AWACS Technicians and JSTARS Technicians. Table 5 compares the percent of sample that fall into each specialty job from the 1994 survey and the current survey. Overall, the 2A1X4 AFSC has been relatively stable over the last 4 years, with the exception of the addition of JSTARS.

TABLE 5

SPECIALTY JOBS COMPARISON BETWEEN CURRENT AND 1994 SURVEYS

CURRENT SURVEY (N=150)	1994 SURVEY (N=242)
ISO PHASE INSPECTOR JOB	*NO SIMILAR JOB IDENTIFIED*
AWACS TECHNICIAN CLUSTER	ON/OFF EQUIP MAINTENANCE CLUSTER
JSTARS TECHNICIAN JOB	*NO SIMILAR JOB IDENTIFIED*
MAINTENANCE SUPPORT JOB	*NO SIMILAR JOB IDENTIFIED*
MANAGER/SUPERVISOR CLUSTER	MANAGEMENT CLUSTER
FORMAL TRAINING INSTRUCTOR JOB	TECHNICAL TRAINING SCHOOL JOB

Summary

Four jobs and two clusters were identified which accounted for 96 percent of the survey sample. All six jobs are distinct from each other and main differences can be found from those working on equipment (AWACS Technician Cluster and JSTARS Technician Job), those who are training (Formal Training Job, to include AWACS FTD Instructors at Tinker AFB), and those who manage and supervise at various levels. Compared to the previous survey, there are distinct changes with the addition of JSTARS to the career ladder.

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 *Airman Classification* and the Career Field Education and Training Plan, 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, while Table 7 offers another perspective by displaying the relative percent time spent on each duty across the skill-level groups. A typical pattern of progression is noted within the AFSC 2A1X4 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 the maintenance of Airborne Surveillance Radar Systems. As incumbents move up to the 7-skill level, higher percentages work in the supervisory jobs, but many personnel still spend some time maintaining Airborne Surveillance Radar Systems.

Skill-Level Descriptions

DAFSC 2A134. Representing 19 percent of the survey sample, these 29 airmen perform an average of 255 tasks. Ninety-three percent of these airmen work in the AWACS Radar Technician Cluster (see Table 6). Additionally, 7 percent of these members are working as JSTARS Radar Technicians.

Representative tasks performed by 3-skill level incumbents are listed in Table 8. Most tasks are general radar maintenance tasks and relate to Duty A (Performing General Radar Maintenance Activities), Duty D (Maintain E-3 Mission Crew Compartment Equipment), and Duty E (Maintain E-3 Lower Compartment Equipment).

DAFSC 2A154. Representing 55 percent of the survey sample (largest DAFSC group of the survey), these airmen perform an average of 226 tasks (slightly lower than 3-skill level members). Sixty-three percent work in the AWACS Radar Technician Cluster and 18 percent work in the JSTARS Radar Technician Cluster (see Table 6).

The main difference between 3- and 5-skill level members is that most (93 percent) 3-skill level members are AWACS Radar Technicians, whereas 5-skill level members are more evenly distributed among jobs. Table 9 lists representative tasks performed by all 5-skill level personnel. Table 10 reflects those tasks which best differentiate 5-skill level personnel from their 3-skill level counterparts. The top portion of the table distinguishes tasks that 3-skill level members perform at a higher rate than 5-skill level members (this difference is expressed in a positive number). The bottom portion of this table shows those tasks that 5-skill level members perform at a higher rate

than 3-skill level members (this difference is expressed in a negative number). From these data, it is observed that 3-skill level members perform more technical tasks, whereas 5-skill level members perform more management, supervisory, and training tasks.

DAFSC 2A174. These 38 7-skill level personnel represent 25 percent of the survey sample and perform an average of 134 tasks. Unlike their junior counterparts at the 3- and 5-skill levels, two-thirds of these personnel are working in the Management/Supervisor Job. However, 24 percent of the 7-skill level personnel are still working in the AWACS Radar Technician Cluster and 3 percent are working in the JSTARS Radar Technician Job (see Table 6).

Table 11 lists the most time consuming tasks performed by these airmen. Most of these involve management and supervisory functions. Table 10 shows those tasks which best differentiate the 5- and 7-skill levels. As expected, the key difference is a much greater emphasis on management and supervisory functions at the 7-skill level.

Summary

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-skill level. An emphasis is clearly seen in performing primarily the core job of Airborne Surveillance Radar Maintenance at the 3- and 5-skill levels, with some broadening into supervisory functions at the 5-skill level. Members at the 7-skill level shift to supervisory jobs, but some job time is still spent in the technical arena, especially with AWACS.

TABLE 6

DISTRIBUTION OF DAFSC GROUP MEMBERS ACROSS SPECIALTY JOBS
(PERCENT RESPONDING)

SPECIALTY JOBS	DAFSC 2A134 (N=29)	DAFSC 2A154 (N=83)	DAFSC 2A174 (N=38)
I. ISO PHASE INSPECTOR JOB	-	5	-
II. AWACS RADAR TECHNICIAN CLUSTER	93	63	24
III. JSTARS RADAR TECHNICIAN JOB	7	18	3
IV. RADAR MAINTENANCE SUPPORT JOB	-	4	-
V. MANAGEMENT/SUPERVISOR CLUSTER	-	2	66
VI. FORMAL TRAINING INSTRUCTOR	-	2	3
NOT GROUPED	-	6	4

- Indicates no members

TABLE 7

RELATIVE TIME SPENT ON DUTIES BY DAFSC GROUPS

	DUTIES	DAFSC 2A134 (N=29)	DAFSC 2A154 (N=83)	DAFSC 2A174 (N=38)
A	Performing General Radar Maintenance Activities	14	14	5
B	Maintaining Special Test Equipment	1	1	*
C	Performing In-Shop Activities	12	7	3
D	Maintaining E-3 Mission Crew Compartment Equipment	20	13	5
E	Maintaining E-3 Lower Compartment Equipment	19	13	4
F	Maintaining E-3 Antenna Pedestal Equipment	9	6	2
G	Maintaining E-8 Mission Crew Compartment Equipment	4	7	1
H	Maintaining E-8 Lower Compartment Equipment	1	2	*
I	Maintaining E-8 Antenna Pedestal Equipment	1	2	*
J	Maintaining Identification Friend Or Foe Equipment	7	4	1
K	Performing Core Automated Maintenance System (CAMS) Activities	7	8	7
L	Performing Cross Utilization Training (CUT) Activities	2	2	*
M	Performing Management And Supervisory Activities	1	8	43
N	Performing Training Activities	*	4	14
O	Performing General Administrative and Technical Order (TO) System Activities	1	3	8
P	Performing General Supply And Equipment Activities	1	3	3
Q	Performing Mobility And Contingency Activities	*	1	4

* Indicates less than .5 percent

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

TABLE 8

REPRESENTATIVE TASKS
PERFORMED BY 3-SKILL LEVELS

TASKS		PERCENT MEMBERS PERFORMING (N=29)
K446	Access core automated maintenance system (CAMS) menus and data screens	97
K458	Open or close CAMS	97
A1	Apply aircraft cooling	97
A2	Apply aircraft power	97
A16	Perform preflight for surveillance radars	93
K456	Generate printed reports from CAMS	93
A45	Service waveguide pressurization systems	93
E260	Remove or replace SF-6 bottles	90
A6	Compare test results with technical orders (TOs)	90
J423	Perform IFF system turn-on or turn-off procedures	90
K454	Clear or close-out completed surveillance radar, interrogator equipment, or support equipment maintenance discrepancies in CAMS	90
J427	Perform operational IFF checkout procedures	90
A48	Troubleshoot wiring, coaxial cables, or triaxial cables	90
A13	Operate powered aerospace ground equipment (AGE), such as power units or liquid cooling system (LCS) carts	90
A43	Service SF-6 gas bottles	86
D167	Manually control surveillance radar parameters using keyboard actions	86
E202	Connect or disconnect SF-6 ground carts	86
A47	Trace signals through circuits using schematics or wiring diagrams	86
D156	Fault isolate STALOs manually	86
D171	Monitor automatic reconfigurations of surveillance radars	86
D169	Mask continuously monitored parameters (CMPs)	86
A50	Visually isolate malfunctions	86
D140	Fault isolate analog receivers using built-in tests/fault isolation tests (BIT/FIT)	86
D157	Fault isolate surveillance radar systems using BIT/FIT	86
A24	Remove or replace circuit card assemblies within surveillance radars, other than radar data correlators (RDCs)	86
A46	Set up flightline maintenance stands	86
A11	Interpret block or schematic diagrams of surveillance radar functional groups	86
D162	Inhibit or enable automatic test sequences on surveillance radars	86
L479	Wash aircraft	86
J426	Perform manual trouble analysis of IFF E-17 cabinet equipment	86
J438	Remove or replace radar RT assemblies	86
J425	Perform manual trouble analysis of IFF antenna equipment steering error faults	86

TABLE 9

REPRESENTATIVE TASKS
PERFORMED BY 5-SKILL LEVELS

TASKS		PERCENT MEMBERS PERFORMING (N=83)
K458	Open or close CAMS	86
A11	Interpret block or schematic diagrams of surveillance radar functional groups	86
K446	Access core automated maintenance system (CAMS) menus and data screens	83
A47	Trace signals through circuits using schematics or wiring diagrams	82
A9	Inspect card slots	82
A2	Apply aircraft power	82
K454	Clear or close-out completed surveillance radar, interrogator equipment, or support equipment maintenance discrepancies in CAMS	81
A50	Visually isolate malfunctions	81
A1	Apply aircraft cooling	81
A49	Verify aircraft is safe for maintenance	80
A6	Compare test results with technical orders (TOs)	80
A13	Operate powered aerospace ground equipment (AGE), such as power units or liquid cooling system (LCS) carts	80
A48	Troubleshoot wiring, coaxial cables, or triaxial cables	78
A24	Remove or replace circuit card assemblies within surveillance radars, other than radar data correlators (RDCs)	78
A38	Repair system wiring, coaxial cables, or triaxial cables	78
K459	Perform CAMS inquiries for scheduled surveillance radar or interrogator equipment maintenance discrepancies	76
A40	Safety wire surveillance radars or interrogator equipment	76
K452	Change CAMS workcenter narratives	76
K461	Perform CAMS inquiries for uncompleted maintenance	75
A25	Remove or replace common hardware, such as fuse holders, knobs, or faceplates	75
K455	Defer surveillance radar or interrogator equipment maintenance discrepancies in CAMS	75
K453	Change workcenter event record data	75
P622	Inventory equipment, tools, parts, or supplies	73
A7	Connect or disconnect track assemblies or monorail trolleys	73
A45	Service waveguide pressurization systems	72
K465	Schedule surveillance radar or interrogator equipment maintenance discrepancies in CAMS	71
K447	Analyze CAMS data	71
A46	Set up flightline maintenance stands	71
K450	Change CAMS printer paper	71
A3	Clean facilities	70

TABLE 10

TASKS WHICH BEST DIFFERENTIATE BETWEEN
ACTIVE DUTY DAFSC 2A134 AND 2A154 PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS		DAFSC 2A134 (N=29)	DAFSC 2A154 (N=83)	DIFF
J427	Perform operational IFF checkout procedures	90	52	38
J423	Perform IFF system turn-on or turn-off procedures	90	52	38
E267	Remove or replace strut waveguides	76	40	36
J426	Perform manual trouble analysis of IFF E-17 cabinet equipment	86	51	35
J438	Remove or replace radar RT assemblies	86	51	35
L479	Wash aircraft	86	52	34
A43	Service SF-6 bottles	86	52	34
E260	Remove or replace SF-6 bottles	89	55	34
E200	Adjust or align TAC gain compressions	86	53	33
J424	Perform manual trouble analysis of IFF antenna equipment RF faults	86	53	33
J425	Perform manual trouble analysis of IFF antenna equipment steering error faults	86	53	33
N563	Conduct OJT	7	48	-41
M491	Counsel subordinates concerning personal matters	0	41	-41
M576	Evaluate progress of trainees	3	43	-40
N565	Counsel trainees on training progress	3	41	-38
M534	Inspect personnel for compliance with military standards	3	40	-37
A15	Perform phase inspections	7	42	-35
M551	Supervise military personnel	0	35	-35
M487	Conduct supervisory performance feedback sessions	0	35	-35
M489	Conduct supervisory orientations for newly assigned personnel	0	34	-34
M488	Conduct safety inspections of equipment or facilities	10	43	-33
M554	Write performance reports or supervisory appraisals	0	33	-33

TABLE 11

REPRESENTATIVE TASKS
PERFORMED BY 7-SKILL LEVELS

TASKS		PERCENT MEMBERS PERFORMING (N=38)
M551	Supervise military personnel	87
M554	Write performance reports or supervisory appraisals	79
M501	Develop or establish work schedules	79
M487	Conduct supervisory performance feedback sessions	79
M538	Participate in general meetings, such as staff meetings, briefings, conferences, or workshops, other than conducting	76
N566	Determine training requirements	76
M534	Inspect personnel for compliance with military standards	76
M556	Write recommendations for awards or decorations	76
M491	Counsel subordinates concerning personal matters	76
M522	Evaluate personnel for compliance with performance standards	74
M495	Determine or establish work assignments or priorities	74
M535	Interpret policies, directives, or procedures for subordinates	71
M484	Conduct general meetings, such as staff meetings, briefings, conferences, or workshops	68
M489	Conduct supervisory orientations for newly assigned personnel	68
M520	Evaluate logistics requirements, such as personnel, equipment, tools, parts, supplies, or workspace	66
M512	Establish performance standards for subordinates	66
M519	Evaluate job-related suggestions	66
M500	Develop or establish work methods or procedures	66
M503	Direct training functions	63
M526	Evaluate workload requirements	63
M493	Determine or establish logistics requirements, such as personnel, equipment, tools, parts, supplies, or workspace	63
M525	Evaluate work schedules	63
M547	Schedule personnel for temporary duty (TDY) assignments, leaves, or passes	63
N576	Evaluate progress of trainees	61
M549	Schedule work assignments or priorities	61
M523	Evaluate personnel for promotion, demotion, reclassification, or special awards	61
N565	Counsel trainees on training progress	61
M488	Conduct safety inspections of equipment or facilities	61
N578	Maintain training records or files	58
M481	Assign personnel to work areas or duty positions	58
M485	Conduct self-inspections or self-assessments	58
M533	Initiate actions required due to substandard performance of personnel	58

TABLE 12

TASKS WHICH BEST DIFFERENTIATE BETWEEN
ACTIVE DUTY DAFSC 2A154 AND 2A174 PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS		DAFSC 2A154 (N=83)	DAFSC 2A174 (N=38)	DIFF
A38	Repair system wiring, coaxial cables, or triaxial cables	78	24	54
A9	Inspect card slots	82	29	53
A2	Apply aircraft power	82	29	53
A48	Troubleshoot wiring, coaxial cables, or triaxial cables	81	29	52
K454	Clear or close-out completed surveillance radar, interrogator equipment, or support equip	81	29	52
A13	Operate powered aerospace ground equip, such as power units or liquid cooling system carts	80	29	51
A7	Connect or disconnect track assemblies or monorail trolleys	74	24	50
A40	Safety wire surveillance radars or interrogator equipment	76	26	50
A24	Remove or replace circuit card assemblies within surveillance radars, other than RDCs	78	29	49
A50	Visually isolate malfunctions	81	32	49
K455	Defer surveillance radar or interrogator equipment maintenance discrepancies in CAMS	75	26	49
M519	Evaluate job-related suggestions	10	66	-56
M520	Evaluate logistics requirements, such as personnel, equipment, tools, parts, or supplies	10	66	-56
N566	Determine training requirements	24	76	-52
M551	Supervise military personnel	35	86	-51
M496	Develop organizational or functional charts	5	55	-50
M484	Conduct general meetings, such as staff meetings, briefings, conferences, or workshops	18	68	-50
M501	Develop or establish work schedules	29	79	-50
M526	Evaluate workload requirements	13	63	-50
O590	Coordinate requests for TDY orders with appropriate agencies	6	53	-47
M554	Write performance reports or supervisory appraisals	32	79	-47
M493	Determine or establish logistics requirements, such as personnel, equip, tools, or parts	0	33	-33

ANALYSIS OF AFMAN 36-2108 *AIRMAN CLASSIFICATION*

Survey data were compared to the AFMAN 36-2108 *Airman Classification* for Airborne Surveillance Radar Systems, dated 30 April 98. The overall specialty description for the 3-, 5-, and 7-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.

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).

First-Enlistment Personnel

In this study, there are 44 members in their first enlistment (1-48 months TAFMS), representing 29 percent of the total survey sample. Most of their duty time is spent on technical activities involving the maintenance of airborne radar systems and equipment. Table 13 displays the relative percent of time spent on duties by first-enlistment personnel, as well as AWACS and JSTARS first-enlistment personnel. Reviewing the table, it is clearly evident that most first-enlistment personnel, in general, are primarily performing tasks under Duty A (General Radar Maintenance Activities), Duty C (In-Shop Activities), Duty D (Maintain E-3 Mission Crew Compartment Equipment), Duty E (Maintain E-3 Lower Compartment Equipment), and Duty F (Maintain E-3 Antenna Pedestal Equipment). To note, 80 percent of first-term personnel work in the AWACS Technician Cluster (see Figure 2). First-enlistment AWACS Technicians, as expected, perform more time in duties that relate to E-3 equipment. They also spend more of their time on Duty C (In-Shop Activities), and Duty J (Maintain Identification Friend or Foe Equipment) than compared to JSTARS Technicians. JSTARS Technicians, which comprise 18 percent of first-enlistment personnel, spend most of their time in duties that relate to E-8 equipment.

Table 14 lists tasks that are performed by 80 percent or more of first-enlistment personnel. Most commonly performed tasks include: opening or closing CAMS, accessing CAMS menus and data screens, applying aircraft cooling, and applying aircraft power.

Table 15 lists all of the systems or equipment maintained by 60 percent or more of first-enlistment personnel. Two additional columns help indicate equipment being used by either first-enlistment AWACS Technicians or JSTARS Technicians. Most commonly maintained equipment by all first-enlistment personnel include ACE Carts, Monorail Assemblies, and Trielectrons. First enlistment AWACS personnel exclusively use many systems and equipment such as: Flow Meters, Frequency Counters, Ground Carts, and Leak Detectors. First-enlistment JSTARS personnel use a few systems more than their AWACS counterparts, to include: LRU Handling Units, Digital Multimeters, and Nitrogen Carts.

AFSC 2A1X4
FIRST ENLISTMENT JOBS

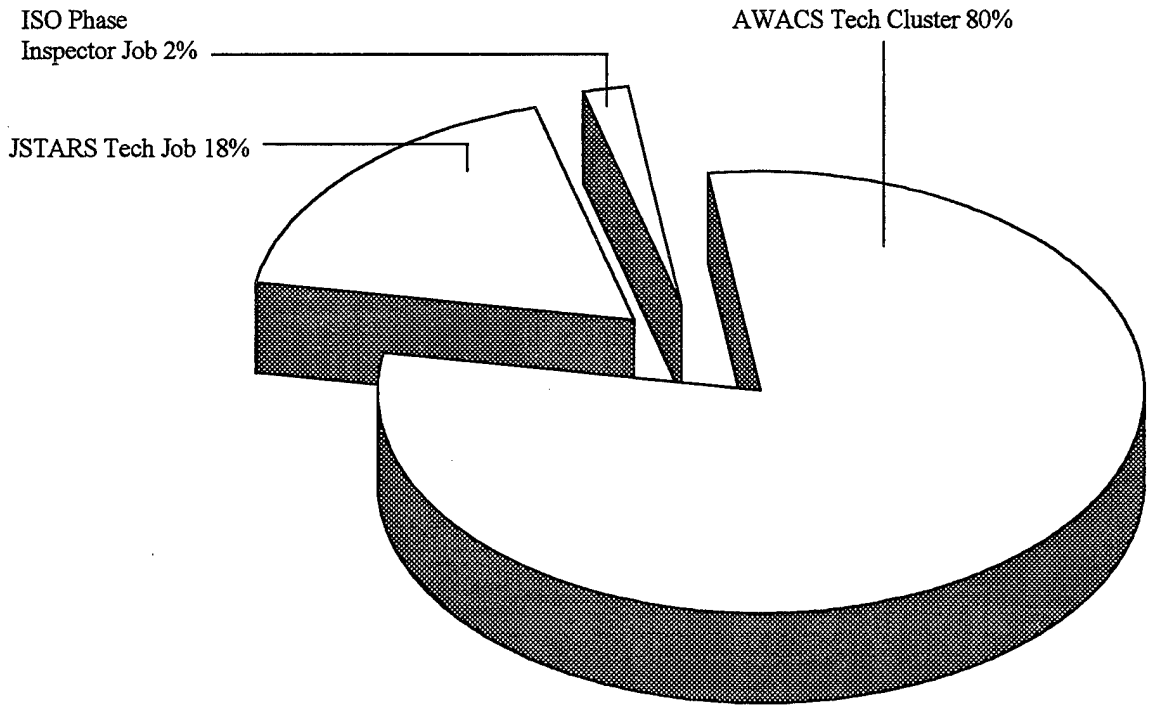

FIGURE 2

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 16 for the top-rated tasks), along with a measure of the difficulty of the JI tasks (see selected high rated tasks presented in Table 17). 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 AETCI 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 13

RELATIVE PERCENT TIME SPENT ON DUTIES BY
FIRST-ENLISTMENT, AWACS, AND JSTARS PERSONNEL

DUTIES		TOTAL 1ST ENL (N=44)	AWACS 1ST ENL (N=35)	JSTARS 1ST ENL (N=8)
A	Performing General Radar Maintenance Activities	15	14	15
B	Maintaining Special Test Equipment	1	1	1
C	Performing In-Shop Activities	10	12	*
D	Maintaining E-3 Mission Crew Compartment Equipment	18	21	4
E	Maintaining E-3 Lower Compartment Equipment	17	21	*
F	Maintaining E-3 Antenna Pedestal Equipment	8	10	*
G	Maintaining E-8 Mission Crew Compartment Equipment	8	1	39
H	Maintaining E-8 Lower Compartment Equipment	2	*	8
I	Maintaining E-8 Antenna Pedestal Equipment	2	1	9
J	Maintaining Identification Friend Or Foe Equipment	6	7	*
K	Performing Core Automated Maintenance System (CAMS) Activities	8	7	11
L	Performing Cross Utilization Training (CUT) Activities	2	2	4
M	Performing Management And Supervisory Activities	1	1	2
N	Performing Training Activities	*	*	1
O	Performing General Administrative and Technical Order (TO) System Activities	1	1	1
P	Performing General Supply And Equipment Activities	1	1	3
Q	Performing Mobility And Contingency Activities	1	*	1

* Indicates less than .5 percent

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

TABLE 14

REPRESENTATIVE TASKS
PERFORMED BY FIRST-ENLISTMENT PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=44)
K458	Open or close CAMS	98
K446	Access core automated maintenance system (CAMS) menus and data screens	98
A1	Apply aircraft cooling	98
A2	Apply aircraft power	98
K456	Generate printed reports from CAMS	93
A16	Perform preflight for surveillance radars	93
K454	Clear or close-out completed surveillance radar, interrogator equipment, or support equipment maintenance discrepancies in CAMS	93
A45	Service waveguide pressurization systems	93
A6	Compare test results with technical orders (TOs)	91
A50	Visually isolate malfunctions	91
A13	Operate powered aerospace ground equipment (AGE), such as power units or liquid cooling system (LCS) carts	91
A48	Troubleshoot wiring, coaxial cables, or triaxial cables	91
K459	Perform CAMS inquiries for scheduled surveillance radar or interrogator equipment maintenance discrepancies	89
A49	Verify aircraft is safe for maintenance	89
A11	Interpret block or schematic diagrams of surveillance radar functional groups	89
A24	Remove or replace circuit card assemblies within surveillance radars, other than radar data correlators (RDCs)	89
K461	Perform CAMS inquiries for uncompleted maintenance event listings	89
A40	Safety wire surveillance radars or interrogator equipment	89
A9	Inspect card slots	89
K447	Analyze CAMS data	86
L479	Wash aircraft	86
K452	Change CAMS workcenter narratives	86
A47	Trace signals through circuits using schematics or wiring diagrams	84
A46	Set up flightline maintenance stands	84
K465	Schedule surveillance radar or interrogator equipment maintenance discrepancies in CAMS	84
K462	Perform CAMS inquiries to monitor delayed discrepancies prior to, during, or after scheduling maintenance	84
K448	Change CAMS errors noted during daily verification process	82
A33	Remove or replace system wiring, coaxial cables, or triaxial cables	82
E260	Remove or replace SF-6 bottles	8
D167	Manually control surveillance radar parameters using keyboard actions	80

TABLE 15

EQUIPMENT USED OR OPERATED
BY FIRST-ENLISTMENT, AWACS, AND JSTARS PERSONNEL
(PERCENT MEMBERS RESPONDING)

EQUIPMENT	TOTAL 1ST ENL (N=44)	AWACS 1ST ENL (N=35)	JSTARS 1ST ENL (N=8)
ACE Carts	95	100	100
Monorail Assemblies	91	91	100
Trielectrons	91	91	100
Electrostatic Discharge Kits (ESDs)	89	94	75
Digital Multimeters	89	89	100
Nitrogen Carts	89	89	100
Time Domain Reflectometers (TDRs)	89	91	88
Multimeters, Simpson Model 260	86	97	50
Monorail and Handling Slings	86	86	100
Oscilloscopes	84	94	50
Liquid Cooling System (LCS) Carts	82	94	38
Milliohmmeters	82	86	75
External Test Converters, Extender Box	80	97	13
FC-77 Servicing Carts	80	97	13
Flow Meters, SF-6	80	97	0
Frequency Counters	80	100	0
Ground Carts, SF-6	80	97	0
Leak Detectors, SF-6	80	100	0
Memory Chips (PROM) Programmers	77	94	13
Power Meters	77	91	25
Spectrum Analyzer	77	80	75
Fast Fourier Transform (FFT) Test Sets	75	94	0
Radar Test Sets, AN/APM-401	75	91	13
Reflectometers	75	83	50
Vacuum Pumps	75	94	0
Voltmeters, Digital	75	89	25
Air Pressure Warning Alarm Systems, SDU-34/E	73	91	0
FC-77 Top-Off Bottles	73	89	0
Antenna Control Drive Test Sets, AN/APM-402	70	86	13
Spectrum Generators	68	80	75
LRU Handling Dollies	66	60	100
Processor Memory Control Units (PMCUs)	66	80	13
Radio Frequency (RF) Units	64	77	13
Digital-to-Analog Convert/Recvr Instrument Boxes	61	74	13
Ion Pump Power Supplies	61	77	0
Rotary Joint Locks	61	77	0

Table 16 presents tasks with the highest TE ratings for AFSC 2A1X4 first-enlistment airmen, while Table 17 displays those tasks AFSC 2A1X4 raters judged to be most difficult to learn how to do. For example, TE raters (refer to Table 16) reported that tasks such as performing emergency radar shutdowns (task D177) require a lot of training emphasis and, from the data, many airmen in their first job and within their first enlistment are performing these tasks. Table 17 shows TD raters reported tasks associated with fault isolation of radar antenna equipment to be some of the most difficult tasks to learn.

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 16

TASKS WITH HIGHEST TRAINING EMPHASIS

TASKS		TASK DIFF**	PERCENT MEMBERS PERFORMING 1ST JOB (N=11)	PERCENT MEMBERS PERFORMING 1ST ENL (N =44)	TNG EMP*
A20	Program or burn programmable read-only memories (PROMs)	5.55	55	77	6.93
D177	Perform radar emergency shutdowns	4.15	55	73	6.79
A11	Interpret block or schematic diagrams of surveillance radar functional groups	6.14	82	89	6.68
A47	Trace signals through circuits using schematics or wiring diagrams	6.19	64	84	6.68
D139	Analyze manual test results on surveillance radars	5.57	64	77	6.61
D167	Manually control surveillance radar parameters using keyboard actions	4.18	82	80	6.54
D178	Perform radar turn-on or turn-off procedures under RCMP control	3.94	73	73	6.46
D160	Fault isolate transmitters using BIT/FIT	5.09	64	75	6.46
D161	Fault isolate transmitters manually	6.89	55	70	6.46
D147	Fault isolate E-3 antenna pedestal equipment using BIT/FIT	5.31	64	73	6.36
D138	Analyze automatic test results on surveillance radars	5.48	64	77	6.25
E223	Perform transmitter harmonizations	5.61	64	70	6.21
D173	Monitor memory locations displayed on RCMPs	3.70	73	73	6.18
E208	Perform cathode voltage harmonizations	5.23	55	70	6.14
E209	Perform collector current harmonizations	5.14	55	68	6.14
A6	Compare test results with technical orders	4.36	82	91	6.07
E216	Perform malfunction analysis using harmonization programs	5.92	45	64	6.07
D155	Fault isolate stable local oscillators (STALOs) using BIT/FIT	4.98	73	77	6.04

* Mean TE Rating is 2.40, and Standard Deviation is 1.79 (High TE = 4.19)

** Average TD Rating is 5.00, and Standard Deviation is 6.00 (High TD = 6.00)

TABLE 17

TASKS WITH HIGHEST TASK DIFFICULTY

TASKS		TASK DIFF**	PERCENT MEMBERS PERFORMING 1ST JOB (N=11)	1ST ENL (N=44)	3-SKL LVL (N=29)	5-SKL LVL (N=83)	7-SKL LVL (N=38)	TNG EMP*
D181	Perform manual fault analysis of RDCs using PMCUs and diagnostic programs	8.05	45	61	66	54	18	3.68
D154	Fault isolate RDCs manually	7.94	45	70	79	57	21	4.93
I396	Fault isolate antenna down converters	7.32	27	20	10	18	3	1.04
D145	Fault isolate DDPs manually	7.11	55	68	76	53	18	5.04
D180	Perform manual fault analysis of DDPs using MDDs and diagnostic programs	7.03	45	59	66	51	18	3.11
E217	Perform noise source diode calibrations manually	6.89	55	68	76	45	11	2.93
D161	Fault isolate transmitters manually	6.89	55	70	72	61	21	6.46
D159	Fault isolate synchronizer manually	6.83	55	70	76	57	18	5.07
I409	Remove or replace antenna radomes	6.80	0	18	7	18	3	.68
D148	Fault isolate E-3 antenna pedestal equipment manually	6.79	64	73	83	57	21	5.79
G356	Perform memory load and verify utilities on radar subsystems	6.77	18	41	28	33	5	1.25
E205	Fault isolate HV systems manually	6.69	73	73	83	57	21	5.93
C115	Repair HV filters	6.68	18	18	21	11	8	1.39
I397	Fault isolate E-8 circulators	6.68	0	7	0	7	3	.86

* Mean TE Rating is 2.40, and Standard Deviation is 1.79 (High TE = 4.19)

** Average TD Rating is 5.00, and Standard Deviation is 1.00 (High TD = 6.00)

Training Documents

To assist specifically in evaluation of the Specialty Training Standard (STS) and the Plan of Instruction (POI), tasks were matched to appropriate sections and subsections of the STS and POI for Courses E3ABR2A134 100, dated 16 March 1998, and E3ABR2A134 000/E3AZR2A154 000, dated 18 August 1997. Listings of the STS and POI were produced displaying the percent members performing, TE and TD ratings for each matched task, and ATI. Criteria set forth in AETCI 36-2601 were used to review the relevance of each STS entry and POI learning objective. Any STS entry with matched tasks performed by more than 20 percent of first-job, first-enlistment, or 5- or 7-skill level members is considered to be supported by the survey data and should be retained in the document. Any POI learning objective with tasks matched performed by at least 30 percent of first-job or first-enlistment members or appropriate related job group is considered supported and should be retained in the document.

Specialty Training Standard (STS)

A comprehensive review of STS 2A1X4, dated June 1997, compared STS items to survey data. Technical school personnel from Keesler AFB MS matched JI tasks to appropriate sections and subsections of the STS.

Typically, STS sections and subsections matched to tasks which have sufficiently high TE and TD ratings and are performed by at least 20 percent of the personnel in appropriate experience or skill-level groups (such as first-enlistment (1-48 TAFMS) and 5- and 7-skill level groups), are considered to be supported and should be considered for inclusion in the STS. Likewise, paragraphs having tasks with less than 20 percent performing across all the criterion groups should be considered for deletion from the STS.

STS paragraphs containing general knowledge information, mandatory entries, subject-matter-knowledge-only requirements, basic supervisory responsibilities or electronic principles covered in the electronic principles inventory were not examined. Task knowledge and performance elements of the STS were compared against the standard set forth in AETCI 36-2601 and AFI 36-2623 (i.e., include tasks performed or knowledge required by 20 percent or more of the personnel in a skill level (criterion group) of the AFSC).

Overall, the STS provides comprehensive coverage of the work performed by personnel in this career ladder. The vast majority of paragraphs were supported, in that tasks matched to the STS paragraphs generally had at least 20 percent of one criterion group performing the matched tasks. However, paragraphs, especially those relating to JSTARS, should be carefully reviewed by SMEs for possible fine-tuning of content and proficiency codes. Many JSTARS paragraphs were supported based on performance of JSTARS technicians and not any other criterion groups that typically provide support--an additional column has been added to Table 18 to indicate this.

Table 18 lists several examples of JSTARS STS paragraphs which should be reviewed by SMEs. These paragraphs do not meet the 20 percent performing criteria, although they are supported through the performance of JSTARS Technicians. These STS elements should be carefully considered to determine whether retention in the STS is warranted or whether they should be assigned a proficiency code. For example, the task associated with paragraph A3.10.2.1.2. has low standard criterion group members performing and no proficiency code associated with it. On the other hand, there are 72 percent of JSTARS Technicians performing the associated task.

Table 19 lists several representative examples of STS paragraphs which need to be reviewed by SMEs because the 3-skill level course proficiency code is not supported by the matched task data. For example, paragraph A3.7.7.1. should be reviewed for reconsideration in assigning a 3-skill level proficiency code instead of a dash, due to the high level of job performance and above average recommended training emphasis. Paragraph A3.9.1.8.2.3. may be more appropriate to assign a performance proficiency training code instead of a knowledge proficiency code due to the high levels of performance along with training emphasis. Lastly, paragraphs like A3.10.2.1.4. have a performance training code assigned even though there are low members performing and low training emphasis indicated. Perhaps this area should be considered for dashing or removal from the STS.

Tasks not matched to any element of the STS are listed at the end of the STS computer listing. These were reviewed to determine if there were any tasks concentrated around any particular functions or jobs -- no trends were recognized. Those technical tasks performed by 20 percent or more respondents of the STS target groups, but which were not referenced to any STS element, are displayed in Table 20. Training personnel and SMEs should consider these unreferenced tasks to determine if inclusion in the STS is justified.

Plan of Instruction (POI)

Inventory tasks were also matched to the POI for Courses E3ABR2A134 100, dated 16 March 1998, and E3ABR2A134 000/E3AZR2A154 000, dated 18 August 1997. A computer product was generated displaying learning objective and percent first-job (1-24 months TAFMS) and first-enlistment (1-48 TAFMS) personnel performing matched tasks, as well as TE and TD ratings. These data were used to review the POI following the guidance of AETCI 36-2601. Learning objectives with matched tasks performed by 30 percent or more members are considered to be supported. Those not supported should be reviewed to determine if they are justified for retention in the basic course.

Table 21 provides examples of Course E3ABR2A134 100 (JSTARS) POI Objectives that were not supported by matched tasks (less than 30 percent performance by members). Additionally, if at least 30 percent of JSTARS Technicians were performing the matched task, then that task was considered to be supportive of the learning objective. For example, learning objective 4a of block 4 has low percentages of first-job and first-enlistment members performing out in the field, although a much higher percentage of JSTARS Technicians were identified as performing this task. Therefore, this matched task would be considered supported. Using this

type of logic, all learning objectives within Course E3ABR2A134 100 were supported, although a thorough review should be made for areas with marginal support to help determine whether items deserve retention in the course.

Table 22 provides examples of tasks that were not matched to the Course E3ABR2A134 100 POI, yet should be considered for inclusion due to the high percentage of personnel performing the matched task. For example, task A6 indicates that over 80 percent of first-job and first-enlistment personnel are performing it, as well as 94 percent of all identified JSTARS Technicians. Should this be taught in the classroom, or is it more appropriate for training on the job? These type of questions should be asked for tasks with high percentages of members performing across the identified categories.

Tables 23 and 24 use the same logic to identify areas with discrepancies for Course E3ABR2A134 000 (AWACS).

Summary

Although both are well supported, the STS and two POIs should be carefully evaluated to identify training discrepancies through the use of the Training Extract. The two big questions that should keep being asked are "if there are so many people performing in a particular area, should it be taught in the classroom, or should it be left to Field Training Instructors?," and "if an area is being taught at a certain level, is it actually being performed at that level in the career ladder?"

TABLE 18

EXAMPLE OF STS ELEMENTS NOT SUPPORTED BY CRITERION GROUP SURVEY DATA*
(LESS THAN 20 PERCENT MEMBERS PERFORMING)

STS ITEM		PERCENT MEMBERS PERFORMING							
		JSTARS JOB	1ST JOB	1ST ENL	DAFSC 2A134	DAFSC 2A154	DAFSC 2A174	TNG EMP**	TSK DIFF***
A3.4.4.6.1.1	Operational Readiness Test								
.	G0343 Interpret diagnostic results on printers	61	0	9	3	16	5	.89	5.60
	G0355 Initiate diagnostics on printers	100	0	5	0	11	3	.82	5.25
A3.9.2.6.	Align Display units								
	G0311 Align display units (DUs)	89	9	16	3	18	3	96	6.01
A3.10.2.1.2.	Prime Mission Equipment Control Panel								
	G0368 Remove or replace PME control panels	72	0	11	0	14	3	.68	4.82
A3.10.2.1.3.	Versatile Media Mass Memory								
	G0375 Remove or replace VM3s	94	18	18	7	17	3	.68	4.92
A3.10.2.1.4.	System Junction Boxes								
	G0372 Remove or replace SM&Cs	89	9	16	3	17	3	.68	4.69
	G0373 Remove or replace STP junction box	78	0	14	0	16	3	.68	5.23
A3.10.2.1.5.	Removable Transportable Memory Module								
	G0374 Remove or replace transportable memory module	89	9	18	3	18	3	.68	4.41

* Support for examples can be found within the JSTARS Technician Job
** Mean TE rating is 2.40, and the Standard Deviation is 1.79 (High TE = 4.19)
*** Mean TD rating is 5.00, and the Standard Deviation is 1.00 (High TD = 6.00)

TABLE 19

EXAMPLE OF STS ELEMENTS THAT CONFLICT WITH ASSIGNED PROFICIENCY CODE

STS ITEM		3-LVL CRSE PROF CODE	PERCENT MEMBERS PERFORMING 1ST JOB	1ST ENL	DAFSC 2A134	TNG EMP*	TSK DIFF**
A3.7.7.1.	Service SF-6 bottle	-					
	A43 Service SF-6 gas bottles		73	75	86	3.57	2.34
A3.9.1.8.2.3.	OBTM&M	@A					
	J426 Perform manual trouble analysis of IFF E-17 cabinet equipment		64	75	86	5.00	5.54
A3.10.2.1.4.	System Junction Boxes	#1b					
	G373 remove or replace STP junction boxes		0	14	0	.68	5.23

* Mean TE rating is 2.40, and the Standard Deviation is 1.79 (High TE = 4.19)

** Mean TD rating is 5.00, and the Standard Deviation is 1.00 (High TD = 6.00)

TABLE 20

EXAMPLES OF TECHNICAL TASKS PERFORMED BY 20 PERCENT OR MORE GROUP MEMBERS AND NOT REFERENCED TO THE STS

TASKS		PERCENT MEMBERS PERFORMING					TNG EMP*	TSK DIFF**
		1ST JOB	1ST ENL	DAFSC 2A134	DAFSC 2A154	DAFSC 2A174		
C109	Operationally check trigger pulse amplifiers	55	64	72	46	18	4.61	5.35
E241	Remove or replace HV power supplies	55	70	79	54	16	4.00	4.79
C94	Operationally check overcurrent monitors	64	68	76	51	18	3.75	4.91
J441	Remove or replace RF power detectors	36	61	66	49	16	3.32	4.33
F299	Remove or replace pressurized reservoirs	45	68	76	46	16	3.25	5.23
D197	Remove or replace switchlight assemblies	36	61	62	58	16	3.18	4.09
J431	Remove or replace IFF analog-to-digital converters	64	71	79	51	16	3.14	4.06
J439	Remove or replace RF band pass filters	36	61	66	49	16	3.07	4.22
J430	Remove or replace 3-dB fixed attenuators	36	57	59	45	18	2.79	4.48
E255	Remove or replace overcurrent sensors	55	64	72	41	13	2.61	4.34
F290	Remove or replace flow meters	45	59	69	43	16	2.25	4.66

* Mean TE rating is 2.40, and the Standard Deviation is 1.79 (High TE = 4.19)

** Mean TD rating is 5.00, and the Standard Deviation is 1.00 (High TD = 6.00

TABLE 21

EXAMPLE OF COURSE E3ABR2A134 100 (JSTARS) POI OBJECTIVE
NOT SUPPORTED BY SURVEY DATA*
(LESS THAN 30 PERCENT MEMBERS PERFORMING)

POI OBJECTIVE		PERCENT MEMBERS PERFORMING				
		JSTARS JOB	1ST JOB	1ST ENL	TNG EMP**	TSK DIFF***
Block 4, 4.a.	Using JSTARS Technical Data, the PME trainer, and the PME mock-up, perform data processing maintenance procedures IAW the checklist					
	G367 Remove or replace PICs	*78	0	14	.68	4.82

* JSTARS Technician Job does lend support
** Mean TE rating is 2.40, and the Standard Deviation is 1.79 (High TE = 4.19)
*** Mean TD rating is 5.00, and the Standard Deviation is 1.00 (High TD = 6.00)

TABLE 22

EXAMPLES OF TECHNICAL TASKS PERFORMED BY 30 PERCENT OR MORE GROUP MEMBERS AND NOT REFERENCED TO POI E3ABR2A134 100 (JSTARS)

TASKS	PERCENT MEMBERS PERFORMING				
	JSTARS JOB	1ST JOB	1ST ENL	TNG EMP *	TSK DIFF**
A6 Compare test results with technical orders (TOs)	94	82	91	6.07	4.36
A19 Perform wire wrap connections	33	45	66	4.71	6.36
A37 Repair multiconductor cables	33	36	66	4.79	6.04
A38 Repair system wiring, coaxial cables, or triaxial cables	78	45	77	4.43	6.03

* Mean TE rating is 2.40, and the Standard Deviation is 1.79 (High TE = 4.19)

** Mean TD rating is 5.00, and the Standard Deviation is 1.00 (High TD = 6.00)

TABLE 23

EXAMPLES OF COURSE E3ABR2A134 000 (AWACS) POI OBJECTIVES
NOT SUPPORTED BY SURVEY DATA
(LESS THAN 30 PERCENT MEMBERS PERFORMING)

POI OBJECTIVE		PERCENT MEMBERS PERFORMING				
		AWACS JOB	1ST JOB	1ST ENL	TNG EMP*	TSK DIFF**
Block 13, 4.a.	Using TOs 00-20-2, 1E-3A-06 and a narrative describing an ON-equipment maintenance task, complete AFTO Forms 350 and 781A IAW the checklist **O588** Compile data for record, reports, logs, or trend analysis	16	0	9	1.21	5.19
Block 13, 4.b.	Using TOs 00-20-2, 1E-3A-06 and a narrative describing an OFF-equipment maintenance task, complete AFTO Forms 350 and 781A IAW the checklist **O588** Compile data for record, reports, logs, or trend analysis	16	0	9	1.21	5.19

* Mean TE rating is 2.40, and the Standard Deviation is 1.79 (High TE = 4.19)
** Mean TD rating is 5.00, and the Standard Deviation is 1.00 (High TD = 6.00)

TABLE 24

EXAMPLES OF TECHNICAL TASKS PERFORMED BY 30 PERCENT OR MORE GROUP MEMBERS AND NOT REFERENCED TO POI E3ABR2A134 000 (AWACS)

TASKS		PERCENT MEMBERS PERFORMING				
		AWACS JOB	1ST JOB	1ST ENL	TNG EMP*	TSK DIFF**
A38	Repair system wiring, coaxial cables, or triaxial cables	78	45	77	4.43	6.03
P622	Inventory equipment, tools, parts, or supplies	73	27	52	3.36	4.01
K447	Analyze CAMS data	71	91	86	4.14	4.61
F275	Perform visual inspections of FC-77 systems	59	64	75	3.71	4.20

* Mean TE rating is 2.40, and the Standard Deviation is 1.79 (High TE = 4.19)

** Mean TD rating is 5.00, and the Standard Deviation is 1.00 (High TD = 6.00)

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 25 presents job satisfaction data for AFSC 2A1X4 TAFMS groups, together with TAFMS data for a comparative sample of Mission Equipment Management career ladders surveyed in 1997. Overall, the majority of the AFSC 2A1X4 survey sample express positive feelings toward their jobs and display higher percentages than the comparative sample in most areas, with the main exception in the area of intention to reenlist. It is noted that AFSC 2A1X4 members have less intention to reenlist in all TAFMS groups than members from the comparative sample.

An indication of how job satisfaction perceptions have changed over time is provided in Table 26, where again TAFMS data for 1997 survey respondents are presented, along with data from respondents in the last OSR from 1994. Reviewing this table, it is apparent that individuals in their first enlistment expressed lower job interest, feel their talents and training are being used more effectively, have become slightly less satisfied with the accomplishment gained from work, and express a lower intention to reenlist than was expressed by respondents in the last OSR.

Individuals in their second enlistment expressed higher job interest, feel their talents and training are being used more effectively, have become slightly more satisfied with accomplishment gained from work, and expressed a lower intention to reenlist than was expressed by respondents in the last OSR.

Individuals with more than 97 months TAFMS expressed higher job interest, feel their talents are being used slightly less effectively, feel their training is being utilized more effectively, have the same sense of accomplishment gained from work, and expressed a lower intention to reenlist than was expressed by respondents in the last OSR.

In Table 27, review of the job satisfaction data for personnel in the specialty jobs identified in this survey reveals that airmen responded very positively to all the indicators listed, except for Maintenance Support Job incumbents who rated low satisfaction across all indicators (note that only three personnel were identified for this job). Once again, it is noted that across all jobs identified, there were low levels of intention to reenlist, although when focusing on the two main groups that perform most of the technical duties (AWACS Radar Technicians and JSTARS Radar Technicians, N=106), their intentions are in line with the comparative sample.

When there are serious problems in a career ladder, survey respondents often respond with write-in comments to complain about perceived problems in the field. Thirty-eight percent of this survey sample used the write-in feature to convey some type of information. Notable trends

included members describing what their duty title was, additional duties, dissatisfaction with the length of the survey, discontent with training within the career field and explanations for dissatisfaction within the career field.

One comment concerned how "more is being done with less" and the long term implications that this will have on the career field. Further, the same write-in comment stated: "*Most people stay in this career field because they're afraid to lose the stability that the military provides. It's not because they are happy. I don't think you could find a more dissatisfied group of people in the military.*" Another comment read "*...qualified 5- and 7-levels are separating from this career field faster than new people can be trained, the experience level is at an all-time low.*" There are other comments along the same line of concern and may provide a bit of insight into why personnel intend to leave. Obviously, these comments are merely perceptions and difficult to quantify.

TABLE 25

COMPARISON OF JOB SATISFACTION INDICATORS BY TAFMS GROUPS
(PERCENT MEMBERS RESPONDING)

	1-48 MOS TAFMS		49-96 TAFMS		97+ MOS TAFMS	
	1997 2A1X4 (N=44)	COMP SAMPLE* (N=3883)	1997 2A1X4 (N=28)	COMP SAMPLE* (N=2651)	1997 2A1X4 (N=78)	COMP SAMPLE* (N=6033)
EXPRESSED JOB INTEREST:						
INTERESTING	73	65	79	65	80	74
SO-SO	16	19	14	20	12	16
DULL	11	16	7	15	8	9
PERCEIVED UTILIZATION OF TALENTS						
FAIRLY WELL TO PERFECT	86	73	93	75	83	83
NOT AT ALL/VERY LITTLE	14	27	7	25	17	17
PERCEIVED UTILIZATION OF TRAINING						
FAIRLY WELL TO PERFECT	95	85	89	82	83	80
NOT AT ALL/VERY LITTLE	5	15	11	18	17	20
SENSE OF ACCOMPLISHMENT GAINED FROM WORK						
SATISFIED	72	64	68	66	71	72
NEUTRAL	14	17	14	15	10	11
DISSATISFIED	14	19	18	19	19	17
RE-ENLISTMENT INTENTIONS						
YES, OR PROBABLY YES	50	52	54	66	55	71
NO, OR PROBABLY NO	50	48	46	34	17	8
WILL RETIRE	0	0	0	1	28	21

* Comparative sample of Mission Equipment Management career ladders surveyed in 1997 (includes AFSCs 2A3X2A/B/C, 2A5X3A/B/C, 2A6X3, 2A6X5, 2A6X6, 2A7X1, 2A7X3, 2E1X1, 2E8X1, 2M0X2, 2W0X1, and 2W2X1)

TABLE 26

COMPARISON OF CURRENT SURVEY AND PREVIOUS SURVEY BY TAFMS GROUPS
(PERCENT MEMBERS RESPONDING)

	1-48 MOS TAFMS		49-96 TAFMS		97+ MOS TAFMS	
	1997 2A1X4 (N=44)	1994 2A1X4 (N=44)	1997 2A1X4 (N=28)	1994 2A1X4 (N=18)	1997 2A1X4 (N=78)	1994 2A1X4 (N=43)
EXPRESSED JOB INTEREST:						
INTERESTING	73	82	79	73	80	75
SO-SO	16	11	14	18	12	12
DULL	11	5	7	9	8	13
PERCEIVED UTILIZATION OF TALENTS						
FAIRLY WELL TO PERFECT	86	80	93	86	83	86
NOT AT ALL/VERY LITTLE	14	20	7	14	17	14
PERCEIVED UTILIZATION OF TRAINING						
FAIRLY WELL TO PERFECT	95	84	89	86	83	77
NOT AT ALL/VERY LITTLE	5	16	11	14	17	21
SENSE OF ACCOMPLISHMENT GAINED FROM WORK						
SATISFIED	72	75	68	64	71	71
NEUTRAL	14	9	14	9	10	11
DISSATISFIED	14	16	18	27	19	18
RE-ENLISTMENT INTENTIONS						
YES, OR PROBABLY YES	50	59	54	59	55	74
NO, OR PROBABLY NO	50	41	46	36	17	7
WILL RETIRE	0	0	0	0	28	19

TABLE 27

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

	ISO-PHASE INSPEC JOB (ST041, N=4)	AWACS TECH CLUSTER (ST013, N=88)	JSTARS TECH JOB (ST020, N=18)	MAINT SUPPORT JOB (ST015, N=3)	MNGMNT/ SUPER CLUSTER (ST010, N=27)	FORMAL TNG INSTR JOB (ST047, N=3)
EXPRESSED JOB INTEREST:						
INTERESTING	75	77	83	33	78	67
SO-SO	25	13	6	67	19	0
DULL	0	10	11	0	4	33
PERCEIVED UTILIZATION OF TALENTS						
FAIRLY WELL TO PERFECT	75	86	83	33	85	100
NOT AT ALL/VERY LITTLE	25	14	17	67	15	0
PERCEIVED UTILIZATION OF TRAINING						
FAIRLY WELL TO PERFECT	50	95	83	33	74	100
NOT AT ALL/VERY LITTLE	50	5	17	67	26	0
SENSE OF ACCOMPLISHMENT GAINED FROM WORK						
SATISFIED	75	70	89	33	67	33
NEUTRAL	0	10	11	33	11	67
DISSATISFIED	25	20	0	33	22	0
RE-ENLISTMENT INTENTIONS						
YES, OR PROBABLY YES	0	60	67	0	37	33
NO, OR PROBABLY NO	75	38	28	67	11	33
WILL RETIRE	25	2	6	33	52	33

IMPLICATIONS

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

Survey results indicate that the present classification structure, as described in the latest specialty description, reflects the jobs performed in this career ladder.

This is the first survey to include career ladder information relevant to JSTARS personnel and the impact that its entry has had on the entire Airborne Radar Surveillance career field. For the most part, the merging of JSTARS with AWACS seems to be working well. Survey information should be reviewed carefully to help improve training documents and provide stability to the career field.

Career ladder training documents appear, on the whole, to be well supported by survey data. Most individuals reported the utilization of training is adequate, thus indicating support for the overall training system. Additionally, the career ladder progression is good, with a noticeable transition from technical work at the 3- and 5-skill levels to supervisory and management work at the 7-skill level. The STS and POI should be reviewed against the Training Extract to resolve areas that lack support. High percent member performance tasks that were not matched to training documents should be reviewed for inclusion.

Job satisfaction by AFSC 2A1X4 personnel have generally increased since the addition of JSTARS. For first-enlistment personnel, a drop in job interest as well as intent to reenlist is noted. All members in AFSC 2A1X4 expressed a lower intent to reenlist when compared to the 1994 OSR, with the most significant drop being with members who have more than 97 months TAFMS.

APPENDIX A

SELECTED REPRESENTATIVE TASKS PERFORMED BY SPECIALTY JOB GROUPS

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TABLE A1

ISO PHASE INSPECTION

TASKS		PERCENT MEMBERS PERFORMING (N=4)
A15	Perform phase inspections	100
A4	Safety wire surveillance radars or interrogator equipment	100
K458	Open or close CAMS	100
A25	Remove or replace common hardware, such as fuse holders, knobs, or faceplates	100
A14	Perform corrosion control on surveillance radars or interrogator equipment	100
A5	Clean surveillance radars or interrogator equipment	100
A4	Clean strut cables	100
L471	Inspect ramp areas for foreign object damage (FOD) matter	100
K461	Perform CAMS inquiries for uncompleted maintenance event listings	100
K454	Clear or close-out completed surveillance radar, interrogator equipment, or support equipment maintenance discrepancies in CAMS	100
E220	Perform SF-6 system static pressure output or system pressure checks	100
K455	Defer surveillance radar or interrogator equipment maintenance discrepancies in CAMS	100
F309	Service antenna pedestal equipment using FC-77 top-off bottles	100
L475	Perform wing walking duties during aircraft towing operations	100
A21	Remove or reinstall aircraft access plates, panels, or flooring	75
K446	Access core automated maintenance system (CAMS) menus and data screens	75
K456	Generate printed reports from CAMS	75
F275	Perform visual inspections of FC-77 systems	75
A49	Verify aircraft is safe for maintenance	75
A10	Inspect equipment shock mounts	75
K459	Perform CAMS inquiries for scheduled surveillance radar or interrogator equipment maintenance discrepancies	75
A9	Inspect card slots	75
K465	Schedule surveillance radar or interrogator equipment maintenance discrepancies in CAMS	75
E202	Connect or disconnect SF-6 ground carts	75
K460	Perform CAMS inquiries for training status, such as ancillary or task training	75

TABLE A2

AWACS RADAR INSPECTION

TASKS		PERCENT MEMBERS PERFORMING (N=88)
A47	Trace signals through circuits using schematics or wiring diagrams	97
A11	Interpret block or schematic diagrams of surveillance radar functional groups	95
A48	Troubleshoot wiring, coaxial cables, or triaxial cables	95
D169	Mask continuously monitored parameters (CMPs)	95
D162	Inhibit or enable automatic test sequences on surveillance radars	95
A1	Apply aircraft cooling	95
D173	Monitor memory locations displayed on RCMPs	94
D178	Perform radar turn-on or turn-off procedures under RCMP control	94
D167	Manually control surveillance radar parameters using keyboard actions	94
D171	Monitor automatic reconfigurations of surveillance radars	94
D170	Monitor antenna pedestal equipment cooling systems	94
A6	Compare test results with technical orders (TOs)	93
A50	Visually isolate malfunctions	93
D157	Fault isolate surveillance radar systems using BIT/FIT	93
A24	Remove or replace circuit card assemblies within surveillance radars, other than radar data correlators (RDCs)	93
D163	Inhibit or enable individual tests on surveillance radars	93
D165	Interpret online RCMP display messages	92
K446	Access core automated maintenance system (CAMS) menus and data screens	92
K458	Open or close CAMS	92
D155	Fault isolate stable local oscillators (STALOs) using BIT/FIT	92
D172	Monitor LCS meters and gauges	92
D185	Recycle radar programs	92
D147	Fault isolate E-3 antenna pedestal equipment using BIT/FIT	91
E260	Remove or replace SF-6 bottles	90
D175	Operate radar programs, including surveillance or airborne operations	90
D156	Fault isolate STALOs manually	90
E202	Connect or disconnect SF-6 ground carts	90
D140	Fault isolate analog receivers using built-in tests/fault isolation tests (BIT/FIT)	90
D148	Fault isolate E-3 antenna pedestal equipment manually	90
K454	Clear or close-out completed surveillance radar, interrogator equipment, or support equipment maintenance discrepancies in CAMS	90
D164	Install or remove SDU-34/E air pressure warning alarm systems	90
D139	Analyze manual test results on surveillance radars	89
D138	Analyze automatic test results on surveillance radars	89
D141	Fault isolate analog receivers manually	89
A43	Service SF-6 gas bottles	85
A44	Service SF-6 ground carts	83

TABLE A3

JSTARS RADAR TECHNICIAN

TASKS		PERCENT MEMBERS PERFORMING (N=18)
G330	Initialize operation and control (O&C) subsystems	100
G332	Initialize radar subsystems	100
G331	Initialize prime mission equipment (PME)	100
G341	Initiate operational readiness tests on O&C subsystems	100
G379	Shutdown radar subsystems	100
G342	Initiate operational readiness tests on radar subsystems	100
G377	Shutdown O&C subsystems	100
G378	Shutdown PME systems	100
G354	Interpret online testing results through system alerts	100
G352	Interpret operational readiness tests for radar subsystems	100
A1	Apply aircraft cooling	100
A49	Verify aircraft is safe for maintenance	100
G358	Reconfigure radar subsystems using system software	100
G357	Reconfigure O&C subsystems using system software	100
G333	Initiate diagnostics on consoles	100
G344	Interpret diagnostic results on consoles	100
G337	Initiate diagnostics on radar control units (RCUs)	100
G336	Initiate diagnostics on PSPs	100
G346	Interpret diagnostic results on PSPs	100
H384	Fault isolate PSPs	100
A2	Apply aircraft power	100
H382	Fault isolate exciters	100
H383	Fault isolate high power combiners (HPCs)	100
H387	Fault isolate signal pre-processors	100
A7	Connect or disconnect track assemblies or monorail trolleys	100
I408	Remove or replace antenna down converters	94
I396	Fault isolate antenna down converters	94
G355	Manipulate TDs	94
G380	Utilize DecTerm monitoring	94
K446	Access core automated maintenance system (CAMS) menus and data screens	94
G351	Interpret operational readiness tests for O&C subsystems	94
K458	Open or close CAMS	94
A24	Remove or replace circuit card assemblies within surveillance radars, other than radar data correlators (RDCs)	94
K454	Clear or close-out completed surveillance radar, interrogator equipment, or support equipment maintenance discrepancies in CAMS	94
G349	Interpret diagnostic results on RSGs	94
G348	Interpret diagnostic results on RSE	94
A50	Visually isolate malfunctions	94
A6	Compare test results with technical orders (TOs)	94
L471	Inspect ramp areas for foreign object damage (FOD) matter	94

TABLE A4

MAINTENANCE SUPPORT PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=3)
P622	Inventory equipment, tools, parts, or supplies	100
O605	Maintain technical order libraries	100
P618	Evaluate serviceability of equipment, tools, parts, or supplies	100
P629	Store equipment, tools, parts, or supplies	100
M485	Conduct self-inspections or self-assessments	100
P623	Issue or log turn-ins of equipment, tools, parts, or supplies	67
O612	Review technical order changes	67
A3	Clean facilities	67
M543	Plan self-inspection or self-assessment programs	67
P626	Maintain documentation on items requiring periodic inspections	67
M513	Establish procedures for accountability of equipment, tools, parts, or supplies	67
O600	Inventory classified materials	67
M538	Participate in general meetings, such as staff meetings, briefings, conferences, or workshops, other than conducting	67
P625	Maintain precision measurement equipment (PME) calibration schedules	67
O601	Maintain administrative files	33
O603	Maintain publications libraries, other than technical order libraries	33
O613	Safeguard classified materials	33
M509	Establish administrative files, such as correspondence files or classified files	33
P627	Maintain organizational equipment or supply records, such as custodian authorization/custody receipt listings (CA/CRLs)	33
P615	Coordinate supply-related matters with appropriate agencies	33
P624	Maintain benchstock parts or equipment levels	33

TABLE A5

MANAGEMENT/SUPERVISION

TASKS		PERCENT MEMBERS PERFORMING (N=27)
M551	Supervise military personnel	93
M535	Interpret policies, directives, or procedures for subordinates	89
M538	Participate in general meetings, such as staff meetings, briefings, conferences, or workshops, other than conducting	85
M554	Write performance reports or supervisory appraisals	85
M501	Develop or establish work schedules	81
M522	Evaluate personnel for compliance with performance standards	81
M484	Conduct general meetings, such as staff meetings, briefings, conferences, or workshops	81
M534	Inspect personnel for compliance with military standards	81
M487	Conduct supervisory performance feedback sessions	81
M556	Write recommendations for awards or decorations	78
M495	Determine or establish work assignments or priorities	78
M491	Counsel subordinates concerning personal matters	74
M520	Evaluate logistics requirements, such as personnel, equipment, tools, parts, supplies, or workspace	74
M519	Evaluate job-related suggestions	74
M525	Evaluate work schedules	70
M547	Schedule personnel for temporary duty (TDY) assignments, leaves, or passes	70
M500	Develop or establish work methods or procedures	70
M485	Conduct self-inspections or self-assessments	70
M489	Conduct supervisory orientations for newly assigned personnel	70
M526	Evaluate workload requirements	67
M523	Evaluate personnel for promotion, demotion, reclassification, or special awards	67
M503	Direct training functions	67
N566	Determine training requirements	67
M493	Determine or establish logistics requirements, such as personnel, equipment, tools, parts, supplies, or workspace	67
M528	Evaluate maintenance or utilization of equipment, tools, parts, supplies, or workspace	67
M557	Write replies to inspection reports	67
M498	Develop self-inspection or self-assessment program checklists	67
M549	Schedule work assignments or priorities	63
M512	Establish performance standards for subordinates	63
M533	Initiate actions required due to substandard performance of personnel	63
M488	Conduct safety inspections of equipment or facilities	63
M502	Direct administrative functions	59
M530	Indorse performance reports or supervisory appraisals	59
M539	Plan briefings, conferences, or workshops	59
M481	Assign personnel to work areas or duty positions	59
O590	Coordinate requests for TDY orders with appropriate agencies	59
M553	Write job or position descriptions	59

TABLE A6

FORMAL TRAINING INSTRUCTOR

TASKS		PERCENT MEMBERS PERFORMING (N=3)
N562	Conduct formal course classroom training	100
N579	Personalize lesson plans	100
N567	Develop formal course curricula, plans of instruction (POIs), or specialty training standards (STSs)	100
N569	Develop training materials or aids	100
N576	Evaluate progress of trainees	100
N577	Inspect training materials or aids for operation or suitability	100
N568	Develop performance tests	100
N578	Maintain training records or files	100
N565	Counsel trainees on training progress	100
N584	Write test questions	100
N571	Establish or maintain study reference files	100
N575	Evaluate effectiveness of training programs, plans, or procedures	100
N570	Develop training programs, plans, or procedures	67
N558	Administer or score tests	67
O605	Maintain technical order libraries	67
O592	Establish automated technical order management system (ATOMS) accounts	67
O602	Maintain ATOMS accounts	67
N585	Write training reports	67
N561	Complete student entry or withdrawal forms	33
M538	Participate in general meetings, such as staff meetings, briefings, conferences, or workshops, other than conducting	33
O612	Review technical order changes	33
M534	Inspect personnel for compliance with military standards	33
M535	Interpret policies, directives, or procedures for subordinates	33
A11	Interpret block or schematic diagrams of surveillance radar functional groups	33
M512	Establish performance standards for subordinates	33