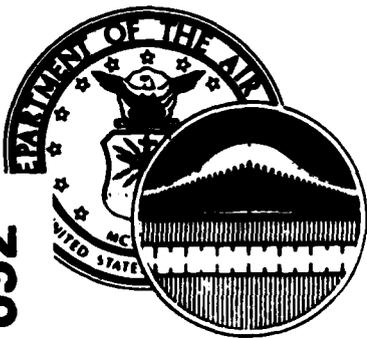


MICROCOPY RESOLUTION TEST CHART
 NATIONAL BUREAU OF STANDARDS-1963-A

2



UNITED STATES AIR FORCE

DTIC

ELECTE

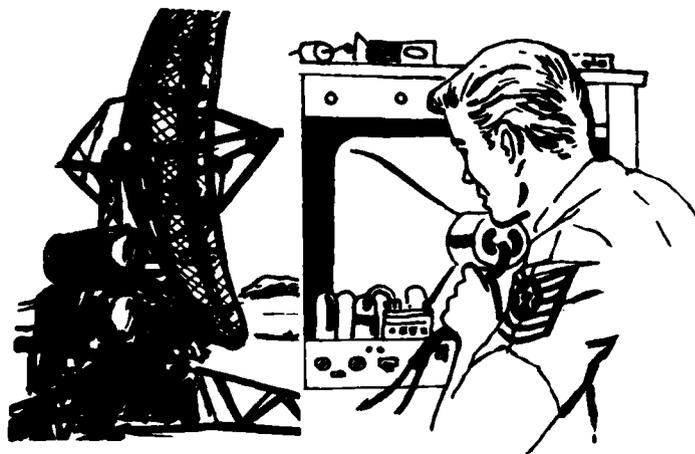
DEC 02 1987

S

D

AD-A187 692

OCCUPATIONAL SURVEY REPORT



AIR TRAFFIC CONTROL RADAR

AFSC 303X1

AFPT 90-303-786

SEPTEMBER 1987

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

APPROVED FOR PUBLIC RELEASE; DISTRIBUTION UNLIMITED

DISTRIBUTION FOR
AFSC 303X1 OSR AND SUPPORTING DOCUMENTS

| | <u>OSR</u> | <u>ANL EXT</u> | <u>TNG EXT</u> | <u>JOB INV</u> |
|--------------------------------------|------------|--------------------|--------------------|--------------------|
| AFHRL/MODS | 2 | 1m | 1m | 1 |
| AFHRL/ID | 1 | 1m | 1m/1h | 1 |
| AFMPC/DPMRPQ1 | 2 | | | |
| ARMY OCCUPATIONAL SURVEY BRANCH | 1 | | | |
| CCAF/AYX | 1 | | | |
| DEFENSE TECHNICAL INFORMATION CENTER | 2 | | | |
| HQ AAC/DPAT | 3 | | 3 | |
| HQ AFCC/DPATO | 3 | | 3 | |
| HQ AFCC/TTGT | 3 | | 3 | |
| HQ AFCC/LGMKF | 3 | | 3 | |
| HQ AFISC/DAP | 2 | | | |
| HQ AFSC/MPAT | 3 | | 3 | |
| HQ AFSPACECOM/MPTT | 2 | | 2 | |
| HQ AFSPACECOM/TTGT | 1 | | 1 | |
| HQ ATC/DPAE | 1 | | 1 | |
| HQ ATC/TTOK | 2 | | 1 | |
| HQ MAC/DPAT | 3 | | 3 | |
| HQ MAC/TTGT | 1 | | 1 | |
| HQ PACAF/TTGT | 1 | | 1 | |
| HQ PACAF/DPAT | 3 | | 3 | |
| HQ SAC/DPAT | 3 | | 3 | |
| HQ SAC/TTGT | 1 | | 1 | |
| HQ TAC/DPATJ | 3 | | 3 | |
| HQ TAC/TTGT | 1 | | 1 | |
| HQ USAF/LEYE | 1 | | 1 | |
| HQ USAF/DPPT | 1 | | | |
| HQ USAFE/DPAT | 3 | | 3 | |
| HQ USAFE/TTGT | 1 | | 1 | |
| HQ USMC (CODE TPI) | 1 | | | |
| NODAC | 1 | | | |
| 3300 TCHTW/TTGX (KEESLER AFB MS) | 3 | 2 | 3 | 2 |
| 3300 TCHTW/TTS (KEESLER AFB MS) | 1 | | 1 | |
| DET 3, USAFOMC (KEESLER AFB MS) | 1 | 1 | 1 | 1 |
| USAFOMC/OMYXL | 10 | 2m | 5 | 10 |
| 1872 SCHS/TU | 2 | 1m | 1m/2h | |
| 3507 ACS/DPKI | 1 | | | |
| 3785 FLDTG/TTFO | 2 | | 2 | |

m = microfiche only
h = hard copy only

TABLE OF CONTENTS

| | <u>PAGE NUMBER</u> |
|---------------------------------------------------------------------------------------|------------------------|
| PREFACE. | iv |
| SUMMARY OF RESULTS | v |
| INTRODUCTION | 1 |
| Objectives. | 1 |
| Background. | 1 |
| SURVEY METHODOLOGY | 2 |
| Inventory Development | 2 |
| Survey Administration | 3 |
| Survey Sample | 3 |
| Task Factor Administration. | 5 |
| Data Processing and Analysis. | 8 |
| SPECIALTY JOBS | 8 |
| Overview. | 9 |
| Descriptions of Career Ladder Jobs. | 12 |
| Comparisons Among Specialty Jobs. | 21 |
| Job Structure Comparison to Previous Survey | 21 |
| Summary | 22 |
| ANALYSIS OF DAFSC GROUPS | 22 |
| Skill Level Descriptions. | 22 |
| Summary | 31 |
| COMPARISON OF SURVEY DATA TO AFR 39-1 SPECIALTY DESCRIPTIONS | 31 |
| ANALYSIS OF CONUS VERSUS OVERSEAS GROUPS | 34 |
| TRAINING ANALYSIS. | 34 |
| Analysis of First-Enlistment Personnel. | 35 |
| Further Analysis of DAFSC 30331 Shreds. | 39 |
| SUMMARY. | 43 |
| DISCUSSION OF RELEVANCE AND ACCURACY OF CAREER LADDER TRAINING DOCUMENTS | 43 |
| Specialty Training Standard (STS) | 43 |

TABLE OF CONTENTS (CONTINUED)

| | <u>PAGE NUMBER</u> |
|-----------------------------------------|------------------------|
| PLAN(S) OF INSTRUCTION (POI) | 46 |
| Summary of Training Analysis. | 57 |
| Job Satisfaction. | 60 |
| Analysis of Write-in Comments | 62 |
| IMPLICATIONS | 64 |
| APPENDIX A | 66 |
| APPENDIX B | 67 |
| APPENDIX C | 68 |

PREFACE

This report presents the results of an Air Force occupational survey of the Air Traffic Control Radar Specialty (AFSC 303X1). The project was directed by USAF Program Technical Training, Volume Two, dated October 1985. Computer products upon which this report is based are available for use by operations and training officials.

The survey instrument was developed by Second Lieutenant Earl Nason, Inventory Development Specialist. Ms Rebecca Hernandez, Computer Programmer, provided computer support for this project. Administrative support was provided by Ms Raquel A. Soliz. Ms Viola L. Allen and Second Lieutenant Michael A. Solorio analyzed the data and wrote the final report. This report has been reviewed and approved by Lieutenant Colonel Thomas E. Ulrich, Chief, Airman Career Ladders Analysis Branch, USAF Occupational Measurement Center.

Copies of this report are distributed to Air Staff sections, major commands, and other interested training management personnel (see distribution on page i). Additional copies are available upon request to the USAF Occupational Measurement Center, Attention: Chief, Occupational Analysis Division (OMY), Randolph AFB, Texas, 78150-5000.

RONALD C. BAKER, Colonel, USAF
Commander
USAF Occupational Measurement
Center

JOSEPH S. TARTELL, GM-14
Chief, Occupational Analysis Division
USAF Occupational Measurement
Center

| | |
|--------------------|-------------------------------------|
| Accession For | |
| NTIS CRA&I | <input checked="" type="checkbox"/> |
| DTIC TAB | <input type="checkbox"/> |
| Unannounced | <input type="checkbox"/> |
| Justification | |
| By | |
| Distribution/ | |
| Availability Codes | |
| Dist | Avail and/or Special |
| A-1 | |



SUMMARY OF RESULTS

1. Survey Coverage: Fifty-seven percent (N=769) of the 303X1 career ladder personnel completed job inventory booklets. Personnel were surveyed across various Major Commands, with AFCC and ATC being the largest users. Notwithstanding the exclusion of members assigned to classified units, this sample, including 3-, 5-, and 7-skill level members only, was representative in terms of TAFMS and paygrade distribution.

2. Specialty Jobs: The career ladder is composed primarily of two broad areas: technical (maintenance production element) and nontechnical (management support, staff, and training). Technical jobs within this AFSC show a high degree of similarity in the types of maintenance operations performed (i.e., aligning, troubleshooting, performance checks, etc) regardless of radar system; yet, the wide array of radar system configurations and ancillary equipment in this career ladder were the key differentiating factors among these technical jobs. The vast majority of 303X1 personnel grouped in one of the technical areas. Nontechnical jobs differed primarily on the types and number of tasks performed. Eighty-nine percent of the survey sample grouped to form 5 clusters, 22 job types, and 4 independent job types.

3. Career Ladder Progression: Three-skill level personnel are primarily technicians, spending a majority of their time on general and preventive radar maintenance functions. Five-skill level members still perform a technical duty, but include some supervisory functions accounting for 29 percent of their job time. Finally, DAFSC 30371 personnel equally divide their time between radar maintenance and supervisory type duties.

4. AFR 39-1 Specialty Descriptions: Overall, the Specialty Descriptions for skill-level groups provide accurate and comprehensive coverage of jobs operating within this career ladder. Review of utilization of specialty shredsouts authorized at the 3-skill level may be warranted.

5. Training Analysis: Generally, the Specialty Training Standard (STS) is supported by survey data. However, due to the broad, general nature in which the paragraphs are written, the document does not reflect the diverse nature of career ladder jobs, lending to diminished clarity and utility for career field and technical school use. These inconsistencies and the extraordinarily lengthy list of tasks not referenced require review by career ladder training personnel to enhance the accuracy of the training standard.

Similarly, the four POIs designed to accommodate training for the five 3-skill level shreds warrant extensive review. The data suggest that ABR training for some of the shreds may not be relevant for first assignment needs. Training personnel may need to consider alternate training strategies to better meet career field needs.

6. Implications: Overall, the career ladder has remained relatively stable since the last survey conducted in May 1981. The introduction of new equipment items and the five 3-skill level shreds have had no major impact on career ladder structure. However, these changes have generated a pronounced effect on career ladder training programs. On the whole, structured training programs should be reviewed by career ladder managers to more effectively support the needs of the AFSC, and further improve the quality of the graduate.

OCCUPATIONAL SURVEY REPORT
AIR TRAFFIC CONTROL RADAR SPECIALTY CAREER LADDER
(AFSC 303X1)

INTRODUCTION

This is a report of an occupational survey of the Air Traffic Control Radar Specialty (AFSC 303X1) completed by the Occupational Analysis Division, USAF Occupational Measurement Center, in July 1987. The last occupational survey report of this career ladder was published in May 1981.

Objectives

This survey was requested by the Electronics Training Division, DCS/ Technical Training, Air Training Command. The primary purpose for conducting the survey was to update the STS and the POI while assessing the impact of current air traffic control radar equipment on career field structure and training programs.

One of the major training issues focused on the channelization of training for members entering this AFSC. Students are routed through one of five basic courses specified by a shred designation (30331A/B/C/D/E). The basic course is intended to provide training on air traffic control radar systems and related equipment to be maintained at the student's first base of assignment. Two areas were examined in assessing this issue: (1) utilization patterns of 3-skill level graduates, and (2) adequacy of current training programs in meeting career field needs.

In addition to the training issues, many other topics were analyzed in this occupational survey report (OSR). Some of these areas included: (1) identification of specialty jobs; (2) comparison of survey data with career ladder documents, such as AFR 39-1 Specialty Descriptions and the Specialty Training Standard (STS); (3) differences between groups, such as duty Air Force specialty codes (DAFSC); (4) comparison of job satisfaction data between enlistment groups; and (5) comparison of current survey findings with those of the previous report.

Background

As described in AFR 39-1 Specialty Descriptions for this AFSC, Air Traffic Control Radar Maintenance personnel install, maintain, and repair air traffic control radar systems and related equipment such as radar beacon systems, remoting systems, and video mappers.

Air Force Communications Command (AFCC) is the single largest user of 303X1 personnel, accounting for 93 percent of the assigned force. Seventy-four percent of the current survey sample are assigned to CONUS locations.

APPROVED FOR PUBLIC RELEASE; DISTRIBUTION UNLIMITED

An Armed Forces Vocational Aptitude Battery (ASVAB) electronic score of 67 is required for entry into the AFSC 303X1. Formal training is provided by the 3300th Technical Training Wing, Keesler AFB MS. This career ladder has 5 shreds at the 3-skill level based upon the types of air traffic control radar systems maintained. Systems which are unique to each shred are listed below.

| <u>Shred</u> | <u>Air Traffic Control Radar System</u> |
|--------------|-----------------------------------------|
| A | GPN-20/21, FPN-62 |
| B | GPN-20/21, GPN-22 |
| C | GPN-12, FPN-62 |
| D | GPN-12, GPN-22 |
| E | GPN-20/21, GPN-22, MPN-13/14 |

The length of training varies according to shred from 165 days for the A and C shreds to 212 days for the E shred. It is intended that, upon graduation and award of the 3-skill level, students will be "channeled" to bases that have radar systems corresponding to the basic technical training received.

SURVEY METHODOLOGY

Inventory Development

The data collection instrument for this occupational survey was USAF Job Inventory AFPT 90-303-786 dated July 1986. A preliminary task list was prepared by the Inventory Developer after carefully reviewing the previous task list, current career ladder publications, training documents, and directives to determine the appropriateness of each task. This tentative task list was refined and validated in the field through personal interviews with subject-matter experts at Keesler Technical Training Center and operational bases. Other significant contacts with personnel having career ladder involvement included Air Force Military Personnel Center (AFMPC) classification, functional, and resource managers; AFCC functional and resource managers; Air Force functional manager; HQ ATC Training Staff Officer and the training manager.

To ensure full coverage of the variety of tasks performed by career ladder members, critical bases were identified according to their uniqueness or diversity based upon air traffic control radar equipment maintained there. Operational units housed at the following bases were visited:

| <u>BASE</u> | <u>RATIONALE FOR VISIT</u> |
|------------------|----------------------------|
| Keesler AFB MS | Technical Training School |
| Homestead AFB FL | AN/FPN-47 ASR |

| | |
|-------------------|-----------------------------------|
| Nellis AFB NV | AN/GPN-25 ASR |
| March AFB CA | AN/GPN-12 ASR, FPN-62 PAR |
| George AFB CA | AN/FPN-61 PAR |
| Tinker AFB OK | AN/MPN-14, TPN-19 |
| Griessom AFB IN | AN/FPN-16 PAR |
| Plattsburg AFB NY | AN/GSN-12 ASR, PAR |
| MacDill AFB FL | ARTS III System |
| Kelly AFB TX | Electronics Installation Squadron |

This process resulted in a final job inventory, organized by specific radar systems, containing 1,699 tasks grouped under 26 duty headings. Also included was a background section requesting information such as grade, time in service, job satisfaction, reenlistment intentions, radar systems maintained, and vehicles or equipment used.

Survey Administration

From September 1986 through December 1986, Consolidated Base Personnel Offices (CBPO) in operational units worldwide administered the inventory to all eligible DAFSC 303X1 personnel at the 3-, 5-, and 7-skill levels. Members eligible for the survey consisted of the total assigned population, excluding the following: (1) hospitalized personnel, (2) members in transition for a permanent change of station, (3) members retiring during the time inventories were administered to the field, (4) all members in tentative status, and (5) members assigned to classified units. These job incumbents were selected from computer-generated mailing lists obtained from personnel data tapes maintained by the Air Force Human Resources Laboratory (AFHRL).

Each individual who filled out an inventory booklet first completed an identification and biographical information section, a background section which contains additional information pertinent to training, and then checked each task performed in their current job. Next, members rated these tasks on a 9-point scale showing relative time spent on each task as compared to all other tasks checked. Ratings ranged from one (very small amount of time spent) to nine (very large amount of 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. The rating for each task is divided by the sum of all the ratings, then multiplied by 100 to provide a relative percentage of time for each task. This procedure provides the basis for comparing tasks in terms of both percent members performing and average relative time spent.

Survey Sample

Personnel were selected to participate in this survey to ensure accurate representation across using major commands (MAJCOM) and paygrade groups. All eligible DAFSC 303X1 personnel at the 3-, 5-, and 7-skill levels were mailed survey booklets. Table 1 displays the MAJCOM percent distribution of survey

TABLE 1
 COMMAND DISTRIBUTION OF 303X1 SURVEY SAMPLE

| <u>COMMAND</u> | <u>PERCENT OF ASSIGNED</u> | <u>PERCENT OF SAMPLE</u> |
|----------------|--------------------------------|------------------------------|
| AFCC | 93 | 79 |
| ATC | 7 | 11 |
| TAC | * | 4 |
| USAFE | * | 2 |
| AAC | * | 1 |
| SAC | * | 1 |
| AFSC | * | 1 |

Total Assigned - 1,360 (as of July 1986)
 Total Eligible for Survey - 1,177 (as of July 1986)
 Total Sample - 769
 Percent of Assigned in Sample - 57%
 Percent of Eligible in Sample - 65%

* Less than 1 percent
 ** The following MAJCOMs represent less than 1 percent each of the survey sample: MAC, PACAF

respondents corresponding with the percent assigned 303X1 personnel as of July 1986. As shown in Table 1, a majority of these members are assigned to AFCC.

Table 2 displays survey respondents across paygrade groups, while Table 3 lists the sample distribution by total active federal military service (TAFMS) time groups. Notwithstanding the necessity to exclude some members, as stated above, the survey sample for this study is both representative and comprehensive.

Task Factor Administration

With the completion of the job inventory, an additional task was requested of selected senior NCOs. A second booklet, identical to the job inventory except in the biographical and background sections, was used to gather information for either training emphasis (TE) or task difficulty (TD). The TE and TD booklets were processed separately from the job inventories and provide task rating information which is used in a number of different analyses discussed in more detail in the following section of this report.

Task Difficulty (TD). Task difficulty is defined as the length of time an average airman needs to learn a task. Given this definition, 33 senior technicians rated the difficulty of all the inventory tasks on a 9-point scale (from extremely low to extremely high). To ensure the validity of the ratings, each technician's ratings were compared to those of every other senior technician rater. A statistical measurement of their agreement, known as the interrater reliability (as assessed through components of variance of standard group means), was computed at .86, indicating moderately high agreement among these raters. However, these data should be applied cautiously due to the somewhat lower than normally acceptable interrater reliability of .90. A closer examination of these ratings to detect possible rating policies revealed random, not systematic, rater disagreement. However, raters were consistent in that no ratings were provided on tasks in three duties representing the following equipment: ARTS III, GRC-203, and AN/GPN-25 ASR systems. TD ratings were adjusted so tasks of average difficulty would have ratings of 5.00. The resulting data are essentially a rank ordering of tasks indicating the degree of difficulty for each task in the inventory.

Training Emphasis (TE). Training emphasis is a rating of which tasks require structured training for first-term personnel. Experienced technicians (primarily 7-skill level) completing TE booklets were asked to rate tasks on a 10-point scale (from no training emphasis to extremely high training emphasis). Ratings were independently collected from this group of 92 NCOs distributed across major commands. To ensure validity of the ratings, each technician's ratings were compared to those of every other senior technician's ratings. A statistical measurement of their agreement, known as the interrater reliability (as assessed through components of variance of standard group means), was computed at .97, indicating a very high agreement among these 92 raters. The average TE rating was 1.67 with a standard deviation of 1.39. These data also provide essentially a rank ordering of tasks whereby those with the highest ratings are perceived as most important for structured training.

TABLE 2
PAYGRADE DISTRIBUTION OF SURVEY SAMPLE

| <u>PAYGRADE</u> | <u>PERCENT OF ASSIGNED</u> | <u>PERCENT OF SAMPLE</u> |
|-----------------|--------------------------------|------------------------------|
| AIRMAN | 24 | 23 |
| E-4 | 24 | 24 |
| E-5 | 25 | 27 |
| E-6 | 16 | 16 |
| E-7 | 11 | 10 |
| E-8 | * | * |

* Less than 1 percent
** Manning figures as of July 1986

TABLE 3
TAFMS DISTRIBUTION OF SURVEY SAMPLE

| <u>TAFMS (MONTHS)</u> | <u>PERCENT OF ASSIGNED</u> | <u>PERCENT OF SAMPLE</u> |
|-----------------------|--------------------------------|------------------------------|
| 1-48 | 36 | 37 |
| 49-96 | 22 | 22 |
| 97-144 | 17 | 18 |
| 145-192 | 11 | 12 |
| 193-240 | 10 | 9 |
| 241+ | 4 | 2 |

TE ratings provide objective information which should be used along with task difficulty and percent members performing data when making training decisions. Percent members performing data provide information on who and how many personnel perform the tasks. TE and TD ratings provide insights on which tasks need training. Using these factors, in conjunction with appropriate training documents and directives, career field managers can tailor training programs to accurately reflect the needs of the user by more effectively determining when, where, and how to train first-enlistment AFSC 303X1 personnel.

Data Processing and Analysis

Once job inventories are returned from the field, task responses and background information are optically scanned. Other biographical information (such as name, base, etc.) are entered onto disks directly into the computer. Once both sets of data are in the computer, they are merged to form a complete case record for each respondent. Computer-generated programs, using Comprehensive Occupational Data Analysis Program (CODAP) techniques, are then applied to the data.

CODAP produces composite job descriptions for respondents based on their ratings of specific inventory tasks. These job descriptions provide information on percent members performing each task, the relative average percent time spent performing tasks, and the cumulative percent time spent by all members performing each task in the inventory. In addition to the job descriptions based upon inventory task data, the program produces summaries that show how members of each group responded to each background item. Background items aid in identifying characteristics of the group, such as DAFSCs represented, time in career field, Total Active Federal Military Service, experience in various functional areas, equipment operated, and job satisfaction levels.

SPECIALTY JOBS (Career Ladder Structure)

One of the major functions of the USAF Occupational Analysis Program is to identify distinct jobs performed within a specialty and describe how these jobs relate to one another. This is accomplished by examining what incumbents indicate they are actually doing in their current jobs, rather than what official career ladder documents dictate they should do. The analysis of the job structure as performed in the field is made possible by the use of an automated job clustering program which is a basic feature of the CODAP system. This job information is used for a variety of purposes by a number of agencies, such as: (1) HQ AFMPC in areas involving the USAF Personnel Classification System, (2) the training community in providing the most cost-effective training to meet specialty needs, and (3) AFHRL in maintaining a data base of USAF occupations.

In addition, job information is used to analyze career progression patterns and specialty documents (AFR 39-1 Specialty Description, Specialty Training Standard, etc.) to identify needed changes. Job data are also used to identify morale (job satisfaction) problems, to identify trends, and to highlight issues needing management attention.

The specialty structure analysis process consists of determining the job structure of a career ladder in terms of job types, clusters, and independent job types. Each individual in the survey sample performs a set of tasks called a JOB. A group of individuals who perform many of the same tasks and spend similar amounts of time performing these tasks is called a JOB TYPE. A group of job types having a substantial degree of similarity based upon tasks performed and relative time spent on those tasks forms a CLUSTER. In some instances, specialized jobs are identified which are too dissimilar from other jobs contained within a cluster and are designated INDEPENDENT JOB TYPES. These terms will be used in the description of Air Traffic Control Radar Maintenance specialty jobs.

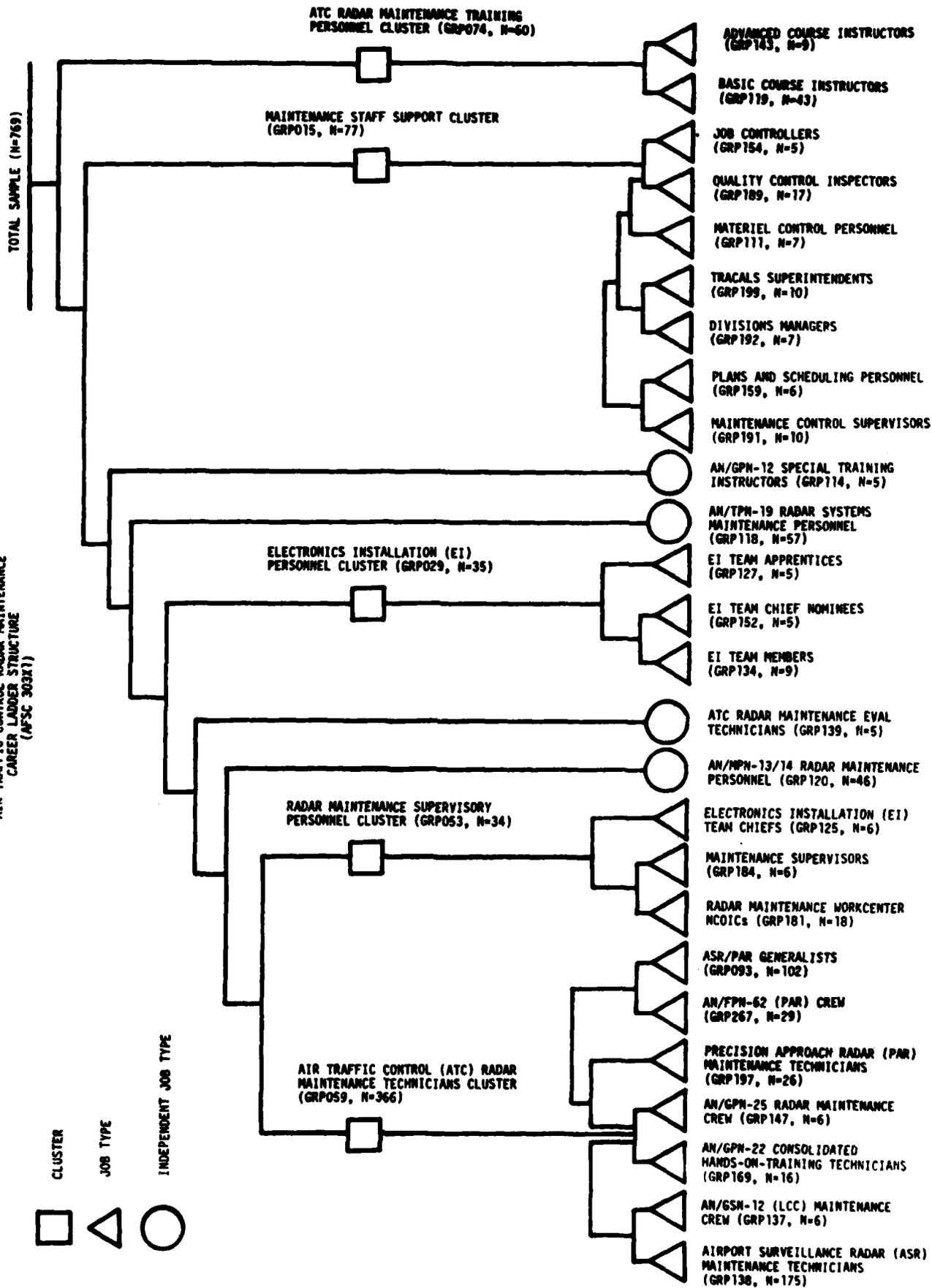
In this section of the report, the clusters will be fully described in terms of task performance and characteristics of its group members. For the most part, variations of jobs (Job Types) performed within a cluster will be contained in the description at the cluster level. Independent job types will also be discussed. Additionally, tables which provide background information and support the narrative descriptions will be included in this section. (Tables displaying selected background and task information for all groups are provided in Appendix A.)

Overview

Through structure analysis, based primarily on tasks performed and relative time spent on tasks, 22 job types contained within 5 clusters, and 4 independent job types were identified within the survey sample. Figure 1 is a diagrammatical representation of these jobs. The GRP numbers within each group, which have no mathematical significance, are computer-generated identifiers used to define aggregations of personnel in the group. The letter "N" denotes the number of members in the group. (NOTE: the "N" for a cluster will not always equal the sum of groups within the cluster, since only major job variations are examined in detail.) The titles given to these jobs are based upon composite job descriptions for the group members, job titles written in by survey respondents, and on background information responses.

- I. AIR TRAFFIC CONTROL (ATC) RADAR MAINTENANCE TECHNICIANS CLUSTER (GRP059, N=366)
 - A. Airport Surveillance Radar (ASR) Maintenance Technicians (GRP138, N=175)
 - B. AN/GSN-12 (Landing Control Central (LCC)) Maintenance Crew (GRP137, N=6)
 - C. AN/GPN-22 Consolidated Hands-On-Training Technicians (GRP169, N=16)

FIGURE 1
AIR TRAFFIC CONTROL RADAR MAINTENANCE
CAREER LADDER STRUCTURE
(AFSC 30321)



- D. AN/GPN-25 Radar Maintenance Crew (GRP147, N=6)
 - E. Precision Approach Radar (PAR) Maintenance Technicians (GRP197, N=26)
 - F. AN/FPN-62 (PAR) Maintenance Crew (GRP267, N=29)
 - G. ASR/PAR Generalists (GRP093, N=102)
- II. RADAR MAINTENANCE SUPERVISORY PERSONNEL CLUSTER (GRP053, N=34)
 - A. Radar Maintenance Workcenter NCOICs (GRP181, N=18)
 - B. Maintenance Supervisors (GRP184, N=6)
 - C. Electronics Installation (EI) Team Chiefs (GRP125, N=6)
 - III. AN/MPN-13/14 RADAR MAINTENANCE PERSONNEL (GRP120, N=46)
 - IV. ATC RADAR MAINTENANCE EVAL TECHNICIANS (GRP139, N=5)
 - V. ELECTRONICS INSTALLATION (EI) PERSONNEL CLUSTER (GRP029, N=35)
 - A. EI Team Members (GRP134, N=9)
 - B. EI Team Chief Nominees (GRP152, N=5)
 - C. EI Team Apprentices (GRP127, N=5)
 - VI. AN/TPN-19, RADAR SYSTEMS MAINTENANCE PERSONNEL (GRP116, N=57)
 - VII. AN/GPN-12 SPECIAL TRAINING INSTRUCTORS (GRP114, N=5)
 - VIII. MAINTENANCE STAFF SUPPORT CLUSTER (GRP015, N=77)
 - A. Maintenance Control Supervisors (GRP191, N=10)
 - B. Plans and Scheduling Personnel (GRP159, N=6)
 - C. Division Managers (GRP192, N=7)
 - D. TRACALS Superintendents (GRP199, N=10)
 - E. Materiel Control Personnel (GRP111, N=7)
 - F. Quality Control Inspectors (GRP189, N=17)
 - G. Job Controllers (GRP154, N=5)
 - IX. ATC RADAR MAINTENANCE TRAINING PERSONNEL CLUSTER (GRP074, N=60)
 - A. Basic Course Instructors (GRP119, N=43)
 - B. Advanced Course Instructors (GRP143, N=9)

Respondents performing the above-mentioned jobs account for 89 percent of the AFSC 303X1 survey sample. The remaining 11 percent did not group with any of the clusters or independent job types due to the uniqueness of their jobs based on mission requirements, contingency assignments, temporary conditions, or the manner in which they perceive their jobs.

Descriptions of Career Ladder Jobs

Air Traffic Control (ATC) Radar Maintenance is but one of the maintenance activities that are either directly or functionally responsible to a single Chief of Maintenance. The end items or radar systems maintained by personnel assigned to this AFSC differ as to their respective purposes, which include: (1) air route traffic control (ARTC), (2) terminal control as with airport surveillance radar (ASR), or (3) final approach control or precision approach radar (PAR). These radar systems are used to supply radar information, such as azimuth, range and elevation needed to ensure the safe departure, travel, and arrival of aircraft in weather at any time day or night. The overall mission of ATC Radar Maintenance personnel is to provide fully operable ATC radar systems and ancillary equipment essential to the safe and accurate accomplishment of the Air Force's primary mission.

Jobs within this AFSC may be differentiated based upon their primary focus in regard to production (technical), staff, or management support (non technical) functions.

Although the production elements within this career ladder are fairly similar, it is noteworthy to mention that tasks performed and responsibilities may vary from unit to unit among staff, support, as well as technical jobs, depending on the organizational structure of the maintenance complex to which the unit is assigned. There are four categories of maintenance complexes which vary to meet the needs of units. These categories differ in mission, size, type of equipment, and other factors. Occasionally, categories may add, delete, or combine functions, depending on size, location, mission, and span of control. The units within the four categories pertinent to personnel assigned to this AFSC may differ by the following factors: (1) authorized 24-hour job control function, (2) no authorized 24-hour job control function, (3) an enlisted Chief of Maintenance, and (4) contract location.

Brief descriptions of each cluster, along with job variations within the cluster and independent job types are presented below. A sample of tasks which illustrate the nature of each job will also be contained in the description. Selected background data for these specialty jobs are provided in Table 4. In addition, Appendix B provides similar information for each specialty job variation identified in the preceding outline.

I. ATC RADAR MAINTENANCE TECHNICIANS CLUSTER (GRPO59, N=366). Members performing this highly technical job represent the largest production element operating within the AFSC 303X1 career ladder. While the majority of these incumbents hold the 5- or 7-skill level and are qualified to work on a broad range of radar systems and associated equipment, this group also contains the largest number of 3-skill level members (N=51) of any job. Of these, the majority of the 3-skill level personnel hold the "A" or "C" shred designators. Only "E" shred apprentices are not represented in this job.

Forty-one percent of these airmen are in their first enlistment and, therefore, perform very few supervisory tasks. Only 3 percent of the members in this job perform supervisory functions. However, they do perform the

TABLE 4

SELECTED BACKGROUND DATA FOR AIR TRAFFIC CONTROL RADAR MAINTENANCE SPECIALTY JOBS

| | ATC RADAR MAINT TECHS CLUSTER (GRP055) | | RADAR MAINT SUPVY PERS CLUSTER (GRP053) | | AN/MPN- 13/14 RADAR MAINT PERS (GRP120) | | ATC RADAR EVAL TECHNS (GRP139) | | EI PERS CLUSTER (GRP029) | | AN/TPN-19 RADAR SYS MAINT PERS (GRP118) | | AN/ GPN-12 SPECIAL TRNG INSTRS (GRP114) | | ATC MAINT STAFF SUPPORT CLUSTER (GRP015) | | RADAR MAINT TRNG CLUSTER (GRP074) | | |
|-----------------------------|-------------------------------------------------------|-------------------|--------------------------------------------------------|-----|--------------------------------------------------------|-----|--------------------------------------------|-----|-----------------------------------|-----|-----------------------------------------------------|------|--------------------------------------------------------|-----|---------------------------------------------------------|--|-----------------------------------------------|--|--|
| | NUMBER IN GROUP | PERCENT OF SAMPLE | PERCENT IN CONUS | | | | | | | | | | | | | | | | |
| 30331 | 366 | 48% | 70% | 34 | 46 | 5 | 35 | 57 | 5 | 35 | 57 | 5 | 77 | 60 | | | | | |
| 30351 | 48% | 4% | 59% | 4% | 6% | * | 5% | 7% | * | 5% | 7% | * | 10% | 8% | | | | | |
| 30371 | 70% | 59% | 48% | 59% | 48% | 80% | 94% | 97% | 80% | 94% | 97% | 100% | 64% | 95% | | | | | |
| DAFSC DISTRIBUTION: | | | | | | | | | | | | | | | | | | | |
| 30331 | 14% | 0% | 24% | 0% | 24% | 0% | 11% | 19% | 0% | 11% | 19% | 20% | 1% | 2% | | | | | |
| 30351 | 58% | 12% | 52% | 40% | 52% | 40% | 83% | 65% | 40% | 83% | 65% | 60% | 31% | 80% | | | | | |
| 30371 | 28% | 88% | 24% | 60% | 24% | 60% | 6% | 16% | 60% | 6% | 16% | 20% | 68% | 18% | | | | | |
| DAFSC SUFFIX DISTRIBUTION: | | | | | | | | | | | | | | | | | | | |
| 30331A | 4% | 0 | 2% | 0 | 2% | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1% | 0 | | | | | |
| 30331B | 2% | 0 | 11% | 0 | 11% | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | |
| 30331C | 4% | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | |
| 30331D | 1% | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | |
| 30331E | * | 0 | 7% | 0 | 7% | 0 | 0 | 19% | 0 | 0 | 19% | 0 | 0 | 0 | | | | | |
| AVG GRADE | | | | | | | | | | | | | | | | | | | |
| AVG MONTHS IN CAREER FIELD | E-5 | E-6 | E-4 | E-6 | E-4 | E-6 | E-4 | E-4 | E-6 | E-4 | E-4 | E-4 | E-6 | E-5 | | | | | |
| AVG MONTHS IN SERVICE | 70 | 147 | 66 | 136 | 66 | 136 | 38 | 48 | 136 | 38 | 48 | 61 | 129 | 82 | | | | | |
| | 84 | 185 | 78 | 139 | 78 | 139 | 48 | 57 | 139 | 48 | 57 | 80 | 165 | 101 | | | | | |
| PERCENT IN FIRST ENLISTMENT | | | | | | | | | | | | | | | | | | | |
| | 41% | 3% | 50% | 0% | 50% | 0% | 80% | 30% | 0% | 80% | 30% | 20% | 6% | 2% | | | | | |
| PERCENT SUPERVISING | | | | | | | | | | | | | | | | | | | |
| AVG NO. OF TASKS PERFORMED | 3% | 44% | 9% | 0% | 9% | 0% | 6% | 0% | 0% | 6% | 0% | 0% | 6% | 0% | | | | | |
| | 294 | 215 | 243 | 104 | 243 | 104 | 164 | 273 | 104 | 164 | 273 | 79 | 40 | 16 | | | | | |

* Denotes value less than 1 percent
NOTE: May not equal 100 percent due to rounding or nonresponse

highest average number of tasks (N=294) on a wider range of radar systems and ancillary equipment characteristic of this career ladder than any other job group identified. They spend the majority of their job time maintaining the following end items: AN/GPN-20/21(ASR), AN/GPA-133 Brite II, AN/FPN-62(PAR), AN/GPN-12(ASR), AN/TPX-42 Interrogator, and AN/GPN-22(PAR). An example of tasks representative of this vast, technical job include:

- performance check AN/GPA-133 cameras
- troubleshoot AN/GPA-131 video mapper systems to subassembly level, such as PCC
- align TPX-42 receiver transmitter groups
- performance check AN/FPN-62 remoting groups
- performance check AN/GPN-20/21 transmitter frequencies
- performance check AN/GPN-12 transmitter frequencies
- remove minor hardware, such as dials, bulbs, and clamps
- prepare AFTO Forms 349 (Maintenance Data Collection Record)

Overall, jobs performed by members of this cluster are fairly similar. However, some variations were identified which may be attributed to factors differentiating the various organizational structures or maintenance complexes in this career ladder (i.e., mission, number of personnel authorizations per shop, type of equipment maintained, etc.). For example, ASR Maintenance Technicians (GRP138, N=175) concentrate the majority of their job time maintaining one radar system (AN/GPN-20/21, (ASR)) and other ancillary equipment, such as AN/GPA-133 Brite II and AN/TPX-42 Interrogator systems.

Likewise, the 6 members comprising the AN/GSN-12 Maintenance Crew (GRP137, N=6) work within the landing control central (a self-contained shelter which houses the AN/GPN-20). Hence, the majority of their job time is spent maintaining these two systems, with very little time spent on the AN/GPA-133 Brite or AN/TPX-42 Interrogator systems.

Unlike the job previously identified, AN/GPN-22 Consolidated Hands-On-Training Technicians (GRP169, N=16) spend the vast majority of their job time maintaining one radar system--AN/GPN-22 (PAR), exclusively. They do not maintain any ASR system. These members provide hands-on-training for 303X1 personnel via this special training program directed by AF Communications Command.

Similarly, the AN/GPN-25 Radar Maintenance Crew (GRP147, N=6) stationed at Nellis AFB maintains the only two AN/GPN-25 systems in the Air Force inventory. Unlike ASR Maintenance Technicians (GRP138), which spends the majority of their job time on ASR systems repair, PAR Maintenance Technicians (GRP197, N=26) spend the majority of their job time maintaining AN/FPN-62(PAR) systems in addition to other ancillary equipment (AN/GPA-133 Brite II and AN/TPX-42) commonly maintained by members within this cluster. In addition, PAR Maintenance technicians are among the few members of this career ladder who spend time repairing AN/FPN-47 (ASR) systems, which are gradually being phased out of the inventory and replaced by AN/GPN-20 (ASR) systems. Members of the AN/FPN-62(PAR) Maintenance Crew (GRP267, N=29) devote almost 40 percent of their job time repairing one radar system-- the AN/FPN-62 (PAR), exclusively.

Other job variations within this cluster were identified as ASR/PAR Generalists (GRP093, N=102) primarily due to the amount of time spent performing maintenance tasks (average number = 265) on multiple ASR and PAR systems, such as AN/GPN-12 (ASR), AN/FPN-62 (PAR), and AN/GPN-22 (PAR). Also, these members spend greater amounts of time repairing a broad range of ancillary equipment, some of which is uncommon to the other jobs within this cluster.

II. RADAR MAINTENANCE SUPERVISORY PERSONNEL CLUSTER (GRP053, N=34). These senior NCOs (average rank of technical sergeant) represent the only job in which a substantial percentage of members are responsible for direct supervisory duties, such as organizing and planning, directing and implementing, or inspecting and evaluating. With such responsibilities, this cluster is comprised primarily of 7-skill level members, with only 3 percent in their first enlistment. They perform 215 tasks on the average, and some of the most representative are:

- supervise Air Traffic Control Radar Specialists (AFSC 30331)
- review correspondence
- maintain training records
- plan work assignments
- counsel personnel on personal or military-related matters
- inventory tools, equipment, or supplies

While better than 50 percent of their total job time is spent performing supervisory activities, many act in the capacity of first-line supervisors and perform actual hands-on maintenance of radar systems assigned to their locations. For example, Radar Maintenance Workcenter NCOICs (GRP181, N=18) also perform technical tasks, such as the following, in addition to their supervisory functions: aligning radar system power supplies, active target simulators or AN/GPA-131 video mapper deflection amplifiers; troubleshooting radar systems and ancillary equipment; or, installing radar receiver or indicating system subassemblies. Thus, Workcenter NCOICs have a broad range of job responsibility, encompassing both supervisory and technical functions to ensure the most effective management, utilization of available resources, and top-notch maintenance.

Depending on the maintenance category of a given unit, Maintenance Supervisors (GRP184, N=6) occupy an intermediate-level supervisory position and are assigned in cases where size, number assigned, or location of workcenters precludes direct supervision by the CEM. Therefore, Maintenance Supervisors may supervise more than one workcenter to ensure the timely and efficient accomplishment of high-quality maintenance. Members functioning in this capacity have greater time in service than other jobs identified, averaging 222 months TAFMS, with an average rank of master sergeant. Unlike ATC Workcenter NCOICs, this group spends an extremely small amount of job time performing hands-on-equipment maintenance tasks. Theirs is largely a supervisory or managerial responsibility.

Finally, the other variation of supervisors within this relatively small cluster are Electronics Installation Team Chiefs (GRP125, N=6). In addition to the typical supervisory tasks, 83 percent of this group of predominantly 7-skill level airmen perform tasks involving radar system installation and removal, and site support functions, such as: constructing rigging structures, shakedown, or operational tests of newly installed equipment; connecting primary power to radar systems; and installing fixed ASR/PAR systems. This group performs the lowest number of tasks on the average (N=91) than any of the other jobs identified within this cluster.

III. AN/MPN-13/14 RADAR MAINTENANCE PERSONNEL (GRP120, N=46). The job performed by members of this independent job type is somewhat similar to the first cluster identified (ATC Radar Maintenance Technicians) in that the overall job is highly technical, with very few members performing supervisory activities (9 percent supervise 7 incumbents on the average). Their technical expertise is primarily devoted to maintaining AN/MPN-13/14 ASR, PAR, and Radar Approach Control (RAPCON) for MPN-14 systems. Forty-eight percent of their total job time is spent on this one duty. These incumbents spend 50 percent of their job time on 120 tasks, some of which include:

- troubleshoot AN/MPN-13/14 ASR transmitter groups to subassembly level, such as modules
- perform AN/MPN-13/14 turn-on or turn-off procedures
- align AN/MPN-13/14 PAR transmitter systems
- perform AN/TPX-42 turn-off or turn-off procedures
- perform high reliability soldering

Personnel performing this job have an average of 78 months service time, an average paygrade of sergeant, and are assigned to overseas locations. The majority of these members (52 percent) hold DAFSC 30351. Three-skill level members represent 24 percent of this group, with only 7 percent indicating an "E" shred designation (NOTE: Only DAFSC 30331E personnel receive training on AN/MPN-14 (PAR/ASR) RAPCON systems). Due to the purpose of this type of radar system, many MPN-13/14 Radar Maintenance Personnel are assigned to one of the few mobile (MOB) units which utilize 303X1 personnel.

IV. ATC RADAR MAINTENANCE EVAL TECHNICIANS (GRP139, N=5). This non-supervisory group of senior NCOs (average rank of technical sergeant) are all stationed at HQ AFCC, Scott AFB, and are assigned to the 1866 FCS (Facility Checking Squadron), which is primarily a Temporary Duty (TDY) unit. These members work closely with individual ATC radar workcenter personnel and quality control at various locations in the performance of activities, such as isolating problems in equipment performance and recommending corrective actions. They perform 104 tasks on the average, but are qualified to repair a broad range of radar systems--from the highly common ones, such as AN/GPN-20/21 (ASR), to the less common ones, such as AN/FPN-16/61(PAR), depending on the equipment maintained at the unit of visitation. Examples of tasks performed by these highly-skilled technicians include:

performance check AN/GPN-20/21 range azimuth gating circuits
performance check AN/FPN-62 transmitter groups
performance check AN/GPN-22 antenna vertical sensors
perform equipment inspections
evaluate inspection procedures
performance check AN/MPN-13/14 PAR magnetron spectrums

V. ELECTRONICS INSTALLATION (EI) PERSONNEL CLUSTER (GRP029, N=35).
This group, representing 5 percent of the survey sample, works closely with professional engineers in siting radar systems--putting the equipment in its operating location and getting it to work properly. While the engineers are primarily responsible for developing scheme packages as their role in the "Engineering and Installation" framework, AFSC 303X1 personnel do the 'nuts and bolts' of the electronics installation effort--initial set-up or removal of radar systems. Unlike some members in other jobs who perform occasional installation of radar systems, these airmen perform this job on a regular basis. Team members are deployed to various locations in response to a need for a fixed ground communications-electronics meteorological (CEM) facility. A typical EI team consists of five to ten members performing similar tasks. Tasks which are performed by high percentages of EI personnel cluster include:

install tie wraps
inspect scheme materials
drill and tap holes for mounting equipment
remove conduits (cable troughs)
assemble cable harnesses

Task performance among team members primarily differ in the average number performed and complexity. For instance, EI Team Apprentices (GRP127, N=5) have an average of 29 months in the career field and perform 72 tasks on the average. Many of these junior airmen have not received advanced installation training such as that provided via the Standard Installation Practices Training (SIPT) program. They spend the majority of their time performing tasks such as driving to and from operating locations, drilling holes for mounting equipment, assembling conduits, and installing equipment cabinets. EI Team Members (GRP134, N=9), representing the majority of this cluster, perform 232 tasks on the average and have an average rank of staff sergeant. They perform many of the same technical tasks as their subordinates (GRP127) in addition to more difficult tasks, such as performing depot level modifications, and performing alignments, troubleshooting, and performance checks on the installed radar equipment. Finally, EI Team Chief Nominees (GRP152, N=5) represent the most highly skilled members within this cluster. They perform an average of 361 tasks, encompassing a wide range of tasks from those of lesser difficulty to those having greater complexity. This group performs more tasks involving fabricating cables, disassembly and assembly of radar parts, and troubleshooting from subassembly to discrete component level. Typically, these members have greater time in service (106 months), have completed the advanced program under SIPT, and are assuming some supervisory responsibilities.

VI. AN/TPN-19 RADAR SYSTEMS MAINTENANCE PERSONNEL (GRP118, N=57). This small group of ATC radar maintenance personnel, representing 7 percent of the survey sample, performs a highly specialized job in relation to other members within this career ladder, with the exception of AN/MPN-13/14 Radar Maintenance Personnel. In direct contrast to AN/MPN-13/14 Radar Maintenance Personnel, members of this group spend very little time performing tasks related to the removal or installation of fixed radar systems. Instead, they spend the vast majority of their job time maintaining and installing AN/TPN-19 (ASR, PAR, or operations (OPS) trailer systems, and ancillary equipment specified for that mobile system, such as, AN/GPA-131 video mappers and AN/TPX-42 interrogator sets. Also, the majority (97 percent) of these incumbents are assigned to CONUS locations. With an average of 57 months service time, they spend over half of their job time on 131 tasks, some of which are:

- align AN/TPN-19 ASR receiver front panels
- align AN/TPN-19 PAR RML transmitter besse1
- zero and receiver baseband circuits
- install mobile PAR shelters
- tie down mobile shelters
- performance check AN/TPN-19 ASR receiver
- sensitivity timing constant

Also, members assigned to this area of radar maintenance assume deployment duties and responsibilities required in the installation of temporary radar systems, characteristic of MOB units.

VII. AN/GPN-12 SPECIAL TRAINING INSTRUCTORS (GRP114, N=5). This small independent job type is but another example of the diverse technical expertise contained in this career ladder. This is primarily a journeyman group of dual-qualified radar instructor-maintainers similar to AN/GPN-22 Consolidated Hands-on-Training Technicians (GRP169) and AN/GPN-25 Radar Maintenance Crew (GRP147). Sixty percent have the 5-skill level. Three members are ATC resources stationed at Keesler AFB. In addition to providing special qualification training to DAFSC 30351 personnel (course length=1 month) exclusively on the AN/GPN-12 ASR radar system, this group spends a large percentage of their total job time actually conducting performance checks on one of the oldest ASR systems in the field. They perform 79 tasks on the average. A sampling of these tasks includes:

- conduct resident course classroom training
- prepare lesson plans
- performance check AN/GPN-12 MTI gain and balance units
- performance check AN/GPN-12 receiver gain units
- align AN/GPN-12 lock test pulse generators
- performance check radar system power supplies

VIII. MAINTENANCE STAFF SUPPORT CLUSTER (GRP015, N=77). This is the second largest job identified within the ATC Radar Maintenance career ladder (10 percent of sample). Incumbents working within this cluster have largely a managerial role. Overall, their primary function is to provide support for maintenance production via multiple subfunctions, such as job control, plans and scheduling, and materiel control. Decisions and actions made at this level may have significant impact on the overall effectiveness of the operational mission.

Sixty-eight percent of these more senior NCOs (average paygrade E-6) hold the 7-skill level and have served an average of 165 months total service time. While the majority of these incumbents spend little time on direct supervisory tasks, they do spend better than 57 percent of their total job time performing inspections, evaluations and administrative tasks. Tasks consuming a relatively large percentage of their job time include:

- maintain status indicators, such as boards, graphs, or charts
- participate in meetings, such as staff meetings, briefings, conferences, or workshops
- input maintenance management information and control system (MMICS) data on computer terminals
- write replies to inspection reports
- draft directives, such as local policy or higher headquarters directives
- evaluate maintenance procedures
- maintain files

There are several fairly homogeneous jobs within this cluster. The differentiating factors between these jobs are the average number of tasks performed and time spent performing various supervisory, evaluate, or administrative duties.

Maintenance Control Supervisors (GRP191, N=10) are directly responsible to CEM for maintenance production and the effective use of maintenance resources. Responsibilities and duties within this area closely parallel those performed by Job Controllers (GRP154, N=5) and Plans and Scheduling Personnel (GRP159, N=6). In most instances, the two latter jobs are subfunctions of maintenance control. Maintenance Control Supervisors perform a broader job (average tasks=52), including some supervisory responsibilities and are senior to the other two subfunctions. On the other hand, Job Controllers perform a highly circumscribed administrative job (7 tasks on the average) providing coordination and direction of maintenance production to ensure the smooth flow of all production efforts. Plans and Scheduling Personnel perform an average of 22 tasks which are primarily administrative and supervisory in nature. The purpose of this job is aimed at coordinating maintenance resources to satisfy known and forecasted maintenance requirements. Similarly, Materiel Control Personnel (GRP111, N=7) perform 26 tasks on the average, none of which relate to direct supervision of personnel. Instead, this group spends larger percentages of their job time organizing, planning, and performing evaluative activities in assisting maintenance

production personnel in expediting all supply transactions. The job within this cluster having the most supervisory responsibility by far is that performed by Traffic Control and Landing Systems (TRACALS) Superintendents (GRP199, N=10). Members perform 42 tasks on the average and some supervise as many as 18 personnel. Typically, they not only supervise radar maintenance personnel, but incumbents in jobs resulting from the combination of two or more workcenters and AFSCs, such as NAVAIDS (AFSC 304X1) and Weather (AFSC 302X0). Quality Control Inspectors (GRP 189, N=17) represent the largest percentage of members within this cluster. Overall, they perform a job wider in scope in comparison to other jobs contained in this maintenance support cluster (average number tasks = 70). Their job goes beyond performing inspections and evaluations (an area in which they spend 49 percent job time), but they also analyze deficiencies by determining causes of problems and recommending corrective actions. Oftentimes, these inspectors work closely with ATC Radar Maintenance Eval Technicians referred to in an earlier section of this report. The job performed by Division Managers (GRP192, N=7) is similar to that of Quality Control Inspectors in that these incumbents spend large percentages (45 percent) of their job time performing the duty of inspecting and evaluating. Unlike the inspectors, this group spends more time performing evaluative activities rather than conducting inspections. Their role is to provide maintenance support at the MAJCOM level.

IX. ATC RADAR MAINTENANCE TRAINING PERSONNEL CLUSTER (GRP074, N=60). Ninety-five percent of the members comprising this cluster (8 percent of survey sample) are assigned to Air Training Command, and most indicate Technical School as their functional area of assignment. Others indicate areas such as Maintenance Training Management and are responsible for providing training, other than entry-level (ABR) training, ancillary maintenance training, qualification training, special task qualification training, or maintenance management training. In addition, some members spend greater percentages of their job time devoted to other areas, such as curriculum development; or, they divide their job time almost equally between classroom instruction and actual hands-on maintenance. Hence, the amount of time spent on training or instruction tasks and the type of training provided are the key differentiating factors between the two jobs, Basic Course Instructors (GRP119, N=43) and Advanced Course Instructors (GRP143, N=9) operating within this cluster. Eighty percent have the 5-skill level and most hold the rank of staff sergeant. Cumulatively, they perform 16 tasks, on the average, with better than 60 percent of their job time concentrated in Duty D (Training). Typical tasks performed by this group of instructors include:

- prepare lesson plans
- score tests
- conduct resident course classroom training
- develop training aids
- write test questions
- develop training course curriculum materials
- administer tests

Comparisons Among Specialty Jobs

The production elements (technical maintenance jobs) vary with the type or purpose (ASR, PAR, etc) of ATC radar system maintained and the time spent maintaining those systems. Overall, the technical jobs may be considered as relatively homogeneous. This was made evident by the identification of the ATC Radar Maintenance Cluster as the largest job in the 303X1 career ladder. It accounted for 366 members or 48 percent of the survey sample. Additionally, members of the two smallest technical jobs, ATC Radar Eval Technicians and AN/GPN-12 Special Training Instructors, cumulatively represent only 1 percent of the survey sample. These members perform jobs which are unique from those described in the ATC Radar Maintenance Cluster, based upon the scope of their jobs reflected in the performance of many tasks with multi-system orientation versus fewer specialized tasks performed in maintaining primarily single-radar systems.

On the other hand, nontechnical jobs (staff, management support, and training) revealed more distinct, yet interrelated, functions in comparison to technical jobs; the average number and kinds of tasks performed were the key differentiating factors. For instance, the interdependence of Maintenance Control, Job Control, and Plans and Scheduling was made evident in the description for each group; yet, each area contributes a highly specialized function that together are essential in guiding the maintenance production element toward efficient, top-quality maintenance.

Job Structure Comparison to Previous Survey

An OSR of the Air Traffic Control Radar Specialty was last completed in May 1981 and resulted from a joint survey request with 2 other AFSCs from the radar maintenance career field: Aircraft Control and Warning Radar (AFSC 303X2) and Automatic Tracking Radar (AFSC 303X3). The current survey was requested as a single ladder study for purposes other than merging of the three specialties mentioned above (see Objectives of Study section of this report). The number of members included in the samples were relatively consistent (N=750 in 1981 study; N=769 in current study) across surveys. Likewise, jobs performed by incumbents in the previous survey were highly similar to those performed by their counterparts in the current survey.

In the analysis of career ladder structure in the previous survey, 4 clusters and 4 independent job types were identified. These jobs had either a technical or nontechnical orientation that accounted for the major differentiating factors between them. These findings are comparable to the jobs identified within the 5 clusters and 4 independent job types in the current survey. Here again, jobs have either a primary technical or nontechnical focus, such as those identified within Air Traffic Control Radar Maintenance Technicians Cluster (found in both surveys) versus Maintenance Staff Support Personnel Cluster, which contains job types found as clusters in the previous survey, such as Job Control Personnel or Quality Control Personnel Clusters. Similarly, between surveys, tasks characteristic of technical jobs differed based upon the types of radar systems and ancillary equipment maintained.

Table 5 lists the major jobs identified in the 1981 survey and the equivalent major jobs identified in the current study. With the exception of 2 small independent job types, ATC Radar Eval Technicians and TPN-19 Radar Maintenance Personnel, all jobs identified in the 1981 survey are operating in the current career ladder structure. These findings may be attributed to a more detailed listing of tasks in the job inventory for a single career ladder study as opposed to a somewhat more generalized listing in the previous multiladder study. However, these differences are minor, and the overall structure is relatively stable.

Summary

In conclusion, this review of the AFSC 303X1 career ladder structure reveals that no substantial job changes have occurred in the last 5 years, and no drastic changes are foreseen in the near future. While the major technical jobs were primarily differentiated by the types of radar systems or ancillary equipment maintained, it is interesting to note that the initiation (since the previous OSR) of the shredouts at the 3-skill level has had no substantial impact upon jobs performed within the ATC Radar Maintenance career field. In most instances, these junior members accounted for 20 percent or less of any identifiable job within the career ladder structure. (Note: A more detailed analysis of 3-skill level members will be contained in the following section of this report.) Overall, this analysis supports a single career ladder structure.

ANALYSIS OF DAFSC GROUPS

In addition to analysis of the career ladder structure, an examination of the tasks performed at each skill level is helpful in understanding the Air Traffic Control Radar specialty. The DAFSC analysis compares the skill levels to identify differences in task performance. This information may be used to determine whether personnel are utilized in the manner specified by the Specialty Description (AFR 39-1) and may serve as a basis for considering changes to current utilization policies and training programs.

Skill Level Descriptions

DAFSC 30331. There are 104 airmen (14 percent of sample) qualified at the 3-skill level. Of these, 75 members indicated their respective DAFSC shred, while the remaining 29 members did not. However, the description of the job performed by 3-skill level members will be inclusive of all DAFSC 30331 members in the survey sample. These members perform an average of 169 tasks and, as in most career ladders, these junior-level airmen perform primarily a technical job. These incumbents spend approximately 85 percent of their job time on technical radar maintenance duties as illustrated in Table 6. A closer look at Table 6 reveals that duties performed related to ancillary equipment are the common areas across the 3-skill level shreds. Tasks commonly

TABLE 5

COMPARISON OF MAJOR JOBS BETWEEN SURVEYS

| CURRENT SURVEY (N=769) | 1981 SURVEY (N=750) |
|------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| AIR TRAFFIC CONTROL RADAR MAINTENANCE TECHNICIANS CLUSTER | AIR TRAFFIC CONTROL RADAR MAINTENANCE PERSONNEL CLUSTER PRECISION APPROACH RADAR REPAIRMEN (IJT) ANCILLARY MAINTENANCE PERSONNEL (IJT) |
| ELECTRONICS INSTALLATION PERSONNEL CLUSTER | ELECTRICAL INSTALLATION TEAM MEMBERS (IJT) |
| RADAR MAINTENANCE SUPERVISORY PERSONNEL CLUSTER MAINTENANCE STAFF SUPPORT CLUSTER | RADAR MAINTENANCE SUPERVISORS CLUSTER |
| QUALITY CONTROL INSPECTORS (JT) | QUALITY CONTROL PERSONNEL CLUSTER |
| JOB CONTROLLERS (JT) | JOB CONTROL PERSONNEL CLUSTER |
| AIR TRAFFIC CONTROL RADAR MAINTENANCE TRAINING PERSONNEL CLUSTER AN/GPN-12 SPECIAL TRAINING INSTRUCTORS (IJT) | RESIDENT COURSE INSTRUCTORS (IJT) |
| AN/MPN-13/14 RADAR MAINTENANCE PERSONNEL (IJT) | MOBILE RAPCON REPAIRMEN (JT) |
| AN/TPN-19 RADAR SYSTEMS MAINTENANCE PERSONNEL (IJT) | NOT IDENTIFIED IN PREVIOUS SURVEY |
| AIR TRAFFIC CONTROL (ATC) RADAR EVAL TECHNICIANS (IJT) | NOT IDENTIFIED IN PREVIOUS SURVEY |

TABLE 6

AVERAGE PERCENT TIME SPENT ON DUTIES BY DAFSC GROUPS

| DUTIES | 30331A (N=19) | 30331B (N=19) | 30331C (N=14) | 30331D (N=6) | 30331E (N=17) | 30331 (N=104) | 30351 (N=421) | 30371 (N=244) |
|----------------------------------------------------------------------------------------|------------------|------------------|------------------|-----------------|------------------|------------------|------------------|------------------|
| A. ORGANIZING AND PLANNING | * | * | * | * | * | * | 2 | 7 |
| B. DIRECTING AND IMPLEMENTING | * | * | * | * | * | * | 3 | 6 |
| C. INSPECTING AND EVALUATING | * | 1 | 1 | 1 | 2 | 1 | 4 | 15 |
| D. TRAINING | * | * | * | * | * | 1 | 10 | 8 |
| E. PERFORMING ADMINISTRATIVE TASKS | 10 | 9 | 8 | 8 | 4 | 8 | 10 | 13 |
| F. PERFORMING SITE SUPPORT FUNCTIONS | 3 | 7 | 3 | 3 | 5 | 4 | 4 | 3 |
| G. PERFORMING RADAR SYSTEM INSTALLATION AND REMOVAL FUNCTIONS | 1 | 2 | 3 | 2 | 4 | 4 | 4 | 2 |
| H. PERFORMING GENERAL AND PREVENTIVE MAINTENANCE | 11 | 14 | 11 | 8 | 9 | 11 | 8 | 5 |
| I. MAINTAINING AN/GPN-12 ASR SYSTEMS | 3 | 1 | 22 | 34 | * | 8 | 6 | 4 |
| J. MAINTAINING AN/GPN-20/21 ASR SYSTEMS | 18 | 18 | 1 | * | 4 | 12 | 9 | 8 |
| K. MAINTAINING AN/GPN-22 PAR SYSTEMS | 1 | 9 | * | * | * | 4 | 5 | 4 |
| L. MAINTAINING AN/FPN-47 ASR SYSTEMS | * | * | * | * | * | * | * | * |
| M. MAINTAINING AN/FPN-16/61 PAR SYSTEMS | * | * | * | 6 | * | 1 | * | * |
| N. MAINTAINING AN/FPN-62 PAR SYSTEMS | 14 | * | 17 | 5 | * | 6 | 6 | 4 |
| O. MAINTAINING AN/MPN-13/14 ASR, PAR, AND RAPCON (FOR MPN-14) SYSTEMS | 3 | 16 | * | * | 13 | 7 | 3 | 2 |
| P. MAINTAINING AN/TPN-19 ASR, PAR, AND OPS TRAILER SYSTEMS | * | * | * | * | 55 | 9 | 6 | 2 |
| Q. MAINTAINING AN/GPN-25 ASR SYSTEMS | * | 4 | * | * | * | * | * | * |
| R. MAINTAINING AN/GPN-T4 SIMULATOR SYSTEMS | 2 | * | 1 | 2 | * | 1 | 1 | * |
| S. MAINTAINING AN/GPN-T5 SIMULATOR SYSTEMS | * | * | * | * | * | * | * | * |
| T. MAINTAINING AN/GPA-131 VIDEO MAPPER SYSTEMS | 6 | 2 | 5 | 5 | 1 | 4 | 3 | 2 |
| U. MAINTAINING AN/GPA-133 BRITE II SYSTEMS | 9 | 3 | 14 | 8 | * | 6 | 6 | 5 |
| V. MAINTAINING GRC-203 MICROWAVE SYSTEMS | * | * | * | * | * | * | * | * |
| W. MAINTAINING AN/TPX-42 INTERROGATOR SET SYSTEMS | 12 | 5 | 7 | 13 | 2 | 6 | 6 | 5 |
| X. MAINTAINING AUTOMATED RADAR TRANSIT SURVEILLANCE (AKTS III) SYSTEMS | * | * | * | * | * | * | * | * |
| Y. MAINTAINING AN/GSN-12 LANDING CONTROL CENTRALS | * | 4 | 1 | 4 | 1 | 2 | 1 | 1 |
| Z. MAINTAINING PIDP SYSTEMS, INCLUDING OL-211/212 ASR-33 TELETYPE AND INDICATOR GROUPS | 2 | * | 2 | 2 | * | 1 | * | * |

* Less than 1 percent

performed by these personnel include such functions as performance checking, aligning, and troubleshooting ancillary equipment and radar equipment. A more detailed job description for these incumbents is presented in Table 7 showing the representative tasks performed. As expected, the career ladder structure reveals that most 3-skill level personnel perform tasks characteristic of the Air Traffic Control Radar Maintenance Technicians cluster (see Table 8).

As discussed in the introduction, the 3-skill level is divided into 5 shreds based upon radar systems and equipment unique to each group. An examination of Tables 6 and 9 is beneficial in understanding the similarities and differences in task performance between these groups. As mentioned in the preceding paragraph, the common tasks performed at the 3-skill level are those associated with ancillary equipment; however, large portions of their total job time are spent on different duties. For instance, A-shred personnel spend 32 percent of their total job time maintaining AN/GPN-20/21 (ASR) systems and AN/FPN-62 (PAR) systems. These radar systems correspond to those specified for the shred designation. Examination of B-, C-, and D-shred members confirms that personnel spend time maintaining systems corresponding to their shred designation and that this is the typical pattern with one exception. E-shred personnel deviate from this pattern by spending large portions of their time performing tasks on AN/TPN-19 (LCC) systems which do not correspond to their shred designation. These and other distinctions among shreds will be presented later in the Training Analysis section.

DAFSC 30351. The 5-skill level has 421 members representing over half (55 percent) of the sample. With progression from the 3-skill level to the 5-skill level, the percentage of time spent on duties changes somewhat; more time is spent on supervisory, training, and administrative duties and slightly less time is spent performing technically oriented duties (see Table 6). However, the crux of the maintenance production is still performed by these journeyman-level airmen. Typically, the 5-skill level is awarded in approximately 1 year upon meeting upgrade training requirements. At this time, the radar shred designation is dropped and members are issued special experience identifiers (SEI) that list all types of equipment on which they have been qualified. DAFSC 30351 personnel perform an average of 200 tasks which is slightly more than that of the 3-skill level personnel. An examination of the DAFSC distribution across specialty jobs reveals that 5-skill level personnel are also concentrated in the Air Traffic Control Radar Maintenance Technicians cluster as were their subordinates (see Table 8).

Due to the diversity of technical jobs within the career ladder structure, the common tasks (primarily related to ancillary equipment) are performed by an overall higher percentage of members than shown for radar-specific systems. Tasks commonly performed by these personnel include such functions as aligning receiver transmitter groups and video mapper sweep generators, troubleshooting systems down to subassembly levels, inputting maintenance management information and control systems (MMICS) data on computer terminals, conducting OJT, and participating in staff meetings and briefings (see Table 10). Tasks which best distinguish the 5-skill level from their junior counterparts are presented in Table 11. The primary difference is the additional performance of supervisory and training tasks by 5-skill level personnel.

TABLE 7

REPRESENTATIVE TASKS PERFORMED BY DAFSC 30331 PERSONNEL

| TASKS | PERCENT MEMBERS PERFORMING (N=104) |
|---------------------------------------------------------------------------------------------------|---------------------------------------------|
| E151 PREPARE AFTO FORMS 350 (REPARABLE ITEM PROCESSING TAG) | 79 |
| H353 PERFORMANCE CHECK RADAR SYSTEM POWER SUPPLIES | 77 |
| H361 REMOVE MINOR HARDWARE, SUCH AS DIALS, BULBS, AND CLAMPS | 71 |
| H307 ALIGN RADAR SYSTEM POWER SUPPLIES | 68 |
| W1532 PERFORM AN/TPX-42 TURN-ON OR TURN-OFF PROCEDURES | 52 |
| T1442 PERFORMANCE CHECK AN/GPA-131 VIDEO MAPPER SUBASSEMBLIES, SUCH AS PCC | 50 |
| T1435 ALIGN AN/GPA-131 VIDEO MAPPER VIDEO BIAS AND FOCUS CIRCUITS | 50 |
| T1444 REMOVE AN/GPA-131 VIDEO MAPPER ASSEMBLIES, SUCH AS VIDEO CONVERTERS | 47 |
| T1447 TROUBLESHOOT AN/GPA-131 VIDEO MAPPER SYSTEMS TO ASSEMBLY LEVEL, SUCH AS VIDEO CONVERTERS | 47 |
| U1476 PERFORMANCE CHECK AN/GPA-133 CAMERAS | 46 |
| W1516 ALIGN AN/TPX-42 RECEIVER TRANSMITTER GROUPS | 44 |
| H322 FABRICATE TEST CABLES | 41 |
| H331 INSTALL CRIMPED WIRING TERMINALS | 39 |
| E129 PREPARE AF FORMS 2413 (SUPPLY CONTROL LOG) | 38 |
| U1470 INSTALL AN/GPA-133 BRITE II SUBASSEMBLIES, SUCH AS PRINTED CIRCUIT CARDS (PCC) | 38 |
| U1489 TROUBLESHOOT AN/GPA-133 BRITE II ASSEMBLIES TO SUBASSEMBLY LEVEL, SUCH AS PCC | 37 |
| H356 PREPARE EQUIPMENT FOR PRECISION MEASUREMENT EQUIPMENT LABORATORY (PMEL) PROCESSING | 36 |
| U1460 ALIGN AN/GPA-133 PRETRIGGER RANGING MARK, RANGING, AND OFF SCREEN BLANK CIRCUITS | 34 |
| J567 PERFORMANCE CHECK AN/GPN-20/21 TRANSMITTER POWER LEVELS | 33 |
| J475 ALIGN AN/GPN-20/21 AUTOMATIC FREQUENCY CONTROLS (AFC) | 32 |
| J566 PERFORMANCE CHECK AN/GPN-20/21 TRANSMITTER FREQUENCIES | 32 |
| W1527 INSTALL AN/TPX-42 TRANSMITTER RECEIVER UNITS | 31 |

TABLE 8
DISTRIBUTION OF DAFSC PERSONNEL ACROSS SPECIALTY JOBS
(NUMBER RESPONDING)

| <u>JOB TITLE</u> | <u>30331</u> <u>(N=104)</u> | <u>30351</u> <u>(N=421)</u> | <u>30371</u> <u>(N=244)</u> |
|----------------------------------------------------------|--------------------------------|--------------------------------|--------------------------------|
| ATC RADAR MAINTENANCE TECHNICIANS CLUSTER (GRP059) | 51 | 212 | 103 |
| RADAR MAINTENANCE SUPERVISORY PERSONNEL CLUSTER (GRP053) | 0 | 4 | 30 |
| AN/MPN-13/14 RADAR MAINTENANCE PERSONNEL (GRP120) | 11 | 24 | 11 |
| ATC RADAR EVALUATION TECHNICIANS (GRP139) | 0 | 2 | 3 |
| ELECTRONICS INSTALLATION PERSONNEL CLUSTER (GRP029) | 4 | 29 | 2 |
| AN/TPN-19 RADAR SYSTEMS MAINTENANCE PERSONNEL (GRP118) | 11 | 37 | 9 |
| AN/GPN-12 SPECIAL TRAINING INSTRUCTORS (GRP114) | 1 | 3 | 1 |
| MAINTENANCE STAFF SUPPORT CLUSTER (GRP015) | 1 | 24 | 52 |
| ATC RADAR MAINTENANCE TRAINING CLUSTER (GRP074) | 1 | 48 | 11 |
| NOT GROUPED | 24 | 38 | 22 |

TABLE 9

EQUIPMENT USED BY DAFSC 30331A/B/C/D/E MEMBERS
(PERCENT MEMBERS USING)

| <u>EQUIPMENT</u> | <u>A</u> | <u>B</u> | <u>C</u> | <u>D</u> | <u>E</u> |
|-----------------------|----------|----------|----------|----------|----------|
| **AN/GPN-12 ASR | 11 | 16 | 64 | 83 | * |
| **AN/GPN-20/21 ASR | 53 | 53 | 14 | * | 6 |
| AN/GPN-22 PAR | 5 | 47 | * | 17 | * |
| AN/FPN-16/61 | 11 | 11 | * | 17 | * |
| AN/FPN-62 | 68 | * | 71 | 17 | 6 |
| AN/TPN-19 | * | 5 | * | * | 35 |
| AN/GPN-25 | * | 11 | * | * | 6 |
| **AN/GPA-131 | 90 | 58 | 71 | 83 | 35 |
| **AN/GPA-133 | 74 | 68 | 86 | 83 | * |
| **AN/GPN-T4 | 74 | 42 | 71 | 83 | * |
| AN/GPN-T5 | 16 | 21 | 29 | * | * |
| AN/TPX-42 | 84 | 84 | 71 | 100 | 24 |
| AN/GSN-12 | 42 | 47 | 29 | 50 | 6 |
| AN/MPN-13A | * | 26 | * | * | * |
| AN/MPN-13E LCC | * | 5 | * | * | * |
| AN/MPN-14E MOB RAPCON | * | 5 | * | * | 6 |
| AN/MPN-14G | 5 | * | * | * | 12 |
| **PIDP | 63 | 21 | 71 | 83 | * |

* Less than 1 percent

** Also used by 30 percent or better 1st En1 Group

TABLE 10

REPRESENTATIVE TASKS PERFORMED BY DAFSC 30351 PERSONNEL

| TASKS | PERCENT MEMBERS PERFORMING |
|-----------------------------------------------------------------------------------------------------|----------------------------|
| E150 PREPARE AFTO FORMS 349 (MAINTENANCE DATA COLLECTION RECORD) | 65 |
| H307 ALIGN RADAR SYSTEM POWER SUPPLIES | 63 |
| E158 PREPARE DD FORMS 1577-2 (UNSERVICEABLE (REPARABLE) TAG MATERIEL) | 57 |
| T1447 TROUBLESHOOT AN/GPA-131 VIDEO MAPPER SYSTEMS TO ASSEMBLY LEVEL, SUCH AS VIDEO CONVERTERS | 55 |
| W1532 PERFORM AN/TPX-42 TURN-ON OR TURN-OFF PROCEDURES | 54 |
| E142 PREPARE AFCC FORMS 142 (NOT REPARABLE THIS STATION (NRTS) VALIDATION) | 54 |
| T1448 TROUBLESHOOT AN/GPA-131 VIDEO MAPPER SYSTEMS TO SUBASSEMBLY LEVEL, SUCH AS PCC | 53 |
| W1516 ALIGN AN/TPX-42 RECEIVER TRANSMITTER GROUPS | 52 |
| H339 LUBRICATE MECHANICAL BEARING SURFACES, SUCH AS ANTENNA ROTARY JOINTS | 51 |
| T1434 ALIGN AN/GPA-131 VIDEO MAPPER SWEEP GENERATORS | 50 |
| D81 CONDUCT OJT | 49 |
| D96 MAINTAIN TRAINING RECORDS | 49 |
| W1537 PERFORMANCE CHECK AN/TPX-42 INDICATOR GROUPS | 45 |
| H369 TROUBLESHOOT RADAR SYSTEM POWER SUPPLIES TO SUBASSEMBLY LEVEL | 45 |
| U1490 TROUBLESHOOT AN/GPA-133 BRITE II SYSTEMS TO ASSEMBLY LEVEL, SUCH AS CONRAC MONITORS | 44 |
| B31 ORIENT NEWLY ASSIGNED PERSONNEL | 43 |
| H365 RESEARCH TECHNICAL PUBLICATIONS | 43 |
| A12 PARTICIPATE IN MEETINGS, SUCH AS STAFF MEETINGS, BRIEFINGS, CONFERENCES, OR WORKSHOPS | 43 |
| W1531 PERFORM AN/TPX-42 SIDELobe SUPPRESSION CHECKS | 42 |
| H356 PREPARE EQUIPMENT FOR PRECISION MEASUREMENT EQUIPMENT LABORATORY (PMEL) PROCESSING | 40 |
| B34 SUPERVISE APPRENTICE AIR TRAFFIC CONTROL RADAR SPECIALISTS (AFSC 30331) | 39 |
| U1471 INSTALL AN/GPA-133 COMPONENTS, SUCH AS RESISTORS AND CAPACITORS | 36 |
| H360 REMOVE CRIMPED WIRING TERMINALS | 35 |
| E109 INPUT MAINTENANCE MANAGEMENT INFORMATION AND CONTROL SYSTEM (MMICS) DATA ON COMPUTER TERMINALS | 33 |
| T1433 ALIGN AN/GPA-131 VIDEO MAPPER SINE/COSINE CONVERTERS (TYPE I) | 33 |
| C52 EVALUATE PERSONNEL FOR COMPLIANCE WITH PERFORMANCE STANDARDS | 30 |

TABLE 11

TASKS WHICH BEST DIFFERENTIATE BETWEEN
3-SKILL LEVEL AND 5-SKILL PERSONNEL
(PERCENT MEMBERS PERFORMING)

| TASKS | DAFSC 30331 (N=104) | DAFSC 30351 (N=421) | DIFF |
|------------------------------------------------------------------------------------------------------------|---------------------------|---------------------------|------|
| H332 INSTALL MINOR HARDWARE, SUCH AS DIALS, BULBS, AND CLAMPS | 75 | 59 | 16 |
| E151 PREPARE AFTO FORMS 350 (REPARABLE ITEM PROCESSING TAG) | 79 | 65 | 14 |
| H361 REMOVE MINOR HARDWARE, SUCH AS DIALS, BULBS, AND CLAMPS | 71 | 58 | 13 |
| H353 PERFORMANCE CHECK RADAR SYSTEM POWER SUPPLIES | 77 | 64 | 13 |
| | | | |
| B34 SUPERVISE APPRENTICE AIR TRAFFIC CONTROL RADAR SPECIALISTS (AFSC 30331) | 3 | 39 | -36 |
| C74 WRITE APR | 1 | 34 | -33 |
| B31 ORIENT NEWLY ASSIGNED PERSONNEL | 11 | 43 | -32 |
| C52 EVALUATE PERSONNEL FOR COMPLIANCE WITH PERFORMANCE STANDARDS | 1 | 30 | -29 |
| B32 SUPERVISE AIR TRAFFIC CONTROL RADAR SPECIALISTS (AFSC 30351) | 1 | 27 | -26 |
| A17 PLAN WORK ASSIGNMENTS | 1 | 26 | -25 |
| D79 ADMINISTER TESTS | 1 | 24 | -23 |
| E174 UPDATE AF FORMS 1800 (OPERATOR'S INSPECTION GUIDE AND TROUBLE REPORT (GENERAL PURPOSE VEHICLE)) | 16 | 39 | -23 |
| C38 CERTIFY STATUS OF PARTS, SUCH AS REPARABLE, SERVICEABLE, OR CONDEMNED | 20 | 43 | -23 |
| D88 DEVELOP TRAINING AIDS | 1 | 23 | -22 |
| D96 MAINTAIN TRAINING RECORDS | 27 | 49 | -22 |
| E116 MAINTAIN STATUS INDICATORS, SUCH AS BOARDS, GRAPHS, OR CHARTS | 13 | 35 | -22 |
| D99 SCORE TESTS | 1 | 22 | -21 |
| D97 PREPARE LESSON PLANS | 1 | 22 | -21 |
| E109 INPUT MAINTENANCE MANAGEMENT INFORMATION AND CONTROL SYSTEM (MMICS) DATA ON COMPUTER TERMINALS | 13 | 33 | -20 |
| C47 EVALUATE MAINTENANCE DATA COLLECTION REPORTS | 4 | 24 | -20 |

DAFSC 30371. Seven-skill level personnel take on a more diverse role, dividing their time evenly between technical and supervisory tasks. With an average of 223 tasks performed, these members cover a wider range of tasks than 3- or 5-skill level members. As illustrated in Table 6, 7-skill level members spend approximately one-half (49 percent) of their job time on supervisory duties; and yet, 7-skill level personnel still perform a highly technical job. An examination of representative tasks performed by DAFSC 30371 personnel (see Table 12) reveals these incumbents typically perform such tasks as counseling personnel on personal or military-related matters, preparing APRs, performance checking video mapper subassemblies, and aligning horizontal deflectors. Of these 244 members (32 percent of sample), the largest concentration in any one job is again in the Air Traffic Control Radar Maintenance Technicians cluster. Table 13 provides those tasks which distinguish between these members and 5-skill level personnel. As expected, the key difference reflects a greater emphasis on supervisory tasks for 7-skill level personnel.

Summary

A wide variety of jobs are performed by personnel in this career ladder. Three-skill level personnel are primarily technicians, spending a majority of their time on general and preventive radar maintenance duties. With advancement to the 5-skill level, personnel still perform a primarily technical job, including some supervisory functions which account for 29 percent of their time. Seven-skill level personnel equally divide their time between radar maintenance and supervisory type duties. Overall, the vast majority of personnel across skill level groups in this AFSC performs a highly technical job, which accounts for the heaviest concentration of incumbents in the Air Traffic Control Radar Maintenance Technicians cluster.

COMPARISON OF SURVEY DATA TO AFR 39-1 SPECIALTY DESCRIPTIONS

Survey data for the 303X1 career ladder were compared to the AFR 39-1 Specialty Descriptions for DAFSCs 30331 and 30351, dated 31 October 1982, and DAFSC 30371, dated 1 January 1982. These portrayals are provided to give a broad overview of the duties and responsibilities required at the various skill levels. These DAFSC descriptions closely parallel those described in AFR 39-1, which provides a clear and concise overview of the major duties and tasks performed by 303X1 personnel. However, career ladder utilization of members in the 5 shreds may not be in accordance with paragraph 4 of AFR 39-1, dated 31 October 1982, which pertains to DAFSC specialty shredouts authorized at the 1- and 3-skill levels (see Further Analysis of DAFSC 30331 Shreds section).

TABLE 12

REPRESENTATIVE TASKS PERFORMED BY DAFSC 30371 PERSONNEL

| TASKS | PERCENT MEMBERS PERFORMING |
|----------------------------------------------------------------------------------------------------|----------------------------|
| A12 PARTICIPATE IN MEETINGS, SUCH AS STAFF MEETINGS BRIEFINGS, CONFERENCES, OR WORKSHOPS | 76 |
| B25 COUNSEL PERSONNEL ON PERSONAL OR MILITARY-RELATED MATTERS | 72 |
| C74 WRITE APR | 69 |
| E111 MAINTAIN FILES | 61 |
| C52 EVALUATE PERSONNEL FOR COMPLIANCE WITH PERFORMANCE STANDARDS | 59 |
| E150 PREPARE AFTO FORMS 349 (MAINTENANCE DATA COLLECTION RECORD) | 57 |
| C68 PERFORM EQUIPMENT INSPECTIONS | 57 |
| E129 PREPARE AF FORMS 2413 (SUPPLY CONTROL LOG) | 55 |
| A8 DEVELOP WORK PROCEDURES | 53 |
| WT516 ALIGN AN/TPX-42 RECEIVER TRANSMITTER GROUPS | 52 |
| E175 VERIFY DUE IN FROM MAINTENANCE (DIFM) DOCUMENT LISTINGS | 50 |
| T1442 PERFORMANCE CHECK AN/GPA-131 VIDEO MAPPER SUBASSEMBLIES, SUCH AS PCC | 49 |
| T1448 TROUBLESHOOT AN/GPA-131 VIDEO MAPPER SYSTEMS TO SUBASSEMBLY LEVEL, SUCH AS PCC | 49 |
| I432 ALIGN AN/GPA-131 VIDEO MAPPER DEFLECTION AMPLIFIERS | 48 |
| C46 EVALUATE INSPECTION REPORTS | 48 |
| D85 DETERMINE OJT REQUIREMENTS | 47 |
| U1456 ALIGN AN/GPA-133 IP-1017 HORIZONTAL DEFLECTORS | 45 |
| U1477 PERFORMANCE CHECK AN/GPA-133 CONAC MONITORS | 45 |
| F194 ISSUE LOCAL JOB CONTROL NUMBERS | 43 |
| B33 SUPERVISE AIR TRAFFIC CONTROL RADAR TECHNICIANS (AFSC 30371) | 43 |
| A19 PREPARE BRIEFINGS | 39 |
| D94 EVALUATE TRAINING METHODS | 37 |
| C53 EVALUATE PROPERTY ITEM PROCEDURES, SUCH AS STORAGE, INVENTORY, OR INSPECTION OF PROPERTY ITEMS | 34 |
| A23 WRITE JOB DESCRIPTIONS | 34 |
| B26 DRAFT DIRECTIVES, SUCH AS LOCAL POLICY OR HIGH HEADQUARTERS DIRECTIVES | 31 |
| D88 DEVELOP TRAINING AIDS | 31 |

TABLE 13

TASKS WHICH BEST DIFFERENTIATE BETWEEN 5- AND 7-SKILL PERSONNEL
(PERCENT MEMBERS PERFORMING)

| TASKS | DAFSC 30351 (N=421) | DAFSC 30371 (N=244) | DIFF |
|--------------------------------------------------------------------------------------|---------------------------|---------------------------|------|
| F198 PERFORM AREA BEAUTIFICATION DUTIES, SUCH AS CUTTING GRASS OR PICKING UP AREA | 62 | 43 | 19 |
| G272 LOAD EQUIPMENT ON TRUCKS | 24 | 9 | 14 |
| G258 INSTALL OBSTRUCTION LIGHTS | 22 | 8 | 14 |
| G236 DRIVE TO OR FROM OPERATING LOCATIONS | 38 | 25 | 13 |
| G288 REMOVE OBSTRUCTION LIGHTS | 19 | 7 | 12 |
| F185 CONNECT PRIMARY POWER TO RADAR SYSTEMS | 20 | 8 | 12 |
| G300 UNLOAD EQUIPMENT FROM TRUCKS | 20 | 9 | 11 |
| C73 REVIEW CORRESPONDENCE | 10 | 65 | -55 |
| B37 WRITE CORRESPONDENCE | 23 | 70 | -47 |
| C78 WRITE REPLIES TO INSPECTION REPORTS | 14 | 57 | -43 |
| C77 WRITE RECOMMENDATIONS FOR AWARDS OR DECORATIONS | 14 | 57 | -43 |
| A1 DETERMINE REQUIREMENTS FOR PERSONNEL | 14 | 54 | -40 |
| B33 SUPERVISE AIR TRAFFIC CONTROL RADAR TECHNICIANS (AFSC 30371) | 5 | 43 | -38 |
| E111 MAINTAIN FILES | 23 | 61 | -38 |
| C44 EVALUATE INDIVIDUALS FOR RECOGNITION | 18 | 55 | -37 |
| C61 INDORSE AIRMAN PERFORMANCE REPORTS (APR) | 10 | 47 | -37 |
| A11 ESTABLISH WORK SCHEDULES | 22 | 57 | -35 |
| C46 EVALUATE INSPECTION REPORTS | 12 | 48 | -36 |
| E140 PREPARE AF FORMS 601 (EQUIPMENT ACTION REQUEST) | 9 | 44 | -35 |
| E178 VERIFY PRIORITY MONITOR REPORTS (D-18) | 18 | 52 | -34 |

ANALYSIS OF CONUS VERSUS OVERSEAS GROUPS

Comparisons were made between the tasks performed and the background data for DAFSC 30351 personnel assigned to the continental United States (CONUS, N=334) versus those assigned overseas (N=80). An examination of the tasks and duties performed by the two groups indicates minor differences in equipment maintained and number of tasks performed. CONUS personnel typically support a radar configuration consisting of a AN/GPN-12 (ASR) and the AN/GPN-20/21 (ASR) systems. The AN/GPN-12 systems are used Air Force wide, but are especially used at UPT bases which are solely CONUS located. On the other hand, overseas personnel typically maintain the AN/GPN-20/21 and the AN/GPN-22 (PAR) systems. This configuration is more efficient than the former in penetrating inclement weather conditions and unusual terrain encountered at overseas bases. The greatest difference between these two groups was found in the maintenance of the AN/GPN-22 PAR systems, with a majority of overseas members but few CONUS personnel performing tasks on this system. Similarly, differences were found in maintaining AN/GPN-62 (PAR) systems. Approximately one-third of CONUS personnel were found maintaining this system as opposed to few overseas members.

A review of the average number of tasks performed by these 2 groups indicates that overseas personnel tend to perform more tasks (256 tasks) than their CONUS counterparts (187 tasks). Comparisons of general background data reveal slight differences in characteristics between the two groups. Job satisfaction indicators of job interest and perceived utilization of talents and training were also highly similar.

TRAINING ANALYSIS

Occupational survey data are one of the many sources of information that can be used as a guide in developing training programs for first-termers. Information gathered from the following factors used in conjunction may be helpful in evaluating current training: (1) the overall description of the job being performed by first-enlistment personnel and their distribution across specialty jobs, (2) percentages of members performing specific tasks or maintaining certain systems or equipment across the five 3-skill level shreds, and (3) training emphasis and task difficulty ratings. Training emphasis (TE) ratings provided by career ladder subject-matter experts yielded an average rating of 1.67, with a standard deviation of 1.39. Hence, tasks having a rating of 3.06 (average TE + 1 standard deviation) or better are considered highly recommended for some method of structured training. Task difficulty ratings were adjusted to an average of 5.00 and a standard deviation of 1.00. (NOTE: Use caution in adhering to strict applications of task difficulty ratings due to the absence of ratings on 229 inventory tasks contained in Duties Q (Maintaining AN/GPN-25 ASR Systems), R (Maintaining AN/GPN-T4 Simulator Systems), V (Maintaining GRC-203 Microwave Systems), and X (Maintaining Automated Radar Transit Surveillance (ARTS III) Systems)). Tasks with ratings of 3.00 or better are perceived as difficult enough to warrant centralized

training. (For a complete discussion of TE and TD please refer back to the Task Factor Administration section of this report.)

Tables 14 and 15, respectively, list representative tasks upon which subject-matter experts agree require some form of structured training for first-termers and are the most difficult for an average airman to learn to perform proficiently. As Table 14 portrays, the majority of tasks rated highest in training emphasis pertain to maintenance functions on associated or ancillary radar equipment, such as the AN/GPA-133/131 or the AN/TPX-42. In addition, these tasks are performed by substantial percentages of first-enlistment personnel. On the other hand, tasks rated highest in difficulty (Table 15) relate to supervisory functions and maintenance on ASR/PAR specific systems, such as the AN/FPN-62, and AN/GPN-25, and, overall are performed by very low percentages of first-termers. These findings coincide with the data presented in the section on ANALYSIS of DAFSC GRCUPS, which revealed larger percentages of 3- and 5-skill level members performing tasks related to maintaining ancillary equipment. While reviewing this section of the report, note that tasks receiving high ratings on both task factors accompanied by moderate to high percentages of members performing (30 percent or better) in the first-enlistment group or across shreds may warrant inclusion in one of the basic courses. Training decisions such as these are not only weighed against these three factors, but also take into account command concerns, the criticality of the task to readiness, contingency planning, and safety standards.

To facilitate in the evaluation of the AFSC 303X1 Specialty Training Standard (STS) and Plan(s) of Instruction (POI), technical school personnel at Keesler Technical Training Center matched job inventory tasks to appropriate sections of the STS and POIs for each ABR course corresponding to the designated shred. It was these matchings upon which comparisons to the training documents were based. It should be noted that comments and tables presented in this section pertaining to questionable elements (or lack of elements) in the training documents are intended to highlight what appear to be problem areas. A complete computer listing displaying percent members performing tasks, training emphasis, and task difficulty ratings for each task, along with STS and POI matchings, has been forwarded to the technical school for its use in further detailed reviews of training documents. Summaries of that data and information are given below, preceded by an analysis of the nature of jobs performed by the target population. (first-enlistment personnel, usually) of entry-level training programs. In addition, a detailed analysis of work performed across the five shreds at the 3-skill level is essential in the assessment of ABR training for this career ladder.

Analysis of First-Enlistment Personnel

First-enlistment personnel (1-48 months TAFMS) number 288 in this survey, or 37 percent of the total sample. Of this number, 35 percent indicate they hold the 3-skill level DAFSC and 65 percent have the 5-skill level. Consequently, the vast majority (52 percent) of these first-termers perform the job as described for Air Traffic Control Radar Maintenance Technicians Cluster. The distribution of group members across specialty jobs is displayed in Figure 2. The large percentage of first-termers functioning within the above cluster

TABLE 14

EXAMPLES OF TASKS RATED HIGHEST IN TRAINING EMPHASIS FOR 303X1 PERSONNEL
(1SD OR HIGHER ABOVE AVERAGE)

| TASKS | TRNG EMPH* | PERCENT PERFORMING | | TASK DIFF** |
|------------------------------------------------------------------------------------------------|---------------|-----------------------|--------------------|----------------|
| | | 1ST JOB (N=79) | 1ST ENL (N=288) | |
| W1516 ALIGN AN/TPX-42 RECEIVER TRANSMITTER GROUPS | 6.20 | 37 | 50 | 5.92 |
| U1476 PERFORMANCE CHECK AN/GPA-133 CAMERAS | 5.89 | 41 | 52 | 5.19 |
| H348 PERFORM HIGH RELIABILITY SOLDERING | 5.84 | 32 | 49 | 6.62 |
| T1434 ALIGN AN/GPA-131 VIDEO MAPPER SWEEP GENERATORS | 5.67 | 33 | 50 | 5.09 |
| T1432 ALIGN AN/GPA-131 VIDEO MAPPER DEFLECTION AMPLIFIERS | 5.63 | 39 | 52 | 5.31 |
| U1458 ALIGN AN/GPA-133 IP-1017 VERTICAL DEFLECTORS | 5.61 | 23 | 40 | 5.89 |
| W1563 TROUBLESHOOT AN/TPX-42 RECEIVER TRANSMITTER GROUPS TO PCC LEVEL | 5.59 | 25 | 46 | 6.35 |
| T1441 PERFORMANCE CHECK AN/GPA-131 VIDEO MAPPER ASSEMBLIES, SUCH AS VIDEO CONVERTERS | | | | |
| U1489 TROUBLESHOOT AN/GPA-133 BRITE II ASSEMBLIES TO SUBASSEMBLY LEVEL, SUCH AS PCC | 5.50 | 48 | 56 | 4.57 |
| U1480 PERFORMANCE CHECK AN/GPA-133 TVA | 5.48 | 29 | 46 | 6.49 |
| T1447 TROUBLESHOOT AN/GPA-131 VIDEO MAPPER SYSTEMS TO ASSEMBLY LEVEL, SUCH AS VIDEO CONVERTERS | 5.40 | 35 | 41 | 4.58 |
| U1477 PERFORMANCE CHECK AN/GPA-133 CONRAC MONITORS | 5.40 | 42 | 58 | 5.06 |
| W1541 PERFORMANCE CHECK AN/TPX-42 RANGE AZIMUTH BEACON MONITOR (RABM) TRANSPONDER SETS | 5.39 | 35 | 46 | 4.83 |
| W1537 PERFORMANCE CHECK AN/TPX-42 INDICATOR GROUPS | 5.26 | 32 | 45 | 5.37 |
| U1463 ALIGN AN/GPA-133 SYNCHRONIZER PULSE CIRCUITS | 5.22 | 30 | 44 | 5.32 |
| J567 PERFORMANCE CHECK AN/GPN-20/21 TRANSMITTER POWER LEVELS | 5.21 | 14 | 31 | 5.10 |
| W1559 TROUBLESHOOT AN/TPX-42 INDICATOR GROUPS TO PCC LEVEL | 4.92 | 32 | 32 | 4.13 |
| W1539 PERFORMANCE CHECK AN/TPX-42 INTERFERENCE BLANKERS | 4.92 | 29 | 43 | 6.44 |
| W1535 PERFORMANCE CHECK AN/TPX-42 CODER SYNCHRONIZERS | 4.92 | 27 | 40 | 4.97 |
| J545 PERFORMANCE CHECK AN/GPN-20/21 MTI VIDEO GAIN LEVELS | 4.89 | 20 | 37 | 4.87 |
| H307 ALIGN RADAR SYSTEM POWER SUPPLIES | 4.74 | 23 | 28 | 5.11 |
| | 4.73 | 66 | 72 | 3.93 |

* Average Training Emphasis = 1.67 with SD of 1.39

** Average Task Difficulty = 5.00 with SD of 1.00

TABLE 15

TASKS RATED HIGHEST IN DIFFICULTY FOR 303X1 PERSONNEL
(1SD OR HIGHER ABOVE AVERAGE)

| TASKS | TASK DIFF* | TRNG EMPH** | PERCENT 1ST ENL PERFORMING (N=288) |
|------------------------------------------------------------------------------------|---------------|----------------|---------------------------------------------|
| Q1271 ALIGN AN/GPN-25 PROCESSOR RANGE AZIMUTH GATING (RAG) PROGRAMMING CIRCUITS | 8.93 | 0.54 | - |
| B35 SUPERVISE CIVILIAN PERSONNEL | 7.92 | 0.16 | 2 |
| N834 ALIGN AN/FPN-62 REMOTING SYSTEMS | 7.85 | 4.47 | 22 |
| G298 SURVEY SITE RADAR LOCATIONS | 7.78 | 0.64 | 3 |
| K702 TROUBLESHOOT AN/GPN-22 TDC FROM MODULE TO PCC LEVEL | 7.62 | 2.54 | 9 |
| Q1249 ALIGN AN/GPN-25 ANTENNA PULSE GENERATOR (APG) ENCODERS | 7.58 | 0.54 | 1 |
| Q1251 ALIGN AN/GPN-25 PERFORMANCE MONITOR OUTPUTS | 7.58 | 0.54 | 1 |
| R1409 INSTALL AN/GPN-T4 SYSTEMS | 7.56 | 1.06 | 6 |
| Q1285 ALIGN AN/GPN-25 TRANSMITTER KLYSTRON FILAMENT REGULATORS | 7.54 | 0.54 | - |
| H340 MAINTAIN NAVIGATION AID EQUIPMENT | 7.35 | 1.10 | 5 |
| P1085 ALIGN AN/TPN-19 PAR TRANSMITTER RECEIVER SPLIT PULSE TIMING CIRCUITS | 7.30 | 0.86 | 13 |
| I462 TROUBLESHOOT AN/GPN-12 PPC TO DISCRETE COMPONENT LEVEL | 7.29 | 2.11 | 8 |
| F197 MEASURE EARTH CURVATURE CORRECTIONS | 7.20 | 0.39 | 1 |
| K703 TROUBLESHOOT AN/GPN-22 TDC TO SUBASSEMBLY LEVEL, SUCH AS MODULES | 7.12 | 2.62 | 10 |
| H349 PERFORM MICROMINIATURE SOLDERING | 7.11 | 3.94 | 16 |
| W1565 TROUBLESHOOT AN/TPX-42 VDP TO PCC LEVEL | 7.08 | 4.22 | 25 |
| C74 WRITE APR | 6.96 | 2.12 | 6 |
| P1245 TROUBLESHOOT AN/TPN-19 PAR ANTENNA GROUPS TO SUBASSEMBLY LEVEL | 6.88 | 1.00 | 8 |
| M752 ALIGN PHASING OF AN/FPN-16/61 ANTENNAS | 6.81 | 1.21 | 4 |
| H347 PERFORM DEPOT LEVEL MODIFICATIONS | 6.78 | 1.52 | 7 |
| N879 TROUBLESHOOT AN/FPN-62 REMOTING SYSTEMS TO SUBASSEMBLY LEVEL, SUCH AS PCC | 6.76 | 4.02 | 24 |
| O917 INSTALL AN/MPN-14 COMMUNICATIONS SYSTEMS | 6.75 | 1.80 | 3 |
| N826 ALIGN AN/FPN-62 ELEVATION ANTENNA TIE BAR FREQUENCIES | 6.73 | 2.64 | 9 |
| W1558 TROUBLESHOOT AN/TPX-42 IDP TO PCC LEVEL | 6.71 | 4.28 | 23 |
| H348 PERFORM HIGH RELIABILITY SOLDERING | 6.62 | 5.84 | 49 |
| W1562 TROUBLESHOOT AN/TPX-42 RABM TRANSPONDER SETS TO PCC LEVEL | 6.56 | 4.79 | 35 |

- Less than 1 percent

* Average Task Difficulty = 5.00 with SD of 1.00

** Average Training Emphasis = 1.67 with SD of 1.39

**DISTRIBUTION OF 303X1 FIRST-ENLISTMENT PERSONNEL
ACROSS SPECIALTY JOBS
(N=288)**

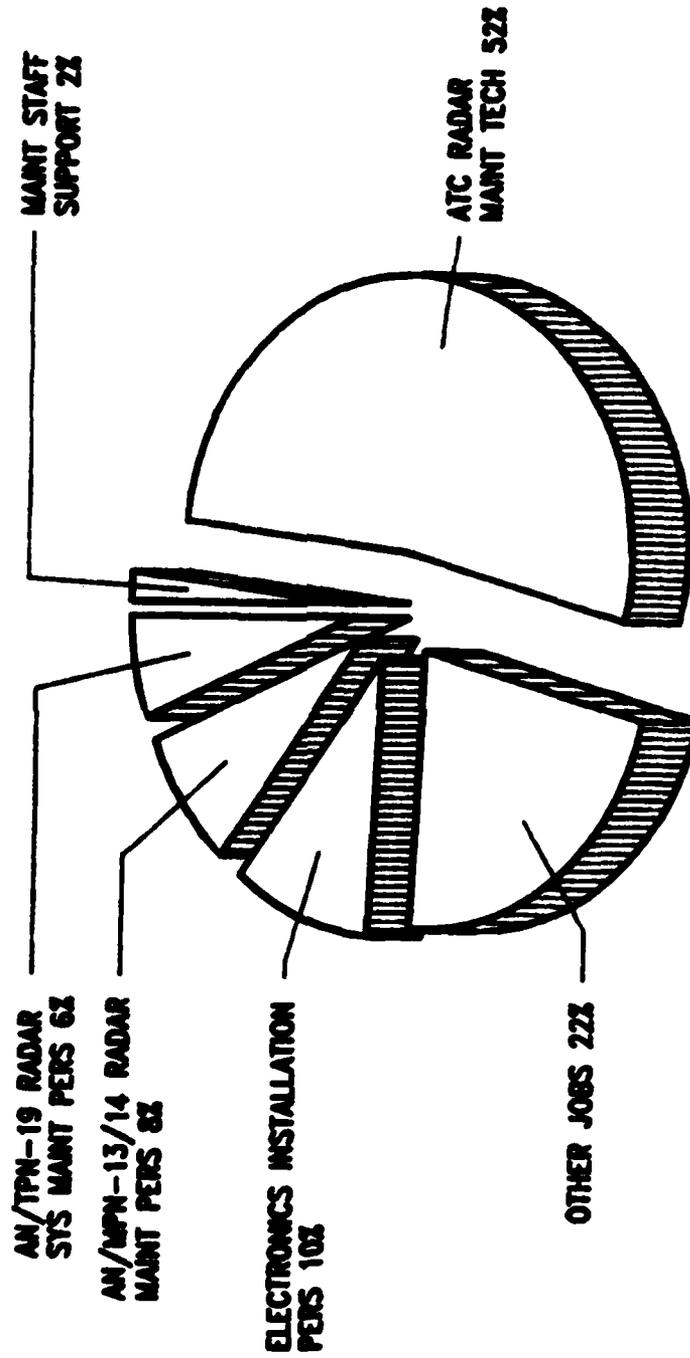


Figure 2

almost parallels the total sample. The single job within this cluster containing the heaviest concentration (43 percent) of first-termers was identified as ASR Maintenance Technicians. Similar to other 303X1 personnel performing this job, substantial percentages of these first-termers spend the largest amount of their job time maintaining AN/GPN-20/21 ASR systems. While they perform 204 tasks on the average, samples of tasks performed by the greatest percentages of these junior airmen are displayed in Table 16.

In addition, high percentages spend relatively large amounts of time performing general and preventive maintenance on ancillary radar equipment, such as AN/TPX-42 interrogator sets and AN/GPA-131 video mapper units. The highly technical nature of the first-termers' job is revealed by the fact that only 3 percent of their job time involves supervisory or managerial functions, such as those in duties A, B, or C.

Further Analysis Of DAFSC 30331 Shreds

The concept of channelized maintenance training for AFSC 303X1 was initially proposed during a Utilization and Training Workshop held in March 1978. Approval to meet the training requirements based upon the five shreds was set forth in AFR 39-1, 31 October 1981. These shreds at the 3-skill level correspond to the radar equipment combinations possible at various sites comprising AN/GPN-12/20 ASRs, AN/GPN-22 and AN/FPN-62 PARs, and AN/NPN-14 ASR/PAR configurations. Because the current ABR training conforms to this channelization method, an in-depth review of similarities and differences in task performance across the five 3-skill level shreds is essential in the assessment of those training programs. While Table 17 lists those radar systems on which members of the various shreds receive ABR training, Table 9 (see ANALYSIS OF DAFSC GROUPS section) lists the primary radar systems and associated equipment actually maintained by members assigned to the various shreds. (Note: In addition to the following section, other information regarding 3-skill level members may be obtained from the prior DAFSC Analysis section in this report. Refer to Appendix C for a listing of representative tasks for each shred described below.)

DAFSC 30331A. Nineteen 3-skill level members indicated holding an "A" suffix. The heaviest concentration of their overall job time is spent performing Duties J (Maintaining AN/GPN-20/21 ASR) and N (Maintaining AN/FPN-62 PAR) as shown in Table 6 in the ANALYSIS OF DAFSC GROUPS section. However, the largest percentages of members within this shred perform tasks relating to maintenance of ancillary radar equipment, such as GPA-131 video mappers and TPX-42 interrogator sets as shown in Table 9. They perform 222 tasks, on the average, with 132 tasks comprising 50 percent of their job time. Ninety-five percent of these incumbents indicate they did complete the basic training Course E3ABR30331A-001, corresponding to radar equipment they currently maintain.

DAFSC 30331B. Members within the "B" shred have less total active federal military service (TAFMS) time (average of 21 months) than any other shred, and perform fewer tasks (160) on the average. On the other hand, these airmen spend more time maintaining AN/GPN-22 PAR systems than any other 3-skill level

TABLE 16

REPRESENTATIVE TASKS PERFORMED BY FIRST-ENLISTMENT GROUP

| TASKS | PERCENT MEMBERS PERFORMING |
|------------------------------------------------------------------------------------------------|----------------------------------|
| E150 PREPARE AFTO FORMS 349 (MAINTENANCE DATA COLLECTION RECORD) | 76 |
| H332 INSTALL MINOR HARDWARE, SUCH AS DIALS, BULBS, AND CLAMPS | 76 |
| H353 PERFORMANCE CHECK RADAR SYSTEM POWER SUPPLIES | 75 |
| H361 REMOVE MINOR HARDWARE, SUCH AS DIALS, BULBS, AND CLAMPS | 75 |
| H345 PERFORM CORROSION CONTROL ON EQUIPMENT RACKS | 65 |
| W1532 PERFORM AN/TPX-42 TURN-ON OR TURN-OFF PROCEDURES | 58 |
| T1447 TROUBLESHOOT AN/GPA-131 VIDEO MAPPER SYSTEMS TO ASSEMBLY LEVEL, SUCH AS VIDEO CONVERTERS | 58 |
| E158 PREPARE DD FORMS 1577-2 (UNSERVICEABLE (REPARABLE) TAG MATERIEL) | 57 |
| T1441 PERFORMANCE CHECK AN/GPA-131 VIDEO MAPPER ASSEMBLIES, SUCH AS VIDEO CONVERTERS | 56 |
| E142 PREPARE AFCC FORMS 142 (NOT REPARABLE THIS STATION (NRTS) VALIDATION) | 55 |
| T1440 INSTALL AN/GPA-131 VIDEO MAPPER SUBASSEMBLIES, SUCH AS PRINTED CIRCUIT CARDS (PCC) | 54 |
| T1435 ALIGN AN/GPA-131 VIDEO MAPPER BIAS AND FOCUS CIRCUITS | 53 |
| U1476 PERFORMANCE CHECK AN/GPA-133 CAMERAS | 52 |
| W1516 ALIGN AN/TPX-42 RECEIVER TRANSMITTER GROUPS | 50 |
| W1533 PERFORM AN/TPX-42 VARIABLE STANDING WAVE RATIO (VSWR) MEASUREMENTS | 49 |
| U1479 PERFORMANCE CHECK AN/GPA-133 PPI (IP-1016) | 47 |
| U1477 PERFORMANCE CHECK AN/GPA-133 CONRAC MONITORS | 46 |
| W1525 INSTALL AN/TPX-42 PRINTED CIRCUIT CARDS (PCC) | 45 |
| H331 INSTALL CRIMPED WIRING TERMINALS | 44 |
| U1470 INSTALL AN/GPA-133 BRITE II SUBASSEMBLIES, SUCH AS PRINTED CIRCUIT CARDS (PCC) | 43 |
| H356 PREPARE EQUIPMENT FOR PRECISION MEASUREMENT EQUIPMENT LABORATORY (FREL) PROCESSING | 42 |
| F194 ISSUE LOCAL JOB CONTROL NUMBERS | 42 |
| H368 TROUBLESHOOT RADAR SYSTEM POWER SUPPLIES FROM SUBASSEMBLY TO DISCRETE COMPONENT LEVEL | 40 |
| W1509 ALIGN AN/TPX-42 CODER SYNCHRONIZERS | 40 |
| U1471 INSTALL AN/GPA-133 COMPONENTS, SUCH AS RESISTORS AND CAPACITORS | 39 |
| U1465 ALIGN AN/GPA-133 TRIGGER VIDEO COMPENSATOR (TVC) CHANNELS | 38 |
| T1433 ALIGN AN/GPA-131 VIDEO MAPPER SINE/COSINE CONVERTERS (TYPE I) | 37 |
| W1535 PERFORMANCE CHECK AN/TPX-42 CODER SYNCHRONIZERS | 37 |
| H318 FABRICATE MINICOAXIAL CABLES | 36 |
| H363 REMOVE RADAR SYSTEM POWER SUPPLY DISCRETE COMPONENTS, SUCH AS RECTIFIERS | 33 |

TABLE 17

RADAR-SPECIFIC EQUIPMENT TRAINING RECEIVED
BY 3-SKILL LEVEL SHREDS

| <u>SHRED</u> | <u>RADAR SYSTEMS TRAINED ON</u> |
|--------------|------------------------------------------------------|
| A | AN/GPN-20 (ASR), AN/FPN-62 (PAR) |
| B | AN/GPN-20 (ASR), AN/GPN-22 (PAR) |
| C | AN/GPN-12 (ASR), AN/FPN-62 (PAR) |
| D | AN/GPN-12 (ASR), AN/GPN-22 (PAR) |
| E | AN/GPN-20 (ASR), AN/GPN-22 (PAR), AN/MPN-14 (ASR) |

group (see Table 6). They spend almost equal amounts of time (approximately 18 percent) as "A" shred members performing maintenance functions on AN/GPN-20/21 ASR radar systems. This coincides with the radar-specific training "B" shred designees undergo. Eighty-four percent of the members in this shred have completed training on "B" designated radar systems. In addition, substantial percentages of members in this group spend relatively large amounts of time maintaining AN/MPN-13/14 ASR/PAR systems, for which they have not received basic technical school training. The type of maintenance tasks performed primarily relate to performance checks of these radar systems and common ancillary equipment used across all shreds.

DAFSC 30331C. Ninety-three percent of the airmen assigned to the C-shred indicate they have completed ABR training specifically for equipment pertinent to this shred. Furthermore, the data reflect these members spend most of their job time maintaining radar systems corresponding to this shred--AN/GPN-12 ASR and AN/FPN-62 PAR configurations. C-shred members also spend overall larger percentages of time than any other shred maintaining GPA-133 BRITE II systems. Similar to "B" shred members, the majority of maintenance tasks pertain to making performance checks of the respective systems. Also, C-shred airmen perform more alignment operations on radar systems and ancillary equipment. Like the A-shred, these members perform a relatively broad job (204 tasks on the average). See Appendix C for tasks representative of the highly technical job performed by these incumbents.

DAFSC 30331D. Very few 3-skill level members in the survey sample indicated a DAFSC "D" shred suffix (N=6). They perform fewer tasks on the average (N=120) than any other shred-out group and spend the majority of their time maintaining AN/GPN-12 ASR systems. While 100 percent of these airmen indicate they received ABR training specific for radar systems covered by the D-shred (AN/GPN-12 ASR and AN/GPN-22 PAR) as Table 6 indicates, they spend less than 1 percent of their overall job time maintaining the AN/GPN-22 PAR system. However, small percentages of this group perform maintenance on two other PAR systems (AN/FPN-16/61 and FPN-62) in addition to ancillary equipment maintenance. This may be due to the fact that the GPN-22 configuration is utilized more overseas or in locations having inclement weather. Also, all of these airmen are stationed at CONUS installations. Still, these members indicate their jobs utilize their training very well. Appendix C lists samples of tasks most representative of this group.

DAFSC 30331E. Members of this shred have more time in service (31 months TAFMS) than those of the 4 other shreds. This may be due in part to the greater length of time for completion of basic course requirements (35 more days) for E-shred graduates. Eighty-eight percent of this group indicated completion of this course. However, the vast majority (about 55 percent) of their job time is spent maintaining TPN-19 ASR, PAR, and OPS trailer systems as shown in Table 6. They perform an average of 169 tasks, with only 13 percent of their job time spent performing tasks directly related to the maintenance of the radar system for which they have received additional ABR training (AN/MPN-14). In addition, substantially lower percentages of members in this group maintain MPN-13/14 radar systems in comparison to those maintaining the TPN-19 system--12 percent versus 35 percent, respectively. This is also revealed in Table 9, which depicts the TPN-19 as the equipment item maintained

by 30 percent or better of E-shred personnel. Unlike members of the other shreds who maintain the respective radar systems unique to that shred in addition to related ancillary and test equipment, very few E shred members spend time maintaining associated equipment, such as GPA-131/133. Furthermore, less than 1 percent of these airmen perform maintenance tasks on AN/GPN-22 PAR systems for which they have received ABR training.

SUMMARY

Overall, the channelized method of assigning graduates who have completed the basic skills in troubleshooting, maintenance, and repair of ASR/PAR, landing control central (LCC), and ancillary equipment to be used at his/her first base of assignment is in effect for most of the shreds. However, some discrepancies were noted in the percentages of members maintaining equipment for which they have not received initial training. For example, larger percentages of B-shred members (over two times as many) maintain MPN-13/14 radar systems than E-shred designees. Conversely, D and E shred airmen indicate low percentages maintaining GPN-22 PAR systems for which they have received 32 days of formal training. Members of the E-shred indicate larger percentages performing and more job time spent on maintenance of TPN-19 systems. Resident ABR training is not provided on this system. Hence, the 35 days of training on the MPN-14 system are not utilized by large percentages of E-shred graduates. These larger percentages of use on the TPN-19 system may be partially attributed to the fact that the majority of E-shred graduates are initially assigned to mobility units, such as the 3 CISG at Tinker AFB OK. The TPN-19 LCC is one of the primary systems maintained by members assigned to these units. Still, members of the training community and MAJCOM users should review requirements for these courses.

The following section, in which specialty training documents (STS and POI) are reviewed, should serve as one of the primary tools for assessment of course requirements.

DISCUSSION OF RELEVANCE AND ACCURACY OF CAREER LADDER TRAINING DOCUMENTS

Specialty Training Standard (STS)

A comprehensive review of STS 303X1, Air Traffic Control Radar specialty, dated November 1981 was made by comparing STS elements to survey data. Each paragraph was reviewed using training emphasis, task difficulty, and percent members performing information as stipulated in ATCR 52-22, dated 8 December 1986. Typically, tasks performed by 20 percent or more of personnel in appropriate experience or skill level groups should be considered for inclusion in the STS. In most instances, incumbent data includes first-job (1-24 months TAFMS) and first-enlistment (1-48 months TAFMS) experience groups and 5- and

7-skill level groups. However, since column 2A of the STS identifies the proficiency level attained in the 3-skill level course; and, since the ABR courses for this career ladder correspond to each of the five shreds, the STS was reviewed across each shred for percent members performing data at the 3-skill level. STS paragraphs containing general knowledge information or subject-matter knowledge requirements were not evaluated.

Overall, the majority of the STS paragraphs are supported by occupational survey data. Although the STS is written in a very broad and general nature, tasks matched to pertinent paragraphs reveal clear differences in task performance across shreds. These differences are primarily centered around the type of radar and ancillary equipment maintained. Ideally, since the STS is written in such a general nature, pertinent task statements for each radar system or ancillary equipment item in the inventory could have been matched to many STS paragraphs. However, due to some constraints placed on volume or length of extracts to maintain a workable document, this was not done. For example, in STS paragraph 3A, the application of safety precautions when using tools and equipment is common across all shreds and skill levels when performing alignments, troubleshooting, or preventive maintenance on all radar systems and associated equipment. Only those tasks referencing the AN/GPN-12 ASR system, which show high usage by C and D shred members, are matched to the item. Nevertheless, the STS paragraph is supported.

Another example may be noted in STS element 12E, matched with 279 tasks, showing substantial percentages of members conducting performance checks on a broad array of radar equipment across all shreds and skill levels. The large number of tasks matched to this single line item represent every ASR/PAR configuration listed in the job inventory, in addition to some ancillary equipment items.

The above examples demonstrate how generalization of STS task statements lends to diminished clarity and utility of the document for field use. Currently, field personnel responsible for training are augmenting the STS by establishing locally-made training plans which specify the types of radar equipment maintained at their location; such as command issued qualification training packages or AF Forms 797 (Job Qualification Standard). These broad, general areas do not contribute to the purpose of the STS--to serve as a basis for developing resident and non resident training. Table 18 lists several STS areas requiring review based on the above information as well as other factors. (Note: For a complete listing of STS paragraphs matched with survey data, refer to the STS printout in the Training Extract.)

Other STS areas may also require adjustments to become aligned with stipulations set forth by current guidelines, such as APCR 52-22. For example, the use of multiple verbs in a task statement or extraneous phrasing in task statements (see paragraphs 11 and 12, respectively) makes OJT administration difficult and may impede the development of concise course objectives.

As it is written, the STS does not reflect the diversity of jobs in the career ladder structure. One recommendation for obtaining a more concise, workable and consistent document may be to include in the STS the more commonly-used radar configurations. This would provide more accurate coverage

TABLE 18
EXAMPLES OF STS AREAS REQUIRING REVIEW

| STS AREA | PROBLEM IDENTIFIED |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 3A APPLY SAFETY PRECAUTIONS WHEN USING TOOLS AND EQUIPMENT (2b 3c 4c) | QUESTIONABLE SUPPORT ACROSS SHREDS |
| 3B PRACTICE HOUSEKEEPING CONSISTENT WITH SAFETY (2b 3c 4c) | QUESTIONABLE SUPPORT ACROSS SHREDS |
| 4C LOCATE REQUIRED MAINTENANCE INFORMATION IN APPLICABLE TECHNICAL ORDERS (2b 3c 3c) | EXTRANEOUS QUALIFYING PHRASES IN TASK STATEMENT |
| 10B ADJUST AND USE APPLICABLE ELECTRONIC TEST EQUIPMENT (2b 3c 3c) | NO MATCHED TASKS |
| 11A(1) ALIGN, ADJUST, AND PERFORMANCE CHECK RADAR SYSTEMS POWER SOURCES AND SUPPLIES (2b 3b 4c) | MULTIPLE VERBS IN TASK STATEMENT (TOO BROAD) |
| 12D RECOGNIZE EQUIPMENT MALFUNCTION AND UTILIZE PROPER TROUBLE SHOOTING PROCEDURES TO LOCATE SPECIFIC PROBLEMS (...OF SPECIFIC RADAR EQUIPMENT AND ASSOCIATED EQUIPMENT) (2b 3c 4c) | EXTRANEOUS QUALIFYING PHRASES/TOO GENERAL (131 MATCHED TASKS, MULTIPLE OBJECTS OF VERB) |
| 12E CHECK MINIMUM PERFORMANCE STANDARDS, AND INTERPRET RESULTS | STATEMENT TOO GENERAL (279 MATCHED TASKS) |

of the systems used by career ladder members across shreds and skill-levels. Then, the less commonly-used radar systems showing low percent members performing, such as AN/GPN-25 or AN/MPN-13/14, may be included on the local Job Qualification Standard (JQS). However, if the STS is to be written to maintain continuity and not to change each time new equipment is introduced in the field, paragraphs containing task statements broken out by general categories of equipment, such as ASR, PAR, test equipment, or ancillary equipment may serve this purpose, while still providing clarity and ease of use in the field and for development of formal training courses.

The final analysis of the STS was in the section of Tasks Not Referenced to any STS paragraph, located at the end of the STS computer printout in the TRAINING EXTRACT. These tasks were reviewed to determine if they focused around a common function or item of equipment. Table 19 lists some tasks not referenced to any portion of the STS, showing average to high training emphasis and meeting incumbent performance criteria. All of the 45 tasks rated high in training emphasis (3.06 or better) and not matched to any STS element were performed by at least 20 percent of the members across shreds or skill levels. Primarily, these tasks pertain to functions such as aligning, removal, or installation of various components or modules on some of the commonly used systems and associated equipment, such as An/GPN-20/21 ASR and GPA-131 video mappers. Of the 154 tasks rated average to high in training emphasis (1.67 to 3.06), 90 percent meet members performance criteria for inclusion in the STS. Here again, these tasks refer to installation or removal of components or assemblies of radar systems and were typically performed by members within the Electronics Installation cluster (see Career Ladder Structure section of this report). Other tasks not referenced to the STS, but showing substantial percentages of members performing across any one shred or skill level, included those pertaining to removal or installation functions on some common radar systems, such as AN/GPN-22 or AN/GSN-12, and less commonly-used systems, such as ARTS III, GRC-203, and AN/GPN-25. These findings suggest that paragraphs referencing installation and removal functions may be warranted for inclusion in the revised STS.

The electronic principles paragraph of the STS (paragraph 8), although a mandatory STS entry for all electronic based career fields, was not evaluated at this time due to the nonavailability of data from the forthcoming Electronic Principles Inventory (EPI).

PLAN(S) OF INSTRUCTION (POI)

The Plans of Instruction (POIs) for this AFSC are contained in four volumes: E3ABR30331A-001, dated 4 March 1985, with change 15 July 1986; E3ABR30331B-002 dated 21 May 1984; E3ABR30331D-004, dated 1 December 1986; and E3ABR30331E-005, dated 15 September 1983. Each POI contains the qualitative requirements for the respective course and includes training in operation, alignment, inspection, maintenance, and repair of air traffic control radar equipment, associated auxiliary equipment, and use of related test equipment.

TABLE 19

EXAMPLES OF TASKS NOT REFERENCED TO ANY STS ELEMENT
(20 PERCENT OR MORE MEMBERS PERFORMING)

| TASKS | TRNG EMP* | TASK DIFF** | PERCENT MEMBERS PERFORMING | | | | | | | |
|-------------------------------------------------------------------------------------------|--------------|----------------|----------------------------|------------------|------------------|-----------------|------------------|------------------|------------------|--|
| | | | 30331A (N=19) | 30331B (N=19) | 30331C (N=14) | 30331D (N=6) | 30331E (N=17) | 30351 (N=421) | 30371 (N=244) | |
| W1532 PERFORM AN/TPX-42 TURN-ON OR TURN-OFF PROCEDURES | 4.85 | 3.83 | 74 | 53 | 57 | 83 | 18 | 54 | 48 | |
| J475 ALIGN AN/GPN-20/21 AUTOMATIC FREQUENCY CONTROLS (AFC) | 4.61 | 5.51 | 53 | 53 | 7 | 0 | 12 | 28 | 30 | |
| U1475 INSTALL AN/GPA-133 TV CAMERA VIDICONS | 4.50 | 6.62 | 63 | 11 | 57 | 83 | 0 | 39 | 43 | |
| J498 ALIGN AN/GPN-20/21 STABLE LOCAL OSCILLATORS (STALO) | 4.15 | 5.03 | 42 | 26 | 7 | 0 | 12 | 22 | 24 | |
| N819 ALIGN AN/FPN-62 AUTOMATIC FREQUENCY CONTROLS (AFC) | 4.02 | 4.76 | 68 | 0 | 64 | 17 | 0 | 24 | 21 | |
| W1529 PERFORM AN/TPX-24 EMERGENCY OPERATING PROCEDURES | 3.91 | 4.46 | 53 | 42 | 21 | 50 | 12 | 36 | 36 | |
| N838 ALIGN AN/FPN-62 SYSTEM RF CONVERTERS | 3.83 | 4.13 | 58 | 0 | 50 | 17 | 0 | 23 | 21 | |
| I371 ALIGN AN/GPN-12 AUTOMATIC FREQUENCY CONTROLS (AFC) | 3.80 | 6.22 | 11 | 11 | 64 | 83 | 0 | 17 | 13 | |
| T1446 REMOVE AN/GPA-131 VIDEO MAPPER SUB-ASSEMBLIES, SUCH AS PCC | 3.79 | 3.78 | 79 | 21 | 57 | 50 | 18 | 49 | 45 | |
| T1440 INSTALL AN/GPA-131 VIDEO MAPPER SUB-ASSEMBLIES, SUCH AS PRINTED CIRCUIT CARDS (PCC) | 3.77 | 3.89 | 79 | 25 | 57 | 50 | 18 | 49 | 46 | |
| I379 ALIGN AN/GPN-12 PARAMETRIC AMPLIFIERS | 3.69 | 6.60 | 11 | 0 | 43 | 83 | 0 | 16 | 12 | |
| U1483 REMOVE AN/GPA-133 DISCRETE COMPONENTS, SUCH AS RESISTORS AND CAPACITORS | 3.58 | 4.62 | 58 | 16 | 50 | 33 | 0 | 35 | 41 | |
| T1438 INSTALL AN/GPN-131 VIDEO MAPPER ASSEMBLIES, SUCH AS VIDEO CONVERTERS | 3.56 | 4.27 | 68 | 26 | 57 | 67 | 18 | 44 | 44 | |
| J483 ALIGN AN/GPN-20/21 LOGARITHMIC MODULES | 3.38 | 5.95 | 32 | 5 | 7 | 0 | 6 | 16 | 21 | |
| I381 ALIGN AN/GPN-12 QUANTIZERS | 3.35 | 6.66 | 11 | 11 | 29 | 33 | 0 | 14 | 12 | |
| I375 ALIGN AN/GPN-12 LOCK TEST PULSE GENERATORS | 3.34 | 4.35 | 11 | 5 | 36 | 67 | 0 | 15 | 12 | |
| C68 PERFORM EQUIPMENT INSPECTIONS | 3.23 | 5.87 | 37 | 37 | 43 | 17 | 24 | 43 | 57 | |

* Average Training Emphasis = 1.67 with SD of 1.39

** Average Task Difficulty = 5.00 with SD of 1.00

As displayed in Figure 3, Training Course Flow Chart, blocks of instruction within these POIs for initial skills training vary according to shred designation. Entering personnel undergo training following either A or B tracks of instruction, upon completing requirements in two common areas of instruction--Basic Electronic Principles and Intro ATC Radar--accounting for 70 training days. Another common area of training occurs following 20 days of system-specific training on ASR radar configurations. This area of instruction, lasting 55 days, includes training for all shreds in operation, maintenance, inspection, and alignment of the AN/GSN-12 RAPCON, TPX-42, and auxiliary equipment, such as IDP and GPA-133 (BRITE) systems. Training relevant to PAR system maintenance is again split based on shreds. Course length and radar systems specific to shred designation are as follows:

| <u>Shred</u> | <u>Systems</u> | <u>Course Length</u> |
|--------------|----------------------------------------------|----------------------|
| A | AN/GPN-20(ASR)/FPN-62(PAR) | 165 days |
| B | AN/GPN-20(ASR)/GPN-22(PAR) | 177 days |
| C | AN/GPN-12(ASR)/FPN-62(PAR) | 165 days |
| D | AN/GPN-12(ASR)/GPN-22(PAR) | 177 days |
| E | AN/GPN-20(ASR)/GPN-22(PAR) MPN-14(RAPCON) | 212 days |

Although basic technical school training is not provided for the An/TPN-19 system, graduates channeled to maintain this system must first complete 212 days training specified for E-shred members, then progress to a 26-week FTD course at Tinker AFB to undergo training specific to TPN-19 systems.

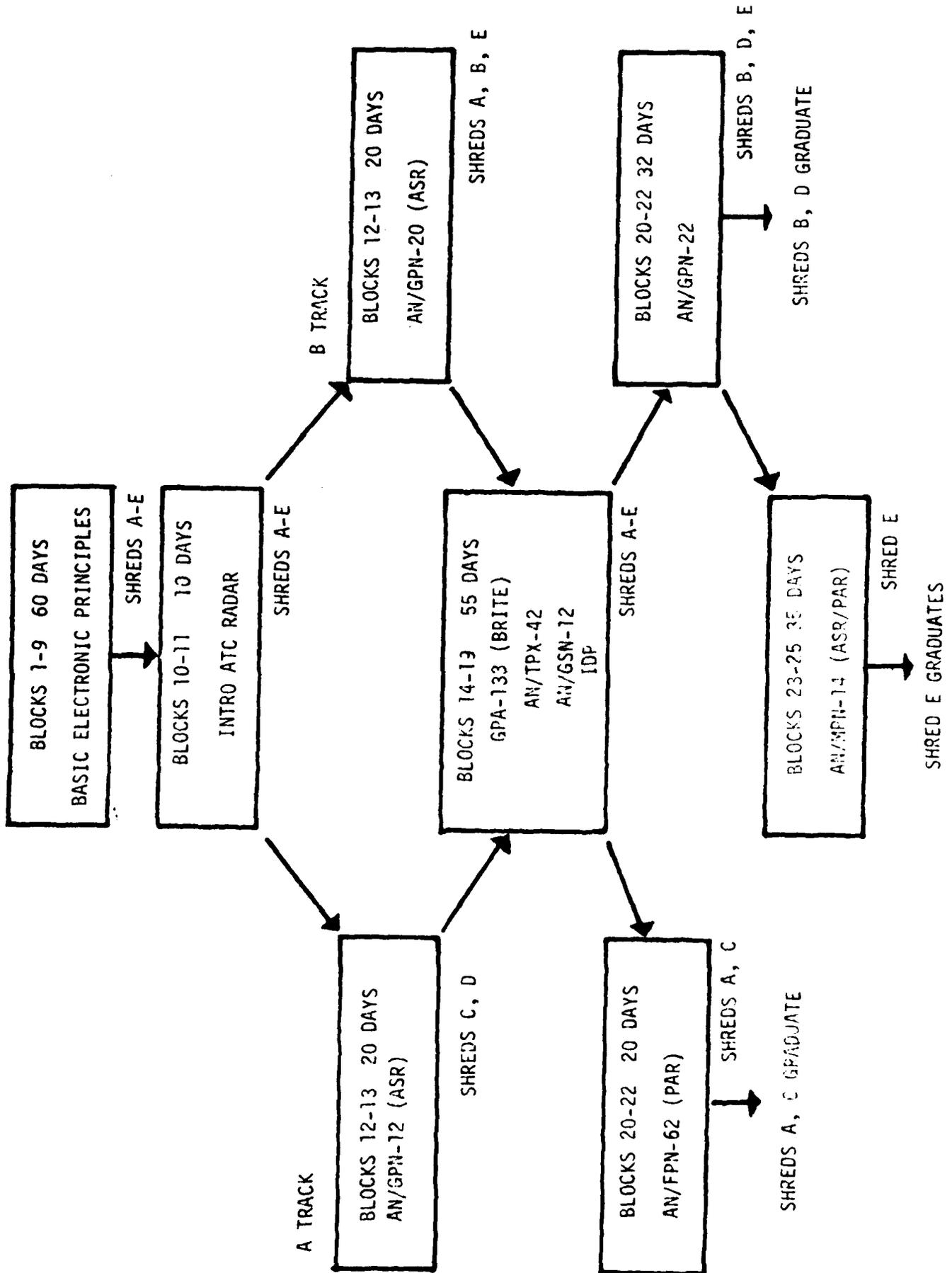
A similar method to that of the STS analysis was employed in the review of each POI, using tasks matched by training personnel from Keesler Technical Training Center to the criterion objectives (CO), task difficulty ratings, training emphasis ratings, and percent members performing across pertinent shreds (30 percent or better) information. Each POI is discussed as a separate entity. In addition, blocks of instruction within the POIs may be discussed separately, based upon commonality versus specificity of training for any equipment items or shreds.

POI Blocks I-XI. All personnel entering the Air Traffic Control Radar specialty must first complete 60 days of training in basic electronic principles provided by the 3410 TCHTG at Keesler AFB. This training incorporating Blocks of Instruction I-IX was not evaluated due to non-availability of EPI data, which is forthcoming. Upon satisfactory completion of this area of instruction, all members take a 10-day introductory course, provided in Blocks X-XI. Every criterion objective within this segment was supported by survey data.

POI Blocks XIIA-XIIIA. Review of POI E3ABR30331D, dated 1 December 1986, containing Blocks XII-XIII for the AN/GPN-12 (ASR) system maintained by C- and D-shred members revealed several potential problem areas. For example, 3 objectives (XIIA 1A/1B/2A), although coded as "knowledge only" items, have one common task (G269) matched to each objective. This task, involving interpreting plans, such as diagrams or schematics, shows low percent members

FIGURE 2

TRAINING COURSE FLOW CHART



performing across each of the five shreds. Hence, these blocks of instruction and others under which the required knowledge to perform a related task is gained or taught, should be reviewed by training personnel. Many tasks relating specifically to the GPN-12 system were not referenced to any portion of the related POI. The majority of tasks rated above average to high in training emphasis and performed by substantial percentages of C- and D-shred members centered around conducting performance checks or alignments of the GPN-12 system (see Table 20). These tasks may require inclusion in future revisions to the POI.

POI Blocks XIIB-XIIIB. These blocks of instruction contained in POI E3ABR30331A provide initial skills training required to maintain AN/GPN-20 (ASR) transmitter, receiver, and antenna systems pertinent for A-, B-, and E-shred members. As discussed in the preceding paragraph for corresponding blocks in A track training, criterion objectives referring to the application of knowledge used in interpreting block diagrams (functions/characteristics/signal flow) were not supported by survey data, based on low percent members performing in A-, B-, and E-shreds (i.e., Blocks XII 1A/2A/3A and XIII 1A/2A/3A/4A). In addition, all tasks matched to performance-coded criterion objectives within these blocks of instruction showed low percent members performing among E-shred personnel; but, they were supported by substantial percentages of members performing from A- or B-shreds. These areas, representing 52 hours of instruction, require review to determine relevance to E-shred training. This discrepancy is also noted in the review of tasks related to GPN-20/21 systems, and not referenced to these blocks of instruction (see Table 21). While many of these tasks received high training emphasis ratings and are performed by substantial percentages of either A or B shred members, very few E-shred airmen perform them. Hence, inclusion of these areas, primarily related to performance checks, aligning, trouble-shooting, or removal of GPN-20/21 equipment items, in future revisions to this POI may be warranted for A- and B-shred members, but would require further substantiation to validate inclusion for E-shred training.

POI Blocks XIV-XIX. Currently, all 303X1 personnel entering the career ladder undergo 55 days of common training, covering AN/GSN-12 and other auxiliary radar equipment, to include TPX-42, indicator data processor (IDP), GPA-131 video mapper, and GPA-133 (BRITE II) systems. The majority of the performance objectives did not show adequate percent members performing matched tasks across all 5 shreds. While most areas were supported well, based on 30 percent or better members performing in one shred or another, very few criterion objectives were supported by comparable percentages across every shred. For example, POI Block XIV 8B indicates substantial percentages of A- and C-shred members performing related tasks. However, members of B-, D-, and E-shreds show percentages performing far below the recommended cut-off for retention in ABR courses. On the other hand, adequate percentages of the total first-enlistment population are performing these tasks, which indeed warrants retention in the basic course (Note: Total number (N) in group size). Many such ambiguous areas were identified within this common area of training. It is recommended that this area be reviewed carefully to determine relevancy and appropriateness of training for every shred.

TABLE 20

EXAMPLES OF TASKS NOT REFERENCED POI 3ABR30331D
(BLOCKS 12-13)

| TASKS | TRNG EMPH* | PERCENT MEMBERS PERFORMING | | TASK DIFF** |
|--------------------------------------------------------------------------------------|---------------|----------------------------------|-----------------|----------------|
| | | 30331C (N=14) | 30331D (N=6) | |
| I436 PERFORMANCE CHECK TUNING OF AN/GPN-12 RECEIVER STABLE LOCAL OSCILLATORS (STALO) | 3.86 | 64 | 67 | 5.62 |
| I371 ALIGN AN/GPN-12 AUTOMATIC FREQUENCY CONTROLS (AFC) | 3.80 | 64 | 83 | 6.22 |
| I420 PERFORMANCE CHECK AN/GPN-12 RECEIVER PARAMETRIC AMPLIFIERS | 3.78 | 64 | 83 | 5.53 |
| I379 ALIGN AN/GPN-12 PARAMETRIC AMPLIFIERS | 3.69 | 43 | 83 | 6.06 |
| I413 PERFORMANCE CHECK AN/GPN-12 NORMAL GAIN AND BALANCE UNITS | 3.65 | 64 | 83 | 5.26 |
| I415 PERFORMANCE CHECK AN/GPN-12 PROCESSOR TRIGGER TIMING UNITS | 3.64 | 64 | 50 | 5.04 |
| I422 PERFORMANCE CHECK AN/GPN-12 RECEIVER PREAMPLIFIER GAIN UNITS | 3.60 | 64 | 33 | 4.88 |
| I382 ALIGN AN/GPN-12 RECEIVER NOISE FIGURES | 3.53 | 36 | 67 | 5.71 |
| I384 ALIGN AN/GPN-12 TRANSMITTER FREQUENCIES | 3.48 | 64 | 83 | 3.48 |
| I428 PERFORMANCE CHECK AN/GPN-12 THREE TIMES FAULT CIRCUITS | 3.39 | 64 | 83 | 4.03 |
| I380 ALIGN AN/GPN-12 PLAN POSITION INDICATORS (PPI) | 3.35 | 50 | 67 | 5.90 |
| I376 ALIGN AN/GPN-12 MAGNETRON FILAMENT VOLTAGES | 3.29 | 57 | 67 | 3.42 |
| I414 PERFORMANCE CHECK AN/GPN-12 PPI MONITORS | 3.25 | 57 | 67 | 4.73 |
| I427 PERFORMANCE CHECK AN/GPN-12 SYSTEM AND RECEIVER CONTROL PANELS | 3.17 | 57 | 67 | 4.08 |
| I383 ALIGN AN/GPN-12 THYRATRON CAPSULE VOLTAGES | 3.14 | 57 | 67 | 3.20 |
| I473 TROUBLESHOOT AN/GPN-12 TRANSMITTERS TO SUB-ASSEMBLY LEVEL, SUCH AS MODULES | 3.00 | 57 | 50 | 5.95 |
| I465 TROUBLESHOOT AN/GPN-12 PROCESSORS FROM MODULE TO PCC LEVEL | 2.80 | 36 | 50 | 6.74 |
| I462 TROUBLESHOOT AN/GPN-12 PPC TO DISCRETE COMPONENT LEVEL | 2.11 | 36 | 33 | 7.29 |
| I399 INSTALL AN/GPN-12 RECEIVER SUBASSEMBLIES, SUCH AS MODULES | 2.08 | 36 | 50 | 3.68 |
| I405 INSTALL AN/GPN-12 TRANSMITTER DISCRETE COMPONENTS | 2.01 | 43 | 50 | 4.65 |
| I370 ALIGN AN/GPN-12 ANTENNAS | 1.95 | 36 | 0 | 5.38 |
| I445 REMOVE AN/GPN-12 PROCESSOR PCC | 1.90 | 36 | 33 | 2.85 |

* Average Training Emphasis = 1.67 with SD of 1.39

** Average Task Difficulty = 5.00 with SD of 1.00

TABLE 21

EXAMPLES OF TASKS NOT REFERENCED TO POI 3ABR30331B
(BLOCKS 12-13)

| TASKS | TRNG EMPH* | PERCENT MEMBERS PERFORMING | | | TASK DIFF** |
|--------------------------------------------------------------------------------------------|---------------|-------------------------------|------------------|------------------|----------------|
| | | 30331A (N=19) | 30331B (N=19) | 30331E (N=17) | |
| J565 PERFORMANCE CHECK AN/GPN-20/21 SYSTEM VIDEO LEVELS | 4.65 | 47 | 32 | 6 | 4.84 |
| J475 ALIGN AN/GPN-20/21 AUTOMATIC FREQUENCY CONTROLS (AFC) | 4.61 | 53 | 53 | 12 | 5.51 |
| J492 ALIGN AN/GPN-20/21 PERFORMANCE MONITORS | 4.42 | 42 | 32 | 6 | 6.54 |
| J524 PERFORMANCE CHECK AN/GPN-20/21 AFC | 4.39 | 42 | 32 | 12 | 4.62 |
| J484 ALIGN AN/GPN-20/21 MAGNETRON TUNING ASSEMBLIES | 4.36 | 47 | 37 | 12 | 5.75 |
| J596 TROUBLESHOOT AN/GPN-20/21 RECEIVERS TO SUBASSEMBLY LEVEL | 4.31 | 47 | 32 | 6 | 6.27 |
| J543 PERFORMANCE CHECK AN/GPN-20/21 MTI QUAD-PHASE CIRCUITS | 4.23 | 37 | 26 | 6 | 4.91 |
| J527 PERFORMANCE CHECK AN/GPN-20/21 AZIMUTH REFERENCE PULSES (ARP) | 4.06 | 37 | 32 | 12 | 3.97 |
| J542 PERFORMANCE CHECK AN/GPN-20/21 MTI LOCK TEST PULSE CIRCUITS | 3.96 | 37 | 37 | 6 | 4.84 |
| J597 TROUBLESHOOT AN/GPN-20/21 REMOTING CONTROL GROUPS TO SUBASSEMBLY LEVEL | 3.89 | 42 | 32 | 6 | 6.45 |
| J496 ALIGN AN/GPN-20/21 REMOTE LINE COMPENSATORS | 3.85 | 37 | 21 | 0 | 5.08 |
| J594 TROUBLESHOOT AN/GPN-20/21 PERFORMANCE MONITORS TO SUBASSEMBLY LEVEL | 3.85 | 42 | 32 | 0 | 6.45 |
| J525 PERFORMANCE CHECK AN/GPN-20/21 ANTENNA POWER DISTRIBUTION PANELS | 3.53 | 37 | 32 | 12 | 3.79 |
| J522 PERFORM AN/GPN-20/21 EMERGENCY OPERATING PROCEDURES | 3.44 | 26 | 32 | 0 | 4.03 |
| J584 REMOVE AN/GPN-20/21 RECEIVER SUBASSEMBLIES, SUCH AS PCC | 2.62 | 42 | 26 | 6 | 3.63 |
| J590 REMOVE AN/GPN-20/21 TRANSMITTER SUBASSEMBLIES, SUCH AS PCC | 2.60 | 42 | 32 | 6 | 3.63 |
| J589 REMOVE AN/GPN-20/21 TRANSMITTER DISCRETE COMPONENTS, SUCH AS RESISTORS AND CAPACITORS | 2.46 | 32 | 26 | 0 | 4.27 |
| J575 REMOVE AN/GPN-20/21 MAINTENANCE INDICATOR SUBASSEMBLIES, SUCH AS PCC | 2.41 | 32 | 26 | 0 | 3.77 |

* Average Training Emphasis is 1.67 with SD of 1.39

** Average Task Difficulty is 5.00 with SD of 5.00

Tasks pertaining to the above equipment items and not referenced to any objective within these six blocks of instruction (Table 22) reveal the majority of those tasks rated highest in training emphasis are performed by substantial percentages in some shreds, and also among the first-enlistment group as well. These tasks refer to the performance of a variety of maintenance activities, such as aligning, troubleshooting, or conducting performance checks on each equipment items covered under these blocks of instruction.

POI Blocks XXA-XXIIA. As stated previously, upon completion of 55 days of common training on equipment items used primarily by all five shreds, students are again channeled to courses in which they receive training on PAR systems corresponding to their shred designation. A-track training places emphasis on the AN/FPN-62 (PAR) system, and is presented in Blocks XX-XXII of POI E3ABR30331A, dated 4 March 1985, with a change effective 15 July 1986. This training is administered to A- and C-shred members only. Overall, these blocks of instruction were well supported by survey data, showing substantial percentages of A- and C-shred members performing tasks matched to performance objectives. Only the knowledge-based criterion objectives in which one task, matched consistently to each, showed less than the recommended percent members performing the task.

Tasks directly related to the equipment items trained in this segment of instruction (Duty N) and not referenced to any objective within this segment of the POI were also reviewed. The majority of those tasks rated average to high in training emphasis (Table 23) are performed by large enough percentages of A and C shred personnel to be considered for inclusion in an initial skills training course.

POI Blocks XXB-XXIIB. Students undergoing B-track ABR training progress to PAR training on the AN/GPN-22 upon completion of the common training on auxiliary equipment. These blocks of instruction are incorporated in POI E3ABR30331B, dated 21 May 1984. Members channeled to maintain equipment for B-, D-, and E-shreds only receive training on this system. Review of criterion objectives within these blocks of instruction indicate that all of the performance related objectives are not clearly supported by survey data. Primarily, this nonsupport is due to low percentages of members in the respective shreds (B-, D-, and E-) performing related tasks matched to the objectives. In many instances, these percentages were low across all of the pertinent shreds. However, the more common occurrence was demonstrated by low percentages of members among D- and E-shreds performing matched tasks, while B- shred members met the recommended cut-off criteria for percent members performing. For example, POI objective XXI 1B shows far less than 30 percent D- and E-shred members performing related tasks; yet, these tasks are performed by substantial percentages of B-shred designees. Here again, the concern for the relevancy of training on the GPN-22 (PAR) system for D- and E-shred assignees is raised by the data obtained.

Tasks specifically related to the GPN-22 radar system (Duty K) and not referenced to either portion in these blocks of instruction (Table 24) show few members performing tasks rated average and above in training emphasis. Those tasks showing larger percentages performing in one or the other of the above named shreds focus on alignment operations of the GPN-22 radar system.

TABLE 22

EXAMPLES OF TASKS NOT REFERENCED TO POI 3ABR30331B
(BLOCKS 14-19)

| TASKS | TRNG EMPH* | PERCENT MEMBERS PERFORMING | | | | | | TASK DIFF** |
|------------------------------------------------------------------------------------------|---------------|----------------------------|------------------|------------------|-----------------|------------------|------|----------------|
| | | 30331A (N=19) | 30331B (N=19) | 30331C (N=14) | 30331D (N=6) | 30331E (N=17) | | |
| U1476 PERFORMANCE CHECK AN/GPA-133 CAMERAS | 5.89 | 68 | 37 | 78 | 50 | 0 | 5.19 | |
| U1479 PERFORMANCE CHECK AN/GPA-133 PPI (IP-1016) | 5.87 | 68 | 32 | 71 | 50 | 0 | 5.51 | |
| W1563 TROUBLESHOOT AN/TPX-42 RECEIVER TRANSMITTER GROUPS TO PCC LEVEL | 5.59 | 58 | 37 | 50 | 50 | 12 | 6.35 | |
| U1459 ALIGN AN/GPA-133 NORTH-SOUTH DEFLECTION AMPLIFIERS | 5.48 | 63 | 21 | 57 | 17 | 0 | 6.30 | |
| U1489 TROUBLESHOOT AN/GPA-133 BRITE II ASSEMBLIES TO SUB- ASSEMBLY LEVEL, SUCH AS PCC | 5.48 | 63 | 26 | 71 | 33 | 0 | 6.49 | |
| U1464 ALIGN AN/GPA-133 TRIGGER VIDEO AMPLIFIER (TVA) LINE DRIVERS | 5.22 | 53 | 32 | 79 | 50 | 0 | 4.47 | |
| W1537 PERFORMANCE CHECK AN/TPX-42 INDICATOR GROUPS | 5.22 | 74 | 32 | 57 | 33 | 12 | 5.32 | |
| W1507 ALIGN AN/TPX-42 AN/TPX-49 TRANSPONDER SETS | 4.92 | 53 | 32 | 36 | 0 | 18 | 6.30 | |
| W1542 PERFORMANCE CHECK AN/TPX-42 SIGNAL PROCESSORS | 4.74 | 53 | 21 | 43 | 0 | 12 | 5.05 | |
| T1430 ALIGN AN/GPA-131 VIDEO MAPPER AZIMUTH CHANGE PULSE (ACP) UNITS (TYPE II) | 4.69 | 58 | 32 | 21 | 17 | 9 | 4.71 | |
| W1529 PERFORM AN/TPX-24 EMERGENCY OPERATING PROCEDURES | 3.91 | 53 | 42 | 21 | 50 | 12 | 4.46 | |
| T1446 REMOVE AN/GPA-131 VIDEO MAPPER SUBASSEMBLIES, SUCH AS PCC | 3.79 | 79 | 21 | 57 | 50 | 18 | 3.78 | |
| Z1695 PERFORMANCE CHECK PIDP TAPE UNITS | 3.65 | 58 | 11 | 43 | 17 | 0 | 5.23 | |
| Z1699 TROUBLESHOOT PIDP SYSTEMS TO ASSEMBLY LEVEL, SUCH AS NOVA 3/12 | 3.49 | 42 | 11 | 29 | 17 | 0 | 5.99 | |
| W1552 REMOVE AN/TPX-42 PCC | 2.76 | 68 | 16 | 21 | 33 | 12 | 3.89 | |
| Y1658 PERFORMANCE CHECK AN/GSN-12 REMOTE SITE UNIT 9 | 2.41 | 11 | 21 | 7 | 17 | 6 | 4.74 | |
| Z1698 REMOVE PIDP SUBASSEMBLIES, SUCH AS PCC | 2.26 | 53 | 11 | 21 | 33 | 6 | 3.93 | |
| W1551 REMOVE AN/TPX-42 INTERROGATOR RECEIVER UNITS | 2.15 | 32 | 26 | 21 | 67 | 6 | 4.74 | |
| W1555 REMOVE AN/TPX-42 VSP | 1.78 | 37 | 5 | 21 | 0 | 6 | 4.76 | |

* Average Training Emphasis is 1.67 with SD of 1.39

** Average Task Difficulty is 5.00 with SD of 5.00

TABLE 23

EXAMPLES OF TASKS NOT REFERENCED TO POI 3ABR30331A
(BLOCKS 20-22)

| TASKS | TRNG EMPH | PERCENT MEMBERS PERFORMING | | TASK DIFF |
|-------------------------------------------------------------------------------------|--------------|-------------------------------|--------|--------------|
| | | 30331A | 30331C | |
| N856 PERFORMANCE CHECK AN/FPN-62 ANTENNA GROUPS | 4.05 | 68 | 71 | 5.44 |
| N879 TROUBLESHOOT AN/FPN-62 REMOTING SYSTEMS TO SUB- ASSEMBLY LEVEL, SUCH AS PCC | 4.02 | 58 | 57 | 6.76 |
| N857 PERFORMANCE CHECK AN/FPN-62 INDICATING GROUPS | 3.99 | 63 | 71 | 5.12 |
| N833 ALIGN AN/FPN-62 PERFORMANCE MONITORS | 3.79 | 58 | 57 | 4.87 |
| N817 ALIGN AN/FPN-62 ANTENNA PHASING | 3.77 | 63 | 57 | 5.98 |
| N820 ALIGN AN/FPN-62 AZIMUTH ELEVATION RELAY PULSE GENERATORS | 3.60 | 53 | 43 | 4.77 |
| N818 ALIGN AN/FPN-62 ANTENNA SERVO DATA SYSTEMS | 3.58 | 58 | 50 | 5.55 |
| N840 ALIGN AN/FPN-62 WAVEGUIDE TUNER AND ANTENNA VSWR | 3.42 | 42 | 50 | 5.30 |
| N821 ALIGN AN/FPN-62 CIRCULARIZATION POLARIZER ACTUATORS | 3.27 | 37 | 43 | 4.43 |
| N831 ALIGN AN/FPN-62 LINE VOLTAGE REGULATORS | 3.08 | 58 | 50 | 4.44 |
| N827 ALIGN AN/FPN-62 ELEVATION ANTENNA TILT CIRCUITS | 3.01 | 32 | 43 | 4.69 |
| N848 INSTALL AN/FPN-62 RECEIVER SUBASSEMBLIES, SUCH AS PCC | 2.60 | 63 | 43 | 4.08 |
| N828 ALIGN AN/FPN-62 FREQUENCY CHANGES | 2.53 | 47 | 50 | 5.33 |
| N853 INSTALL AN/FPN-62 TRANSMITTER DISCRETE COMPONENTS | 2.39 | 47 | 57 | 4.54 |
| N843 INSTALL AN/FPN-62 ANTENNAS | 2.27 | 37 | 36 | 6.63 |
| N861 REMOVE AN/FPN-62 ANTENNA DISCRETE COMPONENTS | 2.16 | 47 | 43 | 4.89 |
| N852 INSTALL AN/FPN-62 REMOTING SYSTEMS | 1.85 | 21 | 36 | 5.47 |
| N849 INSTALL AN/FPN-62 RECEIVERS | 1.67 | 26 | 36 | 4.91 |

TABLE 24

EXAMPLES OF TASKS NOT REFERENCED TO POI 3ABR30331B
(BLOCKS 20-22)

| TASKS | TRNG EMPH | PERCENT MEMBERS PERFORMING | | | TASK DIFF |
|----------------------------------------------------------------------------------------|--------------|-------------------------------|-----------------|------------------|--------------|
| | | 30331B (N=19) | 30331D (N=6) | 30331E (N=17) | |
| K612 ALIGN AN/GPN-22 RADIO FREQUENCY (RF) PHASING | 3.21 | 26 | 0 | 0 | 5.84 |
| K614 ALIGN AN/GPN-22 RDTG AMPLITUDE MODULATION (AM) MODULATOR/DEMODULATORS | 3.10 | 16 | 0 | 0 | 5.58 |
| K662 PERFORMANCE CHECK AN/GPN-22 SUPERVISORY MULTIPLEXER/DEMULTIPLEXER FAULT ALARMS | 3.09 | 26 | 0 | 0 | 5.09 |
| K604 ALIGN AN/GPN-22 CROSS FIELD AMPLIFIER (CFA) CURRENTS | 3.08 | 21 | 0 | 0 | 5.63 |
| K627 ALIGN AN/GPN-22 TRANSMITTER HIGH POWER TIMING CIRCUITS | 3.01 | 21 | 0 | 6 | 6.79 |
| K616 ALIGN AN/GPN-22 RDTG VIDEO MULTITRIGGER COMBINERS AND SEPARATORS | 2.94 | 16 | 0 | 0 | 5.72 |
| K620 ALIGN AN/GPN-22 SDC DIGITAL TO ANALOG CONVERSION ASSEMBLIES | 2.90 | 21 | 0 | 0 | 5.54 |
| K619 ALIGN AN/GPN-22 SIGNAL DATA CONVERTER (SDC) ANALOG COMPARATORS | 2.85 | 21 | 0 | 0 | 5.56 |
| K600 ALIGN AN/GPN-22 ANTENNA COMPRESSOR DEHYDRATORS | 2.75 | 37 | 0 | 0 | 4.02 |
| K650 INSTALL AN/GPN-22 TRANSMITTER SUBASSEMBLIES, SUCH AS MODULES | 2.00 | 26 | 0 | 0 | 5.79 |
| K641 INSTALL AN/GPN-22 RECEIVER SUBASSEMBLIES, SUCH AS MODULES | 1.90 | 26 | 0 | 0 | 4.31 |
| K679 REMOVE AN/GPN-22 RECEIVER SUBASSEMBLIES, SUCH AS MODULES | 1.64 | 26 | 0 | 0 | 4.64 |
| K673 REMOVE AN/GPN-22 INDICATOR SUBASSEMBLIES, SUCH AS MODULES | 1.60 | 21 | 0 | 0 | 4.89 |

POI Blocks XXIII-XXV. This section examines the POI for Course E3ABR30331E, dated 15 September 1983, administered to personnel in the E-shred only. This course emphasizes training on the MPN-13/14 radar system, in particular. Generally, the POI objectives were not supported by survey data. Guidelines suggest that a minimum of 30 percent of the members perform a task for inclusion of training in the ABR course. Only two criterion objectives, XXIII 4B (Alignment on the search TX-MOD/high voltage power supply) and XXV 8B (Preventive maintenance for the communications and ancillary equipment of the AN/MPN-13/14) had matched tasks which met minimum percent members performing criteria among E-shred personnel. Other POI objectives indicated larger percentages of B-shred members performing related tasks, rather than E-shred members who receive this additional formal training. For example, this occurrence is indicated in Blocks XXII-I 5A and XXIII 6A. Again, these blocks of instruction require review to effectively determine career ladder training needs.

As mentioned previously in the Analysis of DAFSC 30331 shreds, a majority of 30331E personnel perform duties related to the AN/TPN-19 radar system. However, formal ABR training is not provided in this area. Additionally, these personnel solely perform these duties when compared to other 3-skill level members. Reportedly, TPN-19 training is provided via FTD at Tinker AFB over a 26-week period, upon first meeting the requirements of E-shred ABR training.

Examples of tasks not referenced to the POI with greater than 30 percent of E-shred members performing are reflected in Table 25. The appropriateness of the method of training for tasks related to the TPN-19 should be considered by training personnel. Also, Table 26 lists tasks not referenced and having the highest training emphasis ratings related to MPN-13/14 radar systems. As shown in the table, while these tasks were rated higher in training emphasis than those related to the TPN-19 system, very few members perform them.

It is important to note that other tasks not referenced, which are not specifically related to one of the systems/equipment included in the preceding blocks of ABR training, should also be reviewed thoroughly by training personnel. For example, many tasks pertaining to general and preventive maintenance are performed by relatively high percentages of first-enlistment personnel as a whole, and across each of the 3-skill level shreds. Also, a number of these tasks were rated above average in training emphasis by career field subject-matter experts. This information may be found in the last portion of each POI computer printout (FACPRINTS) contained in the Training Extract.

Summary of Training Analysis

The greatest percentage of first-enlistment personnel function as Air Traffic Control Radar Maintenance Technicians, primarily performing tasks related to ASR repair and maintenance of ancillary equipment.

While analysis of 3-skill level shreds indicates that graduates (with the exception of E shred) generally are being assigned to locations having equipment corresponding to their shred designation, the relevancy of the actual technical school training received under the current channelization method is

TABLE 25

EXAMPLES OF TASKS NOT REFERENCED TO POI 3ABR30331E
(BLOCKS 23-25)
(30 PERCENT OR MORE MEMBERS PERFORMING)

| TASKS | TRNG EMPH* | 30331E (N=17) | TASK DIFF** |
|----------------------------------------------------------------------------------------------|---------------|------------------|----------------|
| P1085 ALIGN AN/TPN-19 PAR TRANSMITTER RECEIVER SPLIT PULSE TIMING CIRCUITS | 0.86 | 65 | 7.30 |
| P1028 ALIGN AN/TPN-19 ASR RML DEMULTIPLEXOR 3-CHANNEL AMPLITUDE MODULATION (AM) DEMODULATORS | 0.84 | 65 | 5.23 |
| P1058 ALIGN AN/TPN-19 PAR DMTI ANALOG COMPARATORS | 0.83 | 59 | 5.25 |
| P1088 ALIGN AN/TPN-19 PAR VERTICAL SENSORS | 0.83 | 77 | 6.47 |
| P1023 ALIGN AN/TPN-19 ASR MAGNETRON CURRENTS | 0.81 | 71 | 4.35 |
| P1125 PERFORM AN/TPN-19 ASR TURN-ON OR TURN-OFF PROCEDURES | 0.81 | 71 | 3.75 |
| P1191 PERFORMANCE CHECK AN/TPN-19 PAR TDC DIAGNOSTIC TAPES | 0.81 | 65 | 5.75 |
| P1025 ALIGN AN/TPN-19 ASR RECEIVER FRONT PANELS | 0.80 | 71 | 3.97 |
| P1154 PERFORMANCE CHECK AN/TPN-19 ASR SYNCHRONIZER PULSE RECURRENT FREQUENCY | 0.80 | 59 | 4.92 |
| P1157 PERFORMANCE CHECK AN/TPN-19 ASR SYNCHRONIZER BEAM SWITCH GATES | 0.80 | 59 | 4.93 |
| P1195 PERFORMANCE CHECK AN/TPN-19 PAR TRANSMITTER PULSE CHARACTERISTICS | 0.80 | 65 | 6.31 |
| P1132 PERFORMANCE CHECK AN/TPN-19 ASR AIR PRESSURE SYSTEMS | 0.79 | 53 | 4.14 |
| P1166 PERFORMANCE CHECK AN/TPN-19 OPS DISPLAY SUB-SYSTEMS | 0.79 | 59 | 5.48 |

* Average Training Emphasis is 1.67 with SD of 1.39

** Average Task Difficulty is 5.00 with SD of 5.00

TABLE 26

EXAMPLES OF TASKS NOT REFERENCED TO POI 3ABR30331E
(BLOCKS 23-25)
PERCENT MEMBERS PERFORMING

| TASKS | TRNG EMPH* | 30331E | TASK DIFF** |
|--------------------------------------------------------------------------------------------------------------------|---------------|--------|----------------|
| 0962 PERFORMANCE CHECK AN/MPN-13/14 PAR ANGLE VOLTAGE GENERATORS | 1.52 | 18 | 5.16 |
| 0889 ALIGN AN/MPN-13/14 ASR PARAMETRIC AMPLIFIERS | 1.51 | 18 | 5.65 |
| 0950 PERFORM AN/MPN-13/14 TURN-ON OR TURN-OFF PROCEDURES | 1.45 | 18 | 4.58 |
| 0891 ALIGN AN/MPN-13/14 ASR SEARCH VIDEO MIXERS | 1.41 | 12 | 4.53 |
| 0949 PERFORM AN/MPN-13/14 EMERGENCY OPERATING PROCEDURES | 1.31 | 6 | 4.80 |
| 0924 INSTALL AN/MPN-13/14 ASR TRANSMITTER GROUP DISCRETE COMPONENTS, SUCH AS ELECTRON TUBES | 1.24 | 18 | 3.71 |
| 0993 REMOVE AN/MPN-13/14 PAR TRANSMITTER GROUP SUBASSEMBLIES, SUCH AS MODULES | 1.21 | 18 | 4.50 |
| 0933 INSTALL AN/MPN-13/14 PAR RECEIVER GROUP DISCRETE COMPONENTS | 1.20 | 12 | 3.62 |
| 0939 INSTALL AN/MPN-13/14 POWER TRAILER POWER DISTRIBUTION GROUP DISCRETE COMPONENTS, SUCH AS ELECTRON TUBES | 1.15 | 6 | 3.82 |
| 0930 INSTALL AN/MPN-13/14 PAR INDICATOR GROUP DISCRETE COMPONENTS, SUCH AS ELECTRON TUBES | 1.12 | 18 | 3.65 |
| 0940 INSTALL AN/MPN-13/14 POWER TRAILER POWER DISTRIBUTION GROUP SUBASSEMBLIES, SUCH AS MODULES | 1.12 | 6 | 4.40 |
| 0989 REMOVE AN/MPN-13/14 PAR RECEIVER GROUP DISCRETE COMPONENTS, SUCH AS ELECTRON TUBES | 1.11 | 12 | 3.84 |
| 0884 ALIGN AN/MPN-13/14 ASR ANTENNA POLARIZATION CIRCUITS | 1.08 | 6 | 4.20 |

* Training Emphasis rating of 1.67; with a SD of 1.39

** Task Difficulty rating of 5.00 is average; with a SD of 1.00

questionable. These discrepancies, as discussed earlier in the POIs, are compounded by the broad, general nature in which the STS is written. A thorough review of these documents may result in a more accurate, efficient alignment of one with the other, and more cost-effective training to produce high-quality graduates to meet career field needs.

Job Satisfaction

Comparisons of group perceptions of their jobs provide career ladder managers with an avenue toward understanding some of the factors affecting job performance of today's airmen. These perceptions are obtained from incumbents' responses to four job satisfaction questions covering job interest, perceived utilization of talents, perceived utilization of training, and reenlistment intentions. The results of the job satisfaction responses of the current survey sample are then analyzed by making several comparisons: (1) across specialty job groups identified in the Career Ladder Structure section of this report, (2) among TAFMS groups of a comparative sample of personnel from other Mission Equipment Maintenance specialties surveyed in 1986 (AFSCs 304X4, 309X0, 361X0, 404X0, 411X0A, 411X1A, 431X0C, 432X0D, and 462X0), and (3) between current survey and previous survey TAFMS groups.

Table 27 displays job satisfaction data for the major jobs (clusters and independent job types) identified in the career ladder structure for AFSC 303X1. Overall, members performing jobs that have a greater technical orientation report higher levels of job satisfaction across all indicators. The scope of their job (i. e., average number of tasks performed) does not appear to be a major factor in determining incumbents satisfaction or dissatisfaction with the job in question. However, the multi-system qualifications characteristic of ATC Radar Eval Technicians and the nature of their job may attribute to the overall higher job satisfaction levels for these members in comparison to other jobs within the career ladder.

Electronics Installation Personnel Cluster, representing a somewhat small portion of members performing highly technical jobs, reported low levels of job satisfaction in the areas of utilization of talents and training. Telephone discussions and write-in comments from personnel operating in this area yielded noteworthy information as to a possible cause of discontent among EI personnel. Some of these expressions may be paraphrased as follows:

"...EI does not have radar equipment assigned to the shop for routine maintenance. Therefore, we do not have equipment to train on. If a junior grade airman is not assigned to a radar job, he/(she) will not get an opportunity to perform the electronics portion of an initial radar system set-up. They act as nondeployable team members and perform cross-utilization tasks for other shops in the meantime."

Although EI Personnel indicate low levels of job satisfaction in some areas, members performing primarily nontechnical jobs report the lowest

TABLE 27

JOB SATISFACTION INFORMATION FOR AIR TRAFFIC CONTROL RADAR
 MAINTENANCE SPECIALTY JOBS
 (PERCENT MEMBERS RESPONDING*)

| | ATC RADAR MAINT TECHS CLUSTER (GRP059, N=366) | RADAR MAINT SUPVY PERS CLUSTER (GRP053, N=34) | AN/MPN- 13/14 RADAR MAINT PERS (GRP 120, N=46) | ATC RADAR EVAL TECHNS (GRP139, N=5) | EI PERS CLUSTER (GRP029, N=35) | AN/TPN-19 RADAR SYS MAINT PERS (GRP 118, N=57) | AN/ GPN-12 SPECIAL TRNG INSTRS (GRP114, N=5) | MAINT STAFF SUPPORT CLUSTER (GRP015, N=77) | ATC RADAR MAINT TRNG CLUSTER (GRP074, N=60) |
|----------------------------------------------|-----------------------------------------------------------------|-----------------------------------------------------------------|------------------------------------------------------------------|----------------------------------------------------|--------------------------------------------|---------------------------------------------------------------|----------------------------------------------------------------|-----------------------------------------------------------|---------------------------------------------------------------|
| <u>EXPRESSED JOB INTEREST:</u> | | | | | | | | | |
| INTERESTING | 88% | 85% | 74% | 100% | 83% | 87% | 100% | 77% | 80% |
| SO-SO | 7% | 9% | 17% | 0 | 11% | 11% | 0 | 14% | 10% |
| DULL | 4% | 6% | 9% | 0 | 6% | 1% | 0 | 8% | 8% |
| <u>PERCEIVED UTILIZATION OF TALENTS:</u> | | | | | | | | | |
| FAIRLY WELL TO PERFECTLY | 92% | 88% | 87% | 100% | 71% | 90% | 80% | 71% | 80% |
| LITTLE OR NOT AT ALL | 7% | 12% | 13% | 0 | 29% | 9% | 20% | 29% | 20% |
| <u>PERCEIVED USE OF TRAINING:</u> | | | | | | | | | |
| FAIRLY WELL TO PERFECTLY | 91% | 79% | 80% | 100% | 51% | 91% | 80% | 46% | 77% |
| LITTLE OR NOT AT ALL | 9% | 21% | 20% | 0 | 49% | 9% | 20% | 53% | 23% |
| <u>REENLISTMENT INTENTIONS:</u> | | | | | | | | | |
| YES, OR PROBABLY YES | 65% | 56% | 63% | 60% | 66% | 75% | 80% | 71% | 75% |
| NO, OR PROBABLY NO | 32% | 12% | 30% | 40% | 34% | 25% | 20% | 9% | 23% |

* Columns may not add to 100 percent due to nonresponse or rounding

overall job satisfaction levels. Maintenance Staff Support Personnel (non-technical) report the lowest levels of satisfaction of any major job group identified. The somewhat low rate for positive reenlistment intent (56 percent) expressed by this group may be attributed to the seniority of its members (average of 165 months TAFMS) and the high possibility of retirement (29 percent indicate plans to retire at the end of their current enlistment period). Otherwise, reenlistment intentions across most specialty job groups are highly positive (60 percent or better).

First-enlistment (1-48 months TAFMS), second-enlistment (49-96 months TAFMS), and career (97+ months TAFMS) group data are listed in Table 28 and are compared to corresponding enlistment groups from other Mission Equipment Maintenance AFSCs surveyed during the previous fiscal year. Generally, enlistment groups of the current sample indicate higher levels of job satisfaction than do those of the comparative sample. This is demonstrated particularly in the areas of job interest and utilization of talents, especially for first-termers. The gap becomes narrowed in the areas of utilization of training and reenlistment intent showing opposite trends across enlistment groups. The inference to be made from this is that the perception that training is well utilized gradually decreases with time in service, while reenlistment intent increases.

Table 29 provides a comparison of job satisfaction information between experience groups in the current sample and those of the previous survey. Here again, the same trends identified in the comparison of TAFMS groups in the immediately preceding paragraph are noted among these enlistment groups. While perceptions of utilization of talents and job interest remain high, it appears as though members' perception of the utilization of training decreases as they become more senior in their field and take on duties and responsibilities far removed from the technical aspects on which they have received training. No serious problems were identified in the previous survey, and none are identified in this study.

Analysis of Write-in Comments

Occupational survey booklets include blank pages on which career ladder members may write in additional tasks or make comments about any subject. In addition, general background information extracted from job inventories may be used to address specific issues raised by career ladder personnel.

Review of job inventory write-in comments from survey sample respondents indicates concern among members performing electronic installation functions. Many comments suggested separation of EI from the maintenance function, since radar equipment is not actually assigned to their units for maintenance. Rather, they primarily perform installations and removals of equipment assigned to other units. Likewise, negative sentiments were rendered in regard to ABR course graduates' initial assignments to MOB units. Respondents representing the gaining units indicated that these junior airmen do not receive the additional training required due to the nature of the job. However, many respondents agreed that special removal and installation procedures should be taught by the gaining units. These expressions coincide

TABLE 28

TAFMS JOB SATISFACTION DATA
(PERCENT MEMBERS RESPONDING)

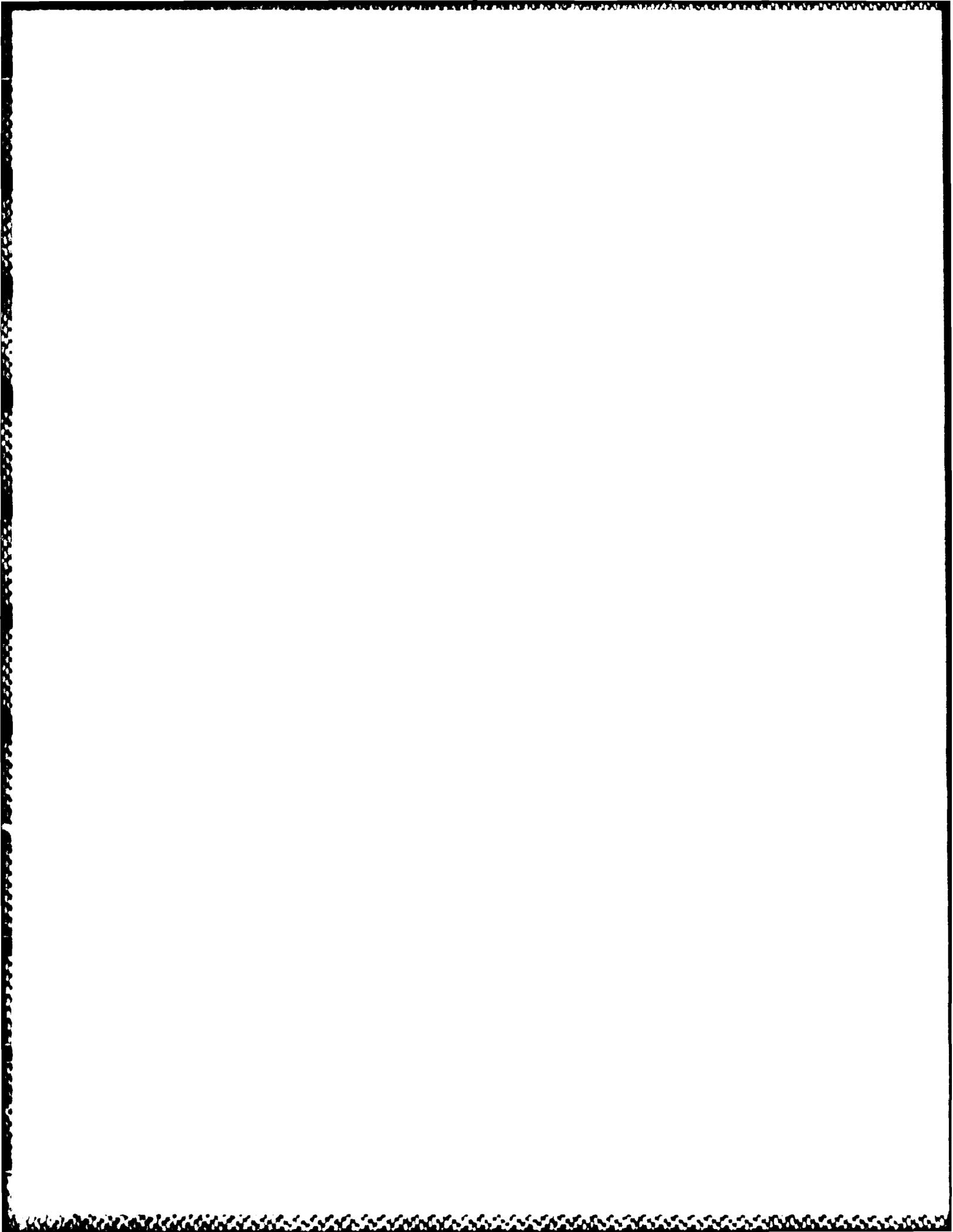
| | 1-48 MOS TAFMS | | 49-96 MOS TAFMS | | 97+ MOS TAFMS | |
|-------------------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
| | CURRENT SURVEY (N=288) | COMP SAMPLE* (N=3,924) | CURRENT SURVEY (N=165) | COMP SAMPLE* (N=2,613) | CURRENT SURVEY (N=316) | COMP SAMPLE* (N=3,573) |
| JOB INTERESTING | 85 | 64 | 81 | 62 | 83 | 72 |
| TALENTS WELL UTILIZED | 90 | 71 | 82 | 71 | 85 | 80 |
| TRAINING WELL UTILIZED | 85 | 80 | 82 | 77 | 75 | 75 |
| LIKELY TO REENLIST | 58 | 55 | 62 | 73 | 74 | 75 |
| PERCENT ELIGIBLES REENLISTED | | | | | | |
| FY86 | 50 | (56/112) | 59 | (38/64) | 95 | (59/62) |

* Includes personnel in Mission Equipment Maintenance AFSCs: 304X4, 309X0, 361X0, 404X0, 411X0A, 411X1A, 431X0C 432X0D, 462X0 surveyed in 1986

TABLE 29

COMPARISON OF JOB SATISFACTION DATA BETWEEN 1981 SURVEY AND CURRENT SURVEY
(PERCENT MEMBERS RESPONDING)

| | 1-48 MOS TAFMS | | 49-96 MOS TAFMS | | 97+ MOS TAFMS | |
|------------------------|------------------------|-------------------------|------------------------|-------------------------|------------------------|-------------------------|
| | CURRENT SURVEY (N=288) | PREVIOUS SAMPLE (N=253) | CURRENT SURVEY (N=165) | PREVIOUS SAMPLE (N=218) | CURRENT SURVEY (N=316) | PREVIOUS SAMPLE (N=277) |
| JOB INTERESTING | 85 | 77 | 81 | 77 | 83 | 75 |
| TALENTS WELL UTILIZED | 90 | 81 | 82 | 78 | 85 | 82 |
| TRAINING WELL UTILIZED | 85 | 81 | 82 | 77 | 75 | 82 |
| LIKELY TO REENLIST | 58 | 36 | 62 | 48 | 74 | 61 |



with the lower levels of job satisfaction indicators rendered by members in the EI Personnel cluster of jobs, discussed in the section on Job Satisfaction.

Other write-in comments indicated suggestions for enhancing the skills of the ABR graduate. These recommendations included the need for more hands-on training using test equipment and requirements for greater knowledge in reading and interpreting basic block diagrams. These potential problem areas were also identified in the analysis of the POIs, in which very few first-enlistment personnel, overall, or members across the 3-skill level shreds perform the task (G269) - "interpret plans, such as diagrams or schematics".

IMPLICATIONS

This survey was conducted primarily to obtain current data to assist training personnel in the evaluation and management of training programs for the Air Traffic Control Radar career ladder. Occupational survey data indicate technical jobs (production element) within this career ladder are relatively similar, while the career ladder as a whole is diverse. For example, the same types of technical operations (aligning, installing, performance checks, troubleshooting, etc.) are performed for all types of radar system configurations. The method in which these operations are performed may vary from one radar system or equipment to another. This is evidenced by the large number of personnel grouping together to form one major job--Air Traffic Control (ATC) Radar Maintenance Technicians. The key differentiating factor between major jobs identified in the structure of work was based upon the technical versus nontechnical nature of the job. Technical jobs broke out around categories of radar systems or system specific functions. The nontechnical jobs (staff, management support, and training) performed by 303X1 personnel revealed more distinct, yet interrelated, functions in comparison to the technical jobs. These distinctions were also identified in the previous survey. In addition, with the exception of two small independent jobs, all jobs identified in the 1981 survey are operating in the current career ladder structure. These findings indicate the career field structure has remained relatively stable over the last 6 years.

The introduction of new equipment items and 3-skill level shreds has had no major impact on the structure of work being performed in the field. However, these changes have produced a significant impact on career ladder training programs designed to accommodate them. While the STS (dated November 1981) was updated following the May 1981 occupational survey report, and the 3-skill level shred-out training was approved (October 1981) shortly thereafter, it appears as though the document was not adequately aligned to reflect these changes. Hence, the STS does not portray the diversity of jobs identified in the career ladder structure. Although the majority of the STS elements are supported by incumbent data, the large number of tasks not referenced yet performed by substantial percentages of career ladder members, and the inconsistency of the standard dictate that it be reviewed in depth by personnel involved in determining career ladder training.

Overall, the method of channelization of training based on the radar equipment to be maintained at the first base of assignment is in effect for all of the 3-level graduates, with the exception of E shred members. This is demonstrated by the fact that larger percentages of members in respective shreds maintain equipment designated for that particular shred. However, in the review of the POIs designed to support this method of training, there are many areas in which 3-skill level members who have received training on shred specific equipment are not being properly utilized to benefit from that training. For example, significantly larger percentages of E shred members maintain An/TPN-19 radar systems than the AN/MPN-13/14 system for which they have received ABR training. Similarly, large percentages of members of other shreds indicated they spend significant amounts of time performing tasks on radar systems for which they have not received formal training. This was discussed previously regarding B shred members maintaining An/MPN-13/14 systems, while E-shred members were not. Overall, ABR training designed to support the various 3-skill level shreds appears to be ambiguous. Likewise, data from the previous survey did not support the channelization proposal or the need for shreds. The relevancy of the current training methods, as specified for the various shreds, requires careful consideration and review to bring ABR training on line with career field needs. Still, relatively high levels of job satisfaction (better than 80 percent) in all areas, particularly utilization of training, were expressed by members across all shreds.

Generally, job satisfaction indicators across enlistment groups are high. However, indicators across career ladder specialty jobs showed lower levels for members performing nontechnical jobs than for those performing technical jobs. Personnel performing the jobs of Plans and Scheduling and Job Control report the lowest overall levels of job satisfaction, followed by Electronics Installation personnel. This general dissatisfaction among Job Controllers appears to be a continued trend since the last survey. Air Force managers and supervisors should be aware of these dissatisfying jobs, and attempt to implement measures to improve them.

APPENDIX A
SELECTED REPRESENTATIVE TASKS
FOR
CAREER LADDER STRUCTURE GROUPS

TABLE I

GROUP ID NUMBER AND TITLE: GRP059, ATC RADAR MAINTENANCE TECHNICIANS CLUSTER
 GROUP SIZE: N=366 PERCENT OF SAMPLE: 48%
 AVERAGE GRADE: E-5 AVERAGE TICF: 70 MONTHS
 AVERAGE TAFMS: 84 MONTHS

THE FOLLOWING ARE IN DESCENDING ORDER BY PERCENT MEMBERS PERFORMING:

| TASKS | PERCENT MEMBERS PERFORMING |
|-----------------------------------------------------------------------------------------------------|----------------------------|
| E150 PREPARE AFTO FORMS 349 (MAINTENANCE DATA COLLECTION RECORD) | 91 |
| F189 DRIVE SMALL GOVERNMENT VEHICLES, SUCH AS PICKUPS OR PASSENGER VEHICLES | 86 |
| T1441 PERFORMANCE CHECK AN/GPA-131 VIDEO MAPPER ASSEMBLIES, SUCH AS VIDEO CONVERTERS | 85 |
| T1442 PERFORMANCE CHECK AN/GPA-131 VIDEO MAPPER SUBASSEMBLIES, SUCH AS PCC | 84 |
| U1476 PERFORMANCE CHECK AN/GPA-133 CAMERAS | 83 |
| U1478 PERFORMANCE CHECK AN/GPA-133 DISPLAYS (IP-1017) | 82 |
| W1540 PERFORMANCE CHECK AN/TPX-42 OR-78 TRANSMITTER RECEIVER GROUPS | 81 |
| E142 PREPARE AFCC FORMS 142 (NOT REPARABLE THIS STATION (NRTS) VALIDATION) | 80 |
| U1490 TROUBLESHOOT AN/GPA-133 BRITE II SYSTEMS TO ASSEMBLY LEVEL, SUCH AS CONRAC MONITORS | 80 |
| T1436 ALIGN AN/GPA-131 VIDEO MAPPER VIDEO PROCESSORS | 80 |
| H361 REMOVE MINOR HARDWARE, SUCH AS DIALS, BULBS, AND CLAMPS | 79 |
| W1563 TROUBLESHOOT AN/TPX-42 RECEIVER TRANSMITTER GROUPS TO PCC LEVEL | 78 |
| W1533 PERFORM AN/TPX-42 VARIABLE STANDING WAVE RATIO (VSWR) MEASUREMENTS | 77 |
| H369 TROUBLESHOOT RADAR SYSTEM POWER SUPPLIES TO SUBASSEMBLY LEVEL | 70 |
| H343 PERFORM CORROSION CONTROL ON ANTENNA TOWERS | 69 |
| F194 ISSUE LOCAL JOB CONTROL NUMBERS | 68 |
| H336 INSTALL TIE WRAPS | 67 |
| D96 MAINTAIN TRAINING RECORDS | 64 |
| E1560 TROUBLESHOOT AN/TPX-42 INTERCONNECTING GROUPS TO PCC LEVEL | 63 |
| U1472 INSTALL AN/GPA-133 IP-1017 CRT | 62 |
| R1411 PERFORMANCE CHECK AN/GPN-T4 SUBASSEMBLIES, SUCH AS PCC | 59 |
| R1406 ALIGN AN/GPN-T4 PSEUDO PILOT PLAN POSITION INDICATORS (PPI) | 55 |
| R1405 ALIGN AN/GPN-T4 INTERFACE BOXES | 52 |
| R1404 ALIGN AN/GPN-T4 COMPUTERS | 51 |
| J475 ALIGN AN/GPN-20/21 AUTOMATIC FREQUENCY CONTROLS (AFC) | 50 |
| H331 INSTALL CRIMPED WIRING TERMINALS | 50 |
| E109 INPUT MAINTENANCE MANAGEMENT INFORMATION AND CONTROL SYSTEM (MMICS) DATA ON COMPUTER TERMINALS | 48 |

TABLE IA

GROUP ID NUMBER AND TITLE: GRP138, ASR MAINTENANCE TECHNICIANS
 GROUP SIZE: N=175 PERCENT OF SAMPLE: 23%
 AVERAGE GRADE: E-5 AVERAGE TICF: 76 MONTHS
 AVERAGE TAFMS: 90 MONTHS

THE FOLLOWING ARE IN DESCENDING ORDER BY PERCENT MEMBERS PERFORMING:

| TASKS | PERCENT MEMBERS PERFORMING |
|-------------------------------------------------------------------------------------------|----------------------------|
| J546 PERFORMANCE CHECK AN/GPN-20/21 NORMAL BALANCE LEVELS | 99 |
| J567 PERFORMANCE CHECK AN/GPN-20/21 TRANSMITTER POWER LEVELS | 99 |
| J569 PERFORMANCE CHECK AN/GPN-20/21 VOLTAGE STANDING RATIOS (VSWR) | 98 |
| J549 PERFORMANCE CHECK AN/GPN-20/21 NORMAL VIDEO GAINS | 98 |
| J544 PERFORMANCE CHECK AN/GPN-20/21 MTI VIDEO CANCELLATIONS | 97 |
| J539 PERFORMANCE CHECK AN/GPN-20/21 MTI CANCELLORS | 96 |
| J595 TROUBLESHOOT AN/GPN-20/21 PROCESSORS TO SUBASSEMBLY LEVEL | 95 |
| J548 PERFORMANCE CHECK AN/GPN-20/21 NORMAL IF | 95 |
| W1563 TROUBLESHOOT AN/TPX-42 RECEIVER TRANSMITTER GROUPS TO PCC LEVEL | 94 |
| W1532 PERFORM AN/TPX-42 TURN-ON OR TURN-OFF PROCEDURES | 94 |
| W1540 PERFORMANCE CHECK AN/TPX-42 OR-78 TRANSMITTER RECEIVER GROUPS | 93 |
| J488 ALIGN AN/GPN-20/21 MTI TEST GENERATORS | 93 |
| T1442 PERFORMANCE CHECK AN/GPA-131 VIDEO MAPPER SUBASSEMBLIES, SUCH AS PCC | 92 |
| J532 PERFORMANCE CHECK AN/GPN-20/21 LOG TEST GENERATORS | 91 |
| J494 ALIGN AN/GPN-20/21 PROCESSOR GATED OSCILLATORS | 91 |
| T1436 ALIGN AN/GPA-131 VIDEO MAPPER VIDEO PROCESSORS | 90 |
| T1446 REMOVE AN/GPA-131 VIDEO MAPPER SUBASSEMBLIES, SUCH AS PCC | 90 |
| J527 PERFORMANCE CHECK AN/GPN-20/21 AZIMUTH REFERENCE PULSES (ARP) | 89 |
| E154 PREPARE DD FORMS 1574 (SERVICEABLE TAG-MATERIEL) | 89 |
| J529 PERFORMANCE CHECK AN/GPN-20/21 FREQUENCY DIVERSITY DELAYS | 88 |
| F189 DRIVE SMALL GOVERNMENT VEHICLES, SUCH AS PICKUPS OR PASSENGER VEHICLES | 87 |
| J476 ALIGN AN/GPN-20/21 AZIMUTH PULSE GENERATOR ENCODERS | 87 |
| J497 ALIGN AN/GPN-20/21 SENSITIVITY TIMING CONSTANT (STC) CIRCUITS | 86 |
| J498 ALIGN AN/GPN-20/21 STABLE LOCAL OSCILLATORS (STALO) | 85 |
| J584 REMOVE AN/GPN-20/21 RECEIVER SUBASSEMBLIES, SUCH AS PCC | 83 |
| U1490 TROUBLESHOOT AN/GPA-133 BRITE II SYSTEMS TO ASSEMBLY LEVEL, SUCH AS CONRAC MONITORS | 83 |
| W1564 TROUBLESHOOT AN/TPX-42 TO ASSEMBLY LEVEL, SUCH AS INTER-FERENCE BLANKERS | 81 |
| U1452 ALIGN AN/GPA-133 CAMERA VIDEO AND TARGET ERASES | 79 |

TABLE IB

GROUP ID NUMBER AND TITLE: GRP137, AN/GSN-12 MAINTENANCE CREW
 GROUP SIZE: N=6 PERCENT OF SAMPLE: * (Less than 1 percent)
 AVERAGE GRADE: E-4 AVERAGE TICF: 45 MONTHS
 TAFMS: 52 MONTHS

THE FOLLOWING ARE IN DESCENDING ORDER BY PERCENT MEMBERS PERFORMING:

| TASKS | PERCENT MEMBERS PERFORMING |
|--------------------------------------------------------------------------------------------------------|----------------------------|
| J523 PERFORM AN/GPN-20/21 TURN-ON OR TURN-OFF PROCEDURES | 100 |
| J511 INSTALL AN/GPN-20/21 PROCESSOR SUBASSEMBLIES, SUCH AS PCC | 100 |
| Y1625 ALIGN AN/GSN-12 INDICATOR ALPHANUMERIC CIRCUITS | 100 |
| J534 PERFORMANCE CHECK AN/GPN-20/21 MAGNETRON FILAMENT VOLTAGES | 100 |
| Y1626 ALIGN AN/GSN-12 INDICATOR CURSOR CIRCUITS | 100 |
| J597 TROUBLESHOOT AN/GPN-20/21 REMOTING CONTROL GROUPS TO SUB-ASSEMBLY LEVEL | 100 |
| J514 INSTALL AN/GPN-20/21 RECEIVER SUBASSEMBLIES, SUCH AS PCC | 100 |
| J566 PERFORMANCE CHECK AN/GPN-20/21 TRANSMITTER FREQUENCIES | 100 |
| Y1652 PERFORM AN/GSN-12 TURN-ON OR TURN-OFF PROCEDURES | 100 |
| J520 INSTALL AN/GPN-20/21 TRANSMITTER SUBASSEMBLIES, SUCH AS PCC | 100 |
| J599 TROUBLESHOOT AN/GPN-20/21 TRANSMITTERS TO SUBASSEMBLY LEVEL | 100 |
| J590 REMOVE AN/GPN-20/21 TRANSMITTER SUBASSEMBLIES, SUCH AS PCC | 100 |
| Y1628 ALIGN AN/GSN-12 INDICATOR FLATFACE CORRECTION CIRCUITS | 100 |
| J596 TROUBLESHOOT AN/GPN-20/21 RECEIVERS TO SUBASSEMBLY LEVEL | 100 |
| Y1653 PERFORMANCE CHECK AN/GSN-12 DISPLAY CONTROLLERS (OK-316) | 100 |
| H332 INSTALL MINOR HARDWARE, SUCH AS DIALS, BULBS, AND CLAMPS | 100 |
| J494 ALIGN AN/GPN-20/21 PROCESSOR GATED OSCILLATORS | 100 |
| Y1655 PERFORMANCE CHECK AN/GSN-12 INDICATORS (OD-130) | 100 |
| J536 PERFORMANCE CHECK AN/GPN-20/21 MINIMUM DISCERNABLE SIGNALS (MDS) | 83 |
| Y1630 ALIGN AN/GSN-12 INDICATOR TIMING OSCILLATORS | 83 |
| I384 ALIGN AN/GPN-12 TRANSMITTER FREQUENCIES | 83 |
| Y1629 ALIGN AN/GSN-12 INDICATOR SWEEP CIRCUITS | 83 |
| J499 ALIGN AN/GPN-20/21 TRANSMITTER MODULATOR CONTROLS | 83 |
| J1636 INSTALL AN/GSN-12 DDG COMPONENTS, SUCH AS PRINTED WIRING BOARDS (PWB) OR CATHODE RAY TUBES (CRT) | 83 |
| Y1680 TROUBLESHOOT AN/GSN-12 REMOTING GROUPS FROM SUBASSEMBLY TO COMPONENT LEVEL, SUCH AS PWB | 83 |
| J552 PERFORMANCE CHECK AN/GPN-20/21 RANGE AZIMUTH GATING (RAG) CIRCUITS | 83 |
| J565 PERFORMANCE CHECK AN/GPN-20/21 SYSTEM VIDEO LEVELS | 83 |
| Y1654 PERFORMANCE CHECK AN/GSN-12 EMERGENCY BATTERIES | 83 |
| H362 REMOVE RADAR SYSTEM POWER SUPPLIES | 83 |
| J542 PERFORMANCE CHECK AN/GPN-20/21 MTI LOCK TEST PULSE CIRCUITS | 83 |
| J495 ALIGN AN/GPN-20/21 PULSE RECURRENT FREQUENCY (PRF) CIRCUITS | 83 |

TABLE IC

GROUP ID NUMBER AND TITLE: GRP169, AN/GPN-22 CONSOLIDATED HANDS-ON-TRAINING TECHNICIANS

GROUP SIZE: N=16

PERCENT OF SAMPLE: 2%

AVERAGE GRADE: E-5

AVERAGE TICF: 69 MONTHS

AVERAGE TAFMS: 75 MONTHS

THE FOLLOWING ARE IN DESCENDING ORDER BY PERCENT MEMBERS PERFORMING:

| TASKS | PERCENT MEMBERS PERFORMING |
|----------------------------------------------------------------------------------------------|----------------------------|
| K699 TROUBLESHOOT AN/GPN-22 RECEIVERS TO SUBASSEMBLY LEVEL, SUCH AS MODULES | 100 |
| K697 TROUBLESHOOT AN/GPN-22 RDTG TO SUBASSEMBLY LEVEL, SUCH AS MODULES | 100 |
| K609 ALIGN AN/GPN-22 PAR PERFORMANCE FALSE ALARM RATES | 100 |
| K600 ALIGN AN/GPN-22 ANTENNA COMPRESSOR DEHYDRATORS | 100 |
| K641 INSTALL AN/GPN-22 RECEIVER SUBASSEMBLIES, SUCH AS MODULES | 100 |
| K616 ALIGN AN/GPN-22 RDTG VIDEO MULTITRIGGER COMBINERS AND SEPARATORS | 100 |
| K690 ROTATE AN/GPN-22 MAINTENANCE TOWERS | 100 |
| K705 TROUBLESHOOT AN/GPN-22 TRANSMITTERS FROM MODULE TO PCC LEVEL | 100 |
| K629 ALIGN AN/GPN-22 TRAVELING WAVE TUBE (TWT) OPERATING VOLTAGES | 100 |
| K608 ALIGN AN/GPN-22 INTERMEDIATE FREQUENCY (IF) PHASE OF ANGLE TRACK RECEIVERS | 100 |
| K630 ALIGN AN/GPN-22 TWT COLLECTOR CURRENTS | 100 |
| K706 TROUBLESHOOT AN/GPN-22 TRANSMITTERS TO SUBASSEMBLY LEVEL, SUCH AS MODULES | 100 |
| K665 PERFORMANCE CHECK AN/GPN-22 TRANSMITTER AND RECEIVER INTERRELATED AREAS | 100 |
| K658 PERFORMANCE CHECK AN/GPN-22 RDTG DIGITAL TO DIGITAL CONVERTER ALARMS | 94 |
| K604 ALIGN AN/GPN-22 CROSS FIELD AMPLIFIER (CFA) CURRENTS | 94 |
| K623 ALIGN AN/GPN-22 TRANSMITTER AND RECEIVER INTERRELATED AREA TRACK SYSTEM TIMING CIRCUITS | 94 |
| H361 REMOVE MINOR HARDWARE, SUCH AS DIALS, BULBS, AND CLAMPS | 94 |
| K694 TROUBLESHOOT AN/GPN-22 INDICATORS FROM MODULE TO PCC LEVEL | 94 |
| K633 INSTALL AN/GPN-22 ABPC UNIT SUBASSEMBLIES, SUCH AS MODULES | 94 |
| H336 INSTALL TIE WRAPS | 94 |
| E157 PREPARE DD FORMS 1577 (UNSERVICEABLE (CONDEMNED) TAG MATERIEL) | 94 |
| K698 TROUBLESHOOT AN/GPN-22 RECEIVERS FROM MODULE TO PCC LEVEL | 94 |
| K679 REMOVE AN/GPN-22 RECEIVER SUBASSEMBLIES, SUCH AS MODULES | 94 |
| K696 TROUBLESHOOT AN/GPN-22 RDTG FROM MODULE TO PCC LEVEL | 94 |

TABLE ID

GROUP ID NUMBER AND TITLE: GRP147, AN/GPN-25 RADAR MAINTENANCE CREW
 GROUP SIZE: N=6 PERCENT OF SAMPLE: *
 AVERAGE GRADE: E-5 AVERAGE TICF: 105 MONTHS
 AVERAGE TAFMS: 127 MONTHS

THE FOLLOWING ARE IN DESCENDING ORDER BY PERCENT MEMBERS PERFORMING:

| TASKS | PERCENT MEMBERS PERFORMING |
|------------------------------------------------------------------------------------------------------|----------------------------|
| Q1332 PERFORMANCE CHECK AN/GPN-25 PROCESSOR STC BALANCE | 100 |
| Q1330 PERFORMANCE CHECK AN/GPN-25 PROCESSOR MTD VIDEOS | 100 |
| Q1253 ALIGN AN/GPN-25 PERFORMANCE MONITOR RECEIVER TEST SIGNALS | 100 |
| Q1326 PERFORMANCE CHECK AN/GPN-25 PROCESSOR FREQUENCY DIVERSITY DELAYS | 100 |
| Q1349 PERFORMANCE CHECK AN/GPN-25 TRANSMITTER OUTPUT SPECTRUMS | 100 |
| F200 PERFORM OPERATOR MAINTENANCE ON VEHICLES | 100 |
| H345 PERFORM CORROSION CONTROL ON EQUIPMENT RACKS | 100 |
| Q1398 TROUBLESHOOT AN/GPN-25 SYSTEMS TO ASSEMBLY LEVEL, SUCH AS TRANSMITTERS | 100 |
| K608 ALIGN AN/GPN-22 INTERMEDIATE FREQUENCY (IF) PHASE OF ANGLE TRACK RECEIVERS | 100 |
| Q1329 PERFORMANCE CHECK AN/GPN-25 PROCESSOR MTD LOCK TEST PULSES | 100 |
| Q1324 PERFORMANCE CHECK AN/GPN-25 PPI GENERAL OPERATIONS | 100 |
| Q1340 PERFORMANCE CHECK AN/GPN-25 RECEIVER STALO | 100 |
| F189 DRIVE SMALL GOVERNMENT VEHICLES, SUCH AS PICKUPS OR PASSENGER VEHICLES | 100 |
| Q1350 PERFORMANCE CHECK AN/GPN-25 TRANSMITTER POWER OUTPUT LEVELS | 100 |
| E151 PREPARE AFTO FORMS 350 (REPARABLE ITEM PROCESSING TAG) | 100 |
| W1507 ALIGN AN/TPX-42 AN/TPX-49 TRANSPONDER SETS | 100 |
| Q1328 PERFORMANCE CHECK AN/GPN-25 PROCESSOR MTD FILTER TEST PULSES | 100 |
| W1541 PERFORMANCE CHECK AN/TPX-42 RANGE AZIMUTH BEACON MONITOR (RABM) TRANSPONDER SETS | 100 |
| Q1346 PERFORMANCE CHECK AN/GPN-25 TRANSMITTER FREQUENCIES | 100 |
| Q1351 PERFORMANCE CHECK AN/GPN-25 TRANSMITTER PULSE ALIGNMENTS | 100 |
| Q1337 PERFORMANCE CHECK AN/GPN-25 RECEIVER MTI LOCK TEST PULSES | 100 |
| Q1252 ALIGN AN/GPN-25 PERFORMANCE MONITOR | 100 |
| Q1395 TROUBLESHOOT AN/GPN-25 RECEIVERS TO SUBASSEMBLY LEVEL, SUCH AS MODULES | 100 |
| Q1336 PERFORMANCE CHECK AN/GPN-25 RECEIVER LOCK PULSES | 100 |
| K602 ALIGN AN/GPN-22 ANTENNA POSITION RUNWAY POTENTIOMETERS | 100 |
| E152 PREPARE DD FORMS 1348-6 (DOD SINGLE LINE ITEM REQUISITION SYSTEM DOCUMENT (MANUAL - LONG FORM)) | 100 |
| U1465 ALIGN AN/GPA-133 TRIGGER VIDEO COMPENSATOR (TVC) CHANNELS | 83 |
| U1459 ALIGN AN/GPA-133 NORTH-SOUTH DEFLECTION AMPLIFIERS | 83 |

TABLE IE

GROUP ID NUMBER AND TITLE: GRP197, PAR MAINTENANCE TECHNICIANS
 GROUP SIZE: N=26 PERCENT OF SAMPLE: 3%
 AVERAGE GRADE: E-5 AVERAGE TICF: 74 MONTHS
 AVERAGE TAFMS: 99 MONTHS

THE FOLLOWING ARE IN DESCENDING ORDER BY PERCENT MEMBERS PERFORMING:

| TASKS | PERCENT MEMBERS PERFORMING |
|-------------------------------------------------------------------------------------------|----------------------------|
| T1441 PERFORMANCE CHECK AN/GPA-131 VIDEO MAPPER ASSEMBLIES, SUCH AS VIDEO CONVERTERS | 100 |
| U1476 PERFORMANCE CHECK AN/GPA-133 CAMERAS | 100 |
| U1478 PERFORMANCE CHECK AN/GPA-133 DISPLAYS (IP-1017) | 100 |
| U1490 TROUBLESHOOT AN/GPA-133 BRITE II SYSTEMS TO ASSEMBLY LEVEL, SUCH AS CONRAC MONITORS | 96 |
| U1466 ALIGN AN/GPA-133 TV CAMERA LINEARITY | 96 |
| T1435 ALIGN AN/GPA-131 VIDEO MAPPER VIDEO BIAS FOCUS CIRCUITS | 96 |
| U1475 INSTALL AN/GPA-133 TV CAMERA VIDICONS | 96 |
| U1454 ALIGN AN/GPA-133 EAST-WEST DEFLECTION AMPLIFIERS | 96 |
| T1432 ALIGN AN/GPA-131 VIDEO MAPPER DEFLECTION AMPLIFIERS | 96 |
| N832 ALIGN AN/FPN-62 MAP GENERATOR ASSEMBLIES | 96 |
| U1471 INSTALL AN/GPA-133 COMPONENTS, SUCH AS RESISTORS AND CAPACITORS | 92 |
| N879 TROUBLESHOOT AN/FPN-62 REMOTING SYSTEMS | 92 |
| N857 PERFORMANCE CHECK AN/FPN-62 INDICATING GROUPS | 92 |
| U1459 ALIGN AN/GPA-133 NORTH-SOUTH DEFLECTION AMPLIFIERS | 92 |
| N858 PERFORMANCE CHECK AN/FPN-62 RECEIVER GROUPS | 92 |
| N859 PERFORMANCE CHECK AN/FPN-62 REMOTING GROUPS | 92 |
| U1488 REMOVE AN/GPA-133 TV CAMERA VIDICONS | 92 |
| N839 ALIGN AN/FPN-72 TRANSMITTER ASSEMBLIES | 92 |
| W1518 ALIGN AN/TPX-42 VIDEO SIGNAL PROCESSORS (VSP) | 92 |
| N838 ALIGN AN/FPN-62 SYSTEM RF CONVERTERS | 88 |
| U1455 ALIGN AN/GPA-133 GRATING BAR GENERATORS | 88 |
| N816 ALIGN AN/FPN-62 ANGLE DATA SYSTEMS | 88 |
| U1453 ALIGN AN/GPA-133 CQF-17 MAINTENANCE MONITORS | 88 |
| N822 ALIGN AN/FPN-62 DATA MOVING TARGET INDICATOR (DMTI) INTERVAL | 88 |
| N834 ALIGN AN/FPN-62 REMOTING SYSTEMS | 85 |
| L713 ALIGN AN/FPN-47 ASR TRANSMITTERS | 81 |
| L725 REMOVE AN/FPN-47 ASR COMPONENTS, SUCH AS RESISTORS AND ELECTRON TUBES | 81 |
| L720 PERFORMANCE CHECK AN/FPN-47 ASR | 77 |
| L709 ALIGN AN/FPN-47 ASR MAINTENANCE INDICATORS | 77 |
| L715 INSTALL AN/FPN-47 ASR COMPONENTS, SUCH AS RESISTORS AND ELECTRON TUBES | 77 |
| L726 TROUBLESHOOT AN/FPN-47 ASR SUBASSEMBLIES, SUCH AS PCC AND MODULES | 77 |

TABLE IF

GROUP ID NUMBER AND TITLE: GRP267, AN/FPN-62 (PAR) CREW
 GROUP SIZE: N=29 PERCENT OF SAMPLE: 4%
 AVERAGE GRADE: E-4 AVERAGE TICF: 46 MONTHS
 AVERAGE TAFMS: 50 MONTHS

THE FOLLOWING ARE IN DESCENDING ORDER BY PERCENT MEMBERS PERFORMING:

| TASKS | PERCENT MEMBERS PERFORMING |
|-------------------------------------------------------------------------------------|----------------------------|
| N859 PERFORMANCE CHECK AN/FPN-62 REMOTING GROUPS | 100 |
| N816 ALIGN AN/FPN-62 ANGLE DATA SYSTEMS | 100 |
| N818 ALIGN AN/FPN-62 ANTENNA SERVO DATA SYSTEMS | 100 |
| N833 ALIGN AN/FPN-62 PERFORMANCE MONITORS | 100 |
| N881 TROUBLESHOOT AN/FPN-62 TRANSMITTERS TO SUBASSEMBLY LEVEL, SUCH AS PCC | 100 |
| N879 TROUBLESHOOT AN/FPN-62 REMOTING SYSTEMS TO SUBASSEMBLY LEVEL, SUCH AS PCC | 100 |
| N880 TROUBLESHOOT AN/FPN-62 SYSTEMS TO ASSEMBLY LEVEL, SUCH AS THE RECEIVER | 100 |
| N858 PERFORMANCE CHECK AN/FPN-62 RECEIVER GROUPS | 100 |
| N857 PERFORMANCE CHECK AN/FPN-62 INDICATING GROUPS | 100 |
| N865 REMOVE AN/FPN-62 INDICATING SYSTEM SUBASSEMBLIES, SUCH AS PCC | 97 |
| N868 REMOVE AN/FPN-62 RECEIVER SUBASSEMBLIES, SUCH AS PCC | 97 |
| N878 TROUBLESHOOT AN/FPN-62 RECEIVERS TO SUBASSEMBLY LEVEL, SUCH AS PCC | 97 |
| N837 ALIGN AN/FPN-62 SYSTEM MOVING TARGET INDICATORS (MTI) | 97 |
| N829 ALIGN AN/FPN-62 INDICATOR ASSEMBLIES | 97 |
| N835 ALIGN AN/FPN-62 RF SWITCH BLADES | 93 |
| N815 ALIGN AN/FPN-62 ANGLE DATA GENERATOR (ADG) MULTIPLICATION DELAY ASSEMBLIES | 93 |
| F189 DRIVE SMALL GOVERNMENT VEHICLES, SUCH AS PICKUPS OR PASSENGER VEHICLES | 93 |
| N860 PERFORMANCE CHECK AN/FPN-62 TRANSMITTER GROUPS | 93 |
| E150 PREPARE AFTO FORMS 349 (MAINTENANCE DATA COLLECTION RECORD) | 93 |
| N851 INSTALL AN/FPN-62 REMOTING SYSTEM SUBASSEMBLIES, SUCH AS PCC | 93 |
| U1478 PERFORMANCE CHECK AN/GPA-133 DISPLAYS (IP-1017) | 90 |
| N832 ALIGN AN/FPN-62 MAP GENERATOR ASSEMBLIES | 90 |
| N843 INSTALL AN/FPN-62 ANTENNAS | 86 |
| N840 ALIGN AN/FPN-62 WAVEGUIDE TUNER AND ANTENNA VSWR | 86 |
| U1489 TROUBLESHOOT AN/GPA-133 BRITE II ASSEMBLIES TO SUBASSEMBLY LEVEL, SUCH AS PCC | 86 |
| N862 REMOVE AN/FPN-62 ANTENNA SUBASSEMBLIES, SUCH AS PCC | 86 |
| N825 ALIGN AN/FPN-62 DMTI SYNCHRONIZER CLOCK DELAY ASSEMBLIES | 86 |
| N863 REMOVE AN/FPN-62 ANTENNAS | 86 |
| U1471 INSTALL AN/GPA-133 COMPONENTS, SUCH AS RESISTORS AND CAPACITORS | 83 |

TABLE IG

GROUP ID NUMBER AND TITLE: GRP093, ASR/PAR GENERALISTS
 GROUP SIZE: N=102 PERCENT OF SAMPLE: 13%
 AVERAGE GRADE: E-5 AVERAGE TICF: 66 MONTHS
 AVERAGE TAFMS: 79 MONTHS

THE FOLLOWING ARE IN DESCENDING ORDER BY PERCENT MEMBERS PERFORMING:

| TASKS | PERCENT MEMBERS PERFORMING |
|----------------------------------------------------------------------------------------|----------------------------------|
| I429 PERFORMANCE CHECK AN/GPN-12 TRANSMITTER FREQUENCIES | 98 |
| I430 PERFORMANCE CHECK AN/GPN-12 TRANSMITTER METER READINGS | 98 |
| I412 PERFORMANCE CHECK AN/GPN-12 MTI GAIN AND BALANCE UNITS | 97 |
| I378 ALIGN AN/GPN-12 NORMAL CHANNELS | 96 |
| I428 PERFORMANCE CHECK AN/GPN-12 THREE TIMES FAULT CIRCUITS | 96 |
| E150 PREPARE AFTO FORMS 349 (MAINTENANCE DATA COLLECTION RECORD) | 93 |
| I434 PERFORMANCE CHECK RECOVERY TIME OF AN/GPN-12 RECEIVERS | 89 |
| T1422 PERFORMANCE CHECK AN/GPA-131 VIDEO MAPPER SUBASSEMBLIES, SUCH AS PCC | 89 |
| I410 PERFORMANCE CHECK AN/GPN-12 LINE DRIVERS | 86 |
| W1516 ALIGN AN/TPX-42 RECEIVER TRANSMITTER GROUPS | 86 |
| U1489 TROUBLESHOOT AN/GPA-133 BRITE II ASSEMBLIES TO SUBASSEMBLY LEVEL, SUCH AS PCC | 82 |
| W1537 PERFORMANCE CHECK AN/TPX-42 INDICATOR GROUPS | 79 |
| Z1691 PERFORMANCE CHECK PIDP INDICATOR GROUPS | 74 |
| W1539 PERFORMANCE CHECK AN/TPX-42 INTERFERENCE BLANKERS | 73 |
| W1543 PERFORMANCE CHECK AN/TPX-42 VSP | 73 |
| T1431 ALIGN AN/GPA-131 VIDEO MAPPER CATHODE RAY TUBE (CRT) FOCUS COILS | 73 |
| W1538 PERFORMANCE CHECK AN/TPX-42 INTERCONNECTING GROUPS | 72 |
| R1410 PERFORMANCE CHECK AN/GPN-T4 ASSEMBLIES, SUCH AS INTERFACE BOXES | 68 |
| R1411 PERFORMANCE CHECK AN/GPN-T4 SUBASSEMBLIES, SUCH AS PCC | 65 |
| H365 RESEARCH TECHNICAL PUBLICATIONS | 60 |
| C38 CERTIFY STATUS OF PARTS, SUCH AS REPARABLE, SERVICEABLE OR CONDEMNED | 56 |

TABLE II

GROUP ID NUMBER AND TITLE: GRP053, RADAR MAINTENANCE SUPERVISORY PERSONNEL CLUSTER
 GROUP SIZE: N=34 PERCENT OF SAMPLE: 4%
 AVERAGE GRADE: E-6 AVERAGE TICF: 147 MONTHS
 AVERAGE TAFMS: 185 MONTHS

THE FOLLOWING ARE IN DESCENDING ORDER BY PERCENT MEMBERS PERFORMING:

| TASKS | PERCENT MEMBERS PERFORMING |
|--------------------------------------------------------------------------------|----------------------------|
| B25 COUNSEL PERSONNEL ON PERSONAL OR MILITARY-RELATED MATTERS | 97 |
| A17 PLAN WORK ASSIGNMENTS | 97 |
| C74 WRITE APR | 94 |
| B32 SUPERVISE AIR TRAFFIC CONTROL RADAR SPECIALISTS (AFSC 30351) | 94 |
| B31 ORIENT NEWLY ASSIGNED PERSONNEL | 94 |
| A2 DETERMINE REQUIREMENTS FOR SUPPLIES | 91 |
| A11 ESTABLISH WORK SCHEDULES | 91 |
| D96 MAINTAIN TRAINING RECORDS | 88 |
| C78 WRITE REPLIES TO INSPECTION REPORTS | 88 |
| A1 DETERMINE REQUIREMENTS FOR PERSONNEL | 88 |
| E110 INVENTORY TOOLS, EQUIPMENT, OR SUPPLIES | 85 |
| D80 ASSIGN ON-THE-JOB TRAINING (OJT) TRAINERS | 85 |
| A8 DEVELOP WORK PROCEDURES | 85 |
| E111 MAINTAIN FILES | 85 |
| C72 PERFORM SELF-INSPECTIONS | 79 |
| C38 CERTIFY STATUS OF PARTS, SUCH AS REPARABLE, SERVICEABLE OR CONDEMNED | 79 |
| E157 PREPARE DD FORMS 1577 (UNSERVICEABLE (CONDEMNED) TAG MATERIEL) | 76 |
| E176 VERIFY DUE-OUT VALIDATION LISTINGS | 76 |
| E178 VERIFY PRIORITY MONITOR REPORTS (D-18) | 76 |
| E158 PREPARE DD FORMS DD 1577-2 (UNSERVICEABLE (REPARABLE) TAG MATERIEL) | 74 |
| E151 PREPARE AFTO FORMS 350 (REPARABLE ITEM PROCESSING TAG) | 74 |
| B29 IMPLEMENT SELF-INSPECTION PROGRAMS | 74 |
| E175 VERIFY DUE IN FROM MAINTENANCE (DIFM) DOCUMENT LISTINGS | 74 |
| B33 SUPERVISE AIR TRAFFIC CONTROL RADAR TECHNICIANS (AFSC 30371) | 74 |
| C48 EVALUATE MAINTENANCE PROCEDURES | 71 |
| B28 IMPLEMENT SECURITY PROGRAMS | 68 |
| C47 EVALUATE MAINTENANCE DATA COLLECTION REPORTS | 68 |
| A22 SCHEDULE TEMPORARY DUTY | 65 |
| D83 CONDUCT SAFETY TRAINING | 65 |
| E142 PREPARE AFCC FORMS 142 (NOT REPARABLE THIS STATION (NRTS) VALIDATION) | 62 |
| E115 MAINTAIN PROPERTY CUSTODY AUTHORIZATION/CUSTODY RECEIPT LISTINGS (CA/CRL) | 62 |

11A

GROUP ID NUMBER AND TITLE: GRP181, RADAR MAINTENANCE WORKCENTER NCOICs
 GROUP SIZE: N=18 PERCENT OF SAMPLE: 2%
 AVERAGE GRADE: E-6 AVERAGE TICF: 158 MONTHS
 AVERAGE TAFMS: 196 MONTHS

THE FOLLOWING ARE IN DESCENDING ORDER BY PERCENT MEMBERS PERFORMING:

| TASKS | PERCENT MEMBERS PERFORMING |
|----------------------------------------------------------------------------------------------|----------------------------|
| H307 ALIGN RADAR SYSTEM POWER SUPPLIES | 100 |
| B27 IMPLEMENT SAFETY PROGRAMS | 100 |
| B25 COUNSEL PERSONNEL ON PERSONAL OR MILITARY-RELATED MATTERS | 100 |
| E154 PREPARE DD FORMS 1574 (SERVICEABLE TAG-MATERIEL) | 100 |
| A2 DETERMINE REQUIREMENTS FOR SUPPLIES | 100 |
| A17 PLAN WORK ASSIGNMENTS | 100 |
| A12 PARTICIPATE IN MEETINGS, SUCH AS STAFF MEETINGS, BRIEFINGS, CONFERENCES, OR WORKSHOPS | 100 |
| E151 PREPARE AFTO FORMS 350 (REPARABLE ITEM PROCESSING TAG) | 100 |
| E129 PREPARE AF FORMS 2413 (SUPPLY CONTROL LOG) | 94 |
| C44 EVALUATE INDIVIDUALS FOR RECOGNITION | 94 |
| E173 REVIEW MASTER BENCH STOCK LISTINGS (S04) | 94 |
| B37 WRITE CORRESPONDENCE | 94 |
| C61 INDORSE AIRMAN PERFORMANCE REPORTS (ARR) | 94 |
| C74 WRITE APR | 94 |
| C52 EVALUATE PERSONNEL FOR COMPLIANCE WITH PERFORMANCE STANDARDS | 94 |
| A8 DEVELOP WORK PROCEDURES | 94 |
| E148 PREPARE AFTO FORMS 22 (TECHNICAL ORDER SYSTEM PUBLICATION IMPROVEMENT REPORT AND REPLY) | 89 |
| C72 PERFORM SELF-INSPECTIONS | 89 |
| D85 DETERMINE OJT REQUIREMENTS | 89 |
| C77 WRITE RECOMMENDATIONS FOR AWARDS OR DECORATIONS | 89 |
| B32 SUPERVISE AIR TRAFFIC CONTROL RADAR SPECIALISTS (AFSC 30351) | 89 |
| B33 SUPERVISE AIR TRAFFIC CONTROL RADAR TECHNICIANS (AFSC 30371) | 89 |
| E140 PREPARE AF FORMS 601 (EQUIPMENT ACTION REQUEST) | 88 |
| F187 DISPATCH MAINTENANCE PERSONNEL | 88 |
| E179 VERIFY SUPPLY DUE-OUT LISTINGS (R-35) | 83 |
| C60 EVALUATE WORK SCHEDULES | 83 |
| D96 MAINTAIN TRAINING RECORDS | 83 |
| H302 ALIGN ACTIVE RADAR TARGET SIMULATORS (REFLECTORS) | 83 |
| C51 EVALUATE PERFORMANCE OF NEWLY INSTALLED EQUIPMENT | 78 |
| A3 DETERMINE TRANSPORTATION REQUIREMENTS | 78 |
| C62 INITIATE UNSATISFACTORY REPORTS | 78 |
| A23 WRITE JOB DESCRIPTIONS | 78 |
| E114 MAINTAIN PREVENTIVE MAINTENANCE INSPECTION (PM) LISTINGS | 78 |
| C45 EVALUATE INSPECTION PROCEDURES | 76 |

TABLE IIB

GROUP ID NUMBER AND TITLE: GRP184, MAINTENANCE SUPERVISORS
 GROUP SIZE: N=6 PERCENT OF SAMPLE: *
 AVERAGE GRADE: E-7 AVERAGE TICF: 169 MONTHS
 AVERAGE TAFMS: 222 MONTHS

THE FOLLOWING ARE IN DESCENDING ORDER BY PERCENT MEMBERS PERFORMING:

| TASKS | PERCENT MEMBERS PERFORMING |
|--------------------------------------------------------------------------------|----------------------------|
| E111 MAINTAIN FILES | 100 |
| C74 WRITE APR | 100 |
| B31 ORIENT NEWLY ASSIGNED PERSONNEL | 100 |
| B27 IMPLEMENT SAFETY PROGRAMS | 100 |
| B25 COUNSEL PERSONNEL ON PERSONAL OR MILITARY-RELATED MATTERS | 100 |
| C77 WRITE RECOMMENDATIONS FOR AWARDS OR DECORATIONS | 100 |
| A11 ESTABLISH WORK SCHEDULES | 100 |
| B34 SUPERVISE APPRENTICE AIR TRAFFIC CONTROL RADAR SPECIALISTS (AFSC 30331) | 100 |
| C44 EVALUATE INDIVIDUALS FOR RECOGNITION | 100 |
| D96 MAINTAIN TRAINING RECORDS | 100 |
| B32 SUPERVISE AIR TRAFFIC CONTROL RADAR SPECIALISTS (AFSC 30351) | 100 |
| C60 EVALUATE WORK SCHEDULES | 83 |
| C48 EVALUATE MAINTENANCE PROCEDURES | 83 |
| AB DEVELOP WORK PROCEDURES | 83 |
| E118 MAINTAIN TECHNICAL ORDER FILES | 83 |
| E173 REVIEW MASTER BENCH STOCK LISTINGS (S04) | 83 |
| B28 IMPLEMENT SECURITY PROGRAMS | 83 |
| B37 WRITE CORRESPONDENCE | 83 |
| C78 WRITE REPLIES TO INSPECTION REPORTS | 83 |
| B33 SUPERVISE AIR TRAFFIC CONTROL RADAR TECHNICIANS (AFSC 30371) | 83 |
| E136 PREPARE AF FORMS 2446 (SCHEDULE OF TECHNICIAN AVAILABILITY) | 83 |
| E114 MAINTAIN PREVENTIVE MAINTENANCE INSPECTION (PMI) LISTINGS | 83 |
| E178 VERIFY PRIORITY MONITOR REPORTS (D-18) | 83 |
| C61 INDORSE AIRMAN PERFORMANCE REPORTS (APR) | 83 |
| E176 VERIFY DUE-OUT VALIDATION LISTINGS (M-30) | 83 |
| C47 EVALUATE MAINTENANCE DATA COLLECTION REPORTS | 67 |
| E115 MAINTAIN PROPERTY CUSTODY AUTHORIZATION/CUSTODY RECEIPT LISTINGS (CA/CRL) | 67 |
| C52 EVALUATE PERSONNEL FOR COMPLIANCE WITH PERFORMANCE STANDARDS | 67 |
| C76 WRITE INSPECTION REPORTS | 67 |
| C73 REVIEW CORRESPONDENCE | 67 |
| F187 DISPATCH MAINTENANCE PERSONNEL | 50 |
| D100 SELECT INDIVIDUALS FOR SPECIALIZED TRAINING | 50 |

TABLE IIC

GROUP ID NUMBER AND TITLE: GRP125, ELECTRONICS INSTALLATION TEAM CHIEFS
 GROUP SIZE: N=6 PERCENT OF SAMPLE: *
 AVERAGE GRADE: E-6 AVERAGE TICF: 146 MONTHS
 AVERAGE TAFMS: 158 MONTHS

THE FOLLOWING ARE IN DESCENDING ORDER BY PERCENT MEMBERS PERFORMING:

| TASKS | PERCENT MEMBERS PERFORMING |
|------------------------------------------------------------------------------------------------------------|----------------------------|
| B32 SUPERVISE AIR TRAFFIC CONTROL RADAR SPECIALISTS (AFSC 30351) | 100 |
| B35 SUPERVISE CIVILIAN PERSONNEL | 100 |
| A3 DETERMINE TRANSPORTATION REQUIREMENTS | 100 |
| F211 SIGN OUT EQUIPMENT FOR INSTALLATION PROJECTS | 100 |
| E144 PREPARE AFCC FORMS 262 (SCHEME PACKAGE REVIEW) | 100 |
| C74 WRITE APR | 100 |
| B37 WRITE CORRESPONDENCE | 83 |
| F185 CONNECT PRIMARY POWER TO RADAR SYSTEMS | 83 |
| C64 INSPECT TEAM MEMBERS FOR REQUIRED PERSONAL EQUIPMENT | 83 |
| A17 PLAN WORK ASSIGNMENTS | 83 |
| F183 CONDUCT OPERATIONAL TESTS OF NEWLY INSTALLED EQUIPMENT | 83 |
| F184 CONDUCT SHAKEDOWN (HOT CHECKS TESTS) | 83 |
| B27 IMPLEMENT SAFETY PROGRAMS | 83 |
| E122 PREPARE AF FORMS 1261 (INFORMATION SYSTEMS ACCEPTANCE, COMMISSIONING, AND REMOVAL CERTIFICATES) | 83 |
| C73 REVIEW CORRESPONDENCE | 83 |
| F215 UPDATE SCHEME PACKAGES | 83 |
| D96 MAINTAIN TRAINING RECORDS | 83 |
| D83 CONDUCT SAFETY TRAINING | 67 |
| G241 INSTALL CONDUITS (CABLE TROUGHS) | 67 |
| F216 VERIFY RECEIPT OF SCHEME MATERIALS AT INSTALLATION POINTS | 67 |
| B24 CONDUCT BRIEFINGS, OTHER THAN CREW BRIEFINGS | 67 |
| G269 INTERPRET PLANS, SUCH AS DIAGRAMS OR SCHEMATICS | 67 |
| B31 ORIENT NEWLY ASSIGNED PERSONNEL | 67 |
| C44 EVALUATE INDIVIDUALS FOR RECOGNITION | 50 |
| G267 INSTALL VIDEO MAPPING SYSTEMS | 50 |
| F195 LEVEL MOBILE SHELTERS | 50 |
| G225 DISASSEMBLE FIXED AIRPORT SURVEILLANCE RADAR (ASR) SYSTEMS | 50 |
| G226 DISASSEMBLE FIXED IDENTIFICATION FRIEND, FOE/SELECTIVE IDENTIFICATION FEATURE (IFF/SIF) RADAR SYSTEMS | 50 |
| G238 INSTALL BRITE RADAR INDICATING TOWER EQUIPMENT SYSTEMS | 50 |
| G219 CONSTRUCT RIGGINGS STRUCTURES, SUCH AS GUY WIRES | 50 |
| G247 INSTALL FIXED PAR SYSTEMS | 50 |
| A18 PREPARE AGENDA FOR MEETINGS, SUCH AS STAFF MEETINGS, BRIEFINGS, OR WORKSHOPS | 50 |
| G245 INSTALL FIXED ASR SYSTEMS | 50 |

TABLE III

GROUP ID NUMBER AND TITLE: GRP120, AN/MPN-13/14 RADAR MAINTENANCE PERSONNEL
 GROUP SIZE: N=46 PERCENT OF SAMPLE: 6%
 AVERAGE GRADE: E-4 AVERAGE TICF: 66 MONTHS
 AVERAGE TAFMS: 78 MONTHS

THE FOLLOWING ARE IN DESCENDING ORDER BY PERCENT MEMBERS PERFORMING:

| TASKS | PERCENT MEMBERS PERFORMING |
|--------------------------------------------------------------------------------------------------------------|----------------------------|
| 0950 PERFORM AN/MPN-13/14 TURN-ON OR TURN-OFF PROCEDURES | 100 |
| 01005 TROUBLESHOOT AN/MPN-13/14 ASR RECEIVER GROUPS TO SUBASSEMBLY LEVEL, SUCH AS MODULES | 98 |
| 0894 ALIGN AN/MPN-13/14 ASR SYNCHRONIZERS | 98 |
| 0958 PERFORMANCE CHECK AN/MPN-13/14 ASR TRANSMODULATOR AVERAGE POWER OUTPUTS | 96 |
| 0926 INSTALL AN/MPN-13/14 ASR TRANSMITTER GROUPS | 93 |
| H361 REMOVE MINOR HARDWARE, SUCH AS DIALS, BULBS, AND CLAMPS | 91 |
| H362 REMOVE RADAR SYSTEM POWER SUPPLIES | 91 |
| E150 PREPARE AFTO FORMS 349 (MAINTENANCE DATA COLLECTION RECORD) | 87 |
| 0968 PERFORMANCE CHECK AN/MPN-13/14 PAR MTI MDS | 87 |
| 0936 INSTALL AN/MPN-13/14 PAR TRANSMITTER GROUP DISCRETE COMPONENTS, SUCH AS ELECTRON TUBES | 85 |
| 0910 ALIGN AN/MPN-13/14 PAR STALO LOOPS | 85 |
| W1532 PERFORM AN/TPX42 TURN-ON OR TURN-OFF PROCEDURES | 85 |
| 0912 ALIGN AN/MPN-13/14 PAR SWEEP GENERATORS | 85 |
| 0925 INSTALL AN/MPN-13/14 ASR TRANSMITTER GROUP SUBASSEMBLIES, SUCH AS MODULES | 83 |
| 0916 ALIGN AN/MPN-13/14 SYNCHROSCOPES | 83 |
| H368 TROUBLESHOOT RADAR SYSTEM POWER SUPPLIES FROM SUBASSEMBLY TO DISCRETE COMPONENT LEVEL | 78 |
| 0932 INSTALL AN/MPN-13/14 PAR INDICATOR GROUPS | 78 |
| 0957 PERFORMANCE CHECK AN/MPN-13/14 ASR TRANSMODULATOR AFC | 78 |
| W1511 ALIGN AN/TPX-42 INDICATOR GROUPS OD-56/57 | 78 |
| H333 INSTALL RADAR SYSTEM POWER SUPPLIES | 76 |
| H364 REMOVE RADAR SYSTEM POWER SUPPLY SUBASSEMBLIES, SUCH AS SERIES REGULATORS | 76 |
| E158 PREPARE DD FORMS 1577-2 (UNSERVICEABLE (REPARABLE) TAG MATERIEL) | 72 |
| W1507 ALIGN AN/TPX-42 AN/TPX-49 TRANSPONDER SETS | 72 |
| E157 PREPARE DD FORMS 1577 (UNSERVICEABLE (CONDEMNED) TAG MATERIEL) | 67 |
| 0895 ALIGN AN/MPN-13/14 ASR TRIPLE STAGGERED CANCELLERS | 65 |
| 0939 INSTALL AN/MPN-13/14 POWER TRAILER POWER DISTRIBUTION GROUP DISCRETE COMPONENTS, SUCH AS ELECTRON TUBES | 61 |
| W1549 REMOVE AN/TPX-42 INDICATOR GROUPS | 59 |

TABLE IV

GROUP ID NUMBER AND TITLE: GRP139, ATC RADAR EVAL TECHNICIANS
 GROUP SIZE: N=46 PERCENT OF SAMPLE: *
 AVERAGE GRADE: E-6 AVERAGE TICF: 136 MONTHS
 AVERAGE TAFMS: 139 MONTHS

THE FOLLOWING ARE IN DESCENDING ORDER BY PERCENT MEMBERS PERFORMING:

| TASKS | PERCENT MEMBERS PERFORMING |
|-------------------------------------------------------------------------------------------|----------------------------|
| J552 PERFORMANCE CHECK AN/GPN-20/21 RANGE AZIMUTH GATING (RAG) CIRCUITS | 100 |
| I420 PERFORMANCE CHECK AN/GPN-12 RECEIVER PARAMETRIC AMPLIFIERS | 100 |
| K663 PERFORMANCE CHECK AN/GPN-22 TDC | 100 |
| K661 PERFORMANCE CHECK AN/GPN-22 SPLIT PULSE AND CHIRP FREQUENCIES | 100 |
| J558 PERFORMANCE CHECK AN/GPN-20/21 STC | 100 |
| I430 PERFORMANCE CHECK AN/GPN-12 TRANSMITTER METER READINGS | 100 |
| J566 PERFORMANCE CHECK AN/GPN-20/21 TRANSMITTER FREQUENCIES | 100 |
| J568 PERFORMANCE CHECK AN/GPN-20/21 TRANSMITTER RADIO FREQUENCY (RF) PULSE SPECTRUMS | 100 |
| J569 PERFORMANCE CHECK AN/GPN-20/21 VOLTAGE STANDING WAVE RATIOS (VSWR) | 100 |
| J536 PERFORMANCE CHECK AN/GPN-20/21 MINIMUM DISCERNABLE SIGNALS (MDS) | 100 |
| J537 PERFORMANCE CHECK AN/GPN-20/21 MTI BALANCE LEVELS | 100 |
| N860 PERFORMANCE CHECK AN/FPN-62 TRANSMITTER GROUPS | 100 |
| N858 PERFORMANCE CHECK AN/FPN-62 RECEIVER GROUPS | 80 |
| W1540 PERFORMANCE CHECK AN/TPX-42 OR-78 TRANSMITTER PECEIVER GROUPS | 80 |
| A8 DEVELOP WORK PROCEDURES | 80 |
| J561 PERFORMANCE CHECK AN/GPN-20/21 SUBCLUTTER VISIBILITIES (SCV) | 80 |
| K655 PERFORMANCE CHECK AN/GPN-22 ANTENNA VERTICAL SENSORS | 80 |
| J564 PERFORMANCE CHECK AN/GPN-20/21 SYSTEM NOISE FIGURES | 80 |
| C51 EVALUATE PERFORMANCE OF NEWLY INSTALLED EQUIPMENT | 80 |
| N859 PERFORMANCE CHECK AN/FPN-62 REMOTING GROUPS | 80 |
| A12 PARTICIPATE IN MEETINGS, SUCH AS STAFF MEETINGS, BRIEFINGS, CONFERENCES, OR WORKSHOPS | 80 |
| O968 PERFORMANCE CHECK AN/MPN-13/14 PAR MTI MDS | 60 |
| M786 PERFORMANCE CHECK AN/FPN-16/61 TRANSMITTER FREQUENCIES | 60 |
| O973 PERFORMANCE CHECK AN/MPN-13/14 PAR VSWR | 60 |
| M792 PERFORMANCE CHECK AN/FPN-16/61 TRANSMITTER VOLTAGE STANDING WAVE RATIO (VSRW) | 60 |
| M791 PERFORMANCE CHECK AN/FPN-16/61 TRANSMITTER RECOVERY TIMES | 60 |
| T1441 PERFORMANCE CHECK AN/GPA-131 VIDEO MAPPER ASSEMBLIES, SUCH AS VIDEO CONVERTERS | 60 |

TABLE V

GROUP ID NUMBER AND TITLE: GRP029, ELECTRONICS INSTALLATION (E1) PERSONNEL CLUSTER
 GROUP SIZE: N=35 PERCENT OF SAMPLE: 5%
 AVERAGE GRADE: E-4 AVERAGE TICF: 38 MONTHS
 AVERAGE TAFMS: 48 MONTHS

THE FOLLOWING ARE IN DESCENDING ORDER BY PERCENT MEMBERS PERFORMING:

| TASKS | PERCENT MEMBERS PERFORMING |
|---------------------------------------------------------------------------|----------------------------|
| G236 DRIVE TO OR FROM OPERATING LOCATIONS | 94 |
| H336 INSTALL TIE WRAPS | 91 |
| C63 INSPECT SCHEME MATERIALS | 77 |
| H332 INSTALL MINOR HARDWARE, SUCH AS DIALS, BULBS, AND CLAMPS | 94 |
| H331 INSTALL CRIMPED WIRING TERMINALS | 83 |
| G269 INTERPRET PLANS, SUCH AS DIAGRAMS OR SCHEMATICS | 83 |
| F183 CONDUCT OPERATIONAL TESTS OF NEWLY INSTALLED EQUIPMENT | 71 |
| G245 INSTALL FIXED ASR SYSTEMS | 74 |
| G241 INSTALL CONDUITS (CABLE TROUGHS) | 83 |
| G264 INSTALL RADAR SYSTEM WIRING | 71 |
| G243 INSTALL EQUIPMENT CABINETS | 80 |
| G251 INSTALL LIGHTNING ARRESTORS | 80 |
| H309 ASSEMBLE CONDUITS | 74 |
| G247 INSTALL FIXED PAR SYSTEMS | 66 |
| G240 INSTALL CABLE JUNCTION BOXES | 77 |
| H319 FABRICATE POWER CABLES | 69 |
| H318 FABRICATE MINICOAXIAL CABLES | 69 |
| G246 INSTALL FIXED IFF/SIF RADAR SYSTEMS | 66 |
| G263 INSTALL RADAR REFLECTORS | 74 |
| B31 ORIENT NEWLY ASSIGNED PERSONNEL | 51 |
| H308 ASSEMBLE CABLE HARNESSSES | 54 |
| H322 FABRICATE TEST CABLES | 69 |
| G279 REMOVE EQUIPMENT CABINETS | 74 |
| F211 SIGN OUT EQUIPMENT FOR INSTALLATION PROJECTS | 63 |
| H320 FABRICATE RIGID CABLES | 60 |
| F184 CONDUCT SHAKEDOWN (HOT CHECK TESTS) | 63 |
| H321 FABRICATE SEMIRIGID CABLES | 60 |
| H360 REMOVE CRIMPED WIRING TERMINALS | 66 |
| G225 DISASSEMBLE FIXED AIRPORT SURVEILLANCE RADAR (ASR) SYSTEMS | 60 |
| G293 REMOVE RADAR SYSTEM WIRING | 60 |
| J503 INSTALL AN/GPN-20/21 ANTENNAS | 54 |
| H339 LUBRICATE MECHANICAL BEARING SURFACES, SUCH AS ANTENNA ROTARY JOINTS | 66 |
| H333 INSTALL RADAR SYSTEM POWER SUPPLIES | 66 |
| H337 LACE WIRING ASSEMBLIES | 57 |
| G273 PACK SUPPORT EQUIPMENT FOR SHIPMENT | 37 |

TABLE VA

GROUP ID NUMBER AND TITLE: GRP134, EI TEAM MEMBERS
 GROUP SIZE: N=9 PERCENT OF SAMPLE: 1%
 AVERAGE GRADE: E-5 AVERAGE TICF: 39 MONTHS
 AVERAGE TAFMS: 42 MONTHS

THE FOLLOWING ARE IN DESCENDING ORDER BY PERCENT MEMBERS PERFORMING:

| TASKS | PERCENT MEMBERS PERFORMING |
|-----------------------------------------------------------------------------------------------------|----------------------------|
| H360 REMOVE CRIMPED WIRING TERMINALS | 100 |
| H321 FABRICATE SEMIRIGID CABLES | 100 |
| H332 INSTALL MINOR HARDWARE, SUCH AS DIALS, BULBS, AND CLAMPS | 100 |
| H333 INSTALL RADAR SYSTEM POWER SUPPLIES | 100 |
| G279 REMOVE EQUIPMENT CABINETS | 100 |
| H361 REMOVE MINOR HARDWARE, SUCH AS DIALS, BULBS, AND CLAMPS | 100 |
| H331 INSTALL CRIMPED WIRING TERMINALS | 100 |
| G293 REMOVE RADAR SYSTEM WIRING | 100 |
| H336 INSTALL TIE WRAPS | 100 |
| G269 INTERPRET PLANS, SUCH AS DIAGRAMS OR SCHEMATICS | 100 |
| G241 INSTALL CONDUITS (CABLE TROUGHS) | 100 |
| H345 PERFORM CORROSION CONTROL ON EQUIPMENT RACKS | 89 |
| G246 INSTALL FIXED IFF/SIF RADAR SYSTEMS | 89 |
| G247 INSTALL FIXED PAR SYSTEMS | 89 |
| G277 REMOVE CABLE JUNCTION BOXES | 89 |
| C63 INSPECT SCHEME MATERIALS | 78 |
| F211 SIGN OUT EQUIPMENT FOR INSTALLATION PROJECTS | 78 |
| J485 ALIGN AN/GPN-20/21 MOVING TARGET INDICATOR (MTI) CHANNEL ANALOG TO DIGITAL (A TO D) CONVERTERS | 67 |
| T1447 TROUBLESHOOT AN/GPA-131 VIDEO MAPPER SYSTEMS TO ASSEMBLY LEVEL, SUCH AS VIDEO CONVERTERS | 67 |
| J558 PERFORMANCE CHECK AN/GPN-20/21 STC | 67 |
| J489 ALIGN AN/GPN-20/21 NORMAL CHANNEL A TO D CONVERTERS | 67 |
| T1434 ALIGN AN/GPA-131 VIDEO MAPPER SWEEP GENERATORS | 67 |
| T1441 PERFORMANCE CHECK AN/GPA-131 VIDEO MAPPER ASSEMBLIES, SUCH AS VIDEO CONVERTERS | 67 |
| J486 ALIGN AN/GPN-20/21 MTI IN-PHASE AMPLIFIERS | 67 |
| T1442 PERFORMANCE CHECK AN/GPA-131 VIDEO MAPPER SUBASSEMBLIES, SUCH AS PCC | 67 |
| F186 DISCONNECT PRIMARY POWER FROM MOBILE UNITS | 67 |
| H318 FABRICATE MINICOAXIAL CABLES | 67 |
| H308 ASSEMBLE CABLE HARNESSSES | 67 |
| G225 DISASSEMBLE FIXED AIRPORT SURVEILLANCE RADAR (ASR) SYSTEMS | 56 |
| J552 PERFORMANCE CHECK AN/GPN-20/21 RANGE AZIMUTH GATING (RAG) CIRCUITS | 56 |
| T1437 INSTALL AN/GPA-131 SYSTEMS | 56 |

TABLE VB

GROUP ID NUMBER AND TITLE: GRP152, EI TEAM CHIEF NOMINEES
 GROUP SIZE: N=5 PERCENT OF SAMPLE: *
 AVERAGE GRADE: E-5 AVERAGE TICF: 67 MONTHS
 AVERAGE TAFMS: 106 MONTHS

THE FOLLOWING ARE IN DESCENDING ORDER BY PERCENT MEMBERS PERFORMING:

| TASKS | PERCENT MEMBERS PERFORMING |
|--------------------------------------------------------------------------------------------|----------------------------|
| H369 TROUBLESHOOT RADAR SYSTEM POWER SUPPLIES TO SUBASSEMBLY LEVEL | 100 |
| H367 TROUBLESHOOT ANCILLARY EQUIPMENT POWER SUPPLIES TO SUB-ASSEMBLY LEVEL | 100 |
| H329 INSTALL ANCILLARY EQUIPMENT POWER SUPPLY SUBASSEMBLIES, SUCH AS SERIES REGULATORS | 100 |
| H368 TROUBLESHOOT RADAR SYSTEM POWER SUPPLIES FROM SUBASSEMBLY TO DISCRETE COMPONENT LEVEL | 100 |
| H336 INSTALL TIE WRAPS | 100 |
| C74 WRITE APR | 100 |
| D96 MAINTAIN TRAINING RECORDS | 100 |
| G296 REMOVE VIDEO MAPPING EQUIPMENT | 100 |
| G233 DISASSEMBLE VIDEO MAPPING SYSTEMS | 100 |
| G231 DISASSEMBLE MOBILE PAR SYSTEMS | 100 |
| G247 INSTALL FIXED PAR SYSTEMS | 100 |
| G235 DRILL AND TAP HOLES FOR MOUNTING EQUIPMENT | 100 |
| G245 INSTALL FIXED ASR SYSTEMS | 100 |
| B31 ORIENT NEWLY ASSIGNED PERSONNEL | 80 |
| D81 CONDUCT OJT | 80 |
| H334 INSTALL RADAR SYSTEM POWER SUPPLY DISCRETE COMPONENTS, SUCH AS RECTIFIERS | 80 |
| H325 IDENTIFY AUXILIARY POWER EQUIPMENT MALFUNCTIONS | 80 |
| B36 SUPERVISE MILITARY PERSONNEL WITH AFSC OTHER THAN 303X1 | 80 |
| C44 EVALUATE INDIVIDUALS FOR RECOGNITION | 80 |
| H315 DETERMINE LOCATIONS OF SHORTS IN CABLE RUNS | 80 |
| D80 ASSIGN ON-THE-JOB TRAINING (OJT) TRAINERS | 80 |
| B32 SUPERVISE AIR TRAFFIC CONTROL RADAR SPECIALISTS (AFSC 30351) | 80 |
| F191 GROUND MOBILE SHELTERS | 80 |
| C73 REVIEW CORRESPONDENCE | 80 |
| F215 UPDATE SCHEME PACKAGES | 80 |
| A22 SCHEDULE TEMPORARY DUTY | 60 |
| D94 EVALUATE TRAINING METHODS | 60 |
| C65 INVESTIGATE INCIDENTS | 60 |
| A17 PLAN WORK ASSIGNMENTS | 60 |
| K635 INSTALL AN/GPN-22 INDICATORS | 60 |
| E128 PREPARE AF FORMS 2005 (ISSUE/TURN IN REQUEST) | 60 |
| A23 WRITE JOB DESCRIPTIONS | 40 |
| A11 ESTABLISH WORK SCHEDULES | 40 |

TABLE VC

GROUP ID NUMBER AND TITLE: GRP127, EI TEAM APPRENTICES
 GROUP SIZE: N=5 PERCENT OF SAMPLE: *
 AVERAGE GRADE: E-3 AVERAGE TICF: 29 MONTHS
 AVERAGE TAFMS: 30 MONTHS

THE FOLLOWING ARE IN DESCENDING ORDER BY PERCENT MEMBERS PERFORMING:

| TASKS | PERCENT MEMBERS PERFORMING |
|------------------------------------------------------------------|----------------------------|
| G245 INSTALL FIXED ASR SYSTEMS | 100 |
| H361 REMOVE MINOR HARDWARE, SUCH AS DIALS, BULBS, AND CLAMPS | 100 |
| G243 INSTALL EQUIPMENT CABINETS | 100 |
| H312 CONSTRUCT CABLE TROUGHS | 100 |
| H332 INSTALL MINOR HARDWARE, SUCH AS DIALS, BULBS, AND CLAMPS | 100 |
| H336 INSTALL TIE WRAPS | 100 |
| G240 INSTALL CABLE JUNCTION BOXES | 100 |
| G235 DRILL AND TAP HOLES FOR MOUNTING EQUIPMENT | 100 |
| G236 DRIVE TO OR FROM OPERATING LOCATIONS | 100 |
| F200 PERFORM OPERATOR MAINTENANCE ON VEHICLES | 80 |
| F185 CONNECT PRIMARY POWER TO RADAR SYSTEMS | 80 |
| G284 REMOVE LIGHTNING ARRESTORS | 60 |
| I384 ALIGN AN/GPN-12 TRANSMITTER FREQUENCIES | 60 |
| G293 REMOVE RADAR SYSTEM WIRING | 60 |
| H320 FABRICATE RIGID CABLES | 60 |
| G272 LOAD EQUIPMENT ON TRUCKS | 60 |
| G258 INSTALL OBSTRUCTION LIGHTS | 60 |
| G250 INSTALL INTERCONNECTING CABLES | 60 |
| G260 INSTALL POWER CONTROL BOXES | 40 |
| I376 ALIGN AN/GPN-12 MAGNETRON FILAMENT VOLTAGES | 40 |
| T1432 ALIGN AN/GPA-131 VIDEO MAPPER DEFLECTION AMPLIFIERS | 40 |
| G247 INSTALL FIXED PAR SYSTEMS | 40 |
| F183 CONDUCT OPERATIONAL TESTS OF NEWLY INSTALLED EQUIPMENT | 40 |
| G301 UNPACK SUPPORT EQUIPMENT AFTER SHIPMENT | 40 |
| G265 INSTALL RADIO COMMUNICATIONS EQUIPMENT | 40 |
| T1447 TROUBLESHOOT AN/GPA-131 VIDEO MAPPER SYSTEMS TO CONVERTERS | 40 |
| I418 PERFORMANCE CHECK AN/GPN-12 RECEIVER GAIN UNITS | 40 |

TABLE VI

GROUP ID NUMBER AND TITLE: GRP118, AN/TPN-19 RADAR SYSTEMS MAINTENANCE PERSONNEL
 GROUP SIZE: N=57 PERCENT OF SAMPLE: 7%
 AVERAGE GRADE: E-4 AVERAGE TICF: 48 MONTHS
 AVERAGE TAFMS: 57 MONTHS

THE FOLLOWING ARE IN DESCENDING ORDER BY PERCENT MEMBERS PERFORMING:

| TASKS | PERCENT MEMBERS PERFORMING |
|------------------------------------------------------------------------------------------------|----------------------------|
| P1039 ALIGN AN/TPN-19 ASR RML TRANSMITTER FREQUENCIES | 96 |
| P1036 ALIGN AN/TPN-19 ASR RML RECEIVER FREQUENCIES | 96 |
| P1047 ALIGN AN/TPN-19 OPERATIONS (OPS) ASR DEMULTIPLEXER AZIMUTH DEMODULATORS | 96 |
| P1050 ALIGN AN/TPN-19 OPS ASR DEMULTIPLEXER VIDEO MULTITRIGGER SEPARATORS | 96 |
| P1078 ALIGN AN/TPN-19 PAR RML TRANSMITTER AFC | 95 |
| P1067 ALIGN AN/TPN-19 PAR RECEIVER PROCESSOR FRONT PANELS | 93 |
| P1183 PERFORMANCE CHECK AN/TPN-19 PAR RECEIVERS | 91 |
| H307 ALIGN RADAR SYSTEM POWER SUPPLIES | 88 |
| P1139 PERFORMANCE CHECK AN/TPN-19 ASR DISPLAY SYSTEMS | 86 |
| P1138 PERFORMANCE CHECK AN/TPN-19 ASR DISPLAY SUBSYSTEMS | 84 |
| P1155 PERFORMANCE CHECK AN/TPN-19 ASR SYNCHRONIZER TIMING | 84 |
| H353 PERFORMANCE CHECK RADAR SYSTEM POWER SUPPLIES | 82 |
| P1143 PERFORMANCE CHECK AN/TPN-19 ASR MULTIPLEXER-DEMULTIPLEXER SUPERVISORY CONTROLS | 81 |
| P1190 PERFORMANCE CHECK AN/TPN-19 PAR TDC BITE | 79 |
| F195 LEVEL MOBILE SHELTERS | 75 |
| G255 INSTALL MOBILE PAR SYSTEMS | 70 |
| F214 TIE DOWN MOBILE SHELTERS | 70 |
| F180 ASSEMBLE MOBILE RADAR ANTENNAS | 68 |
| P1244 TROUBLESHOOT AN/TPN-19 OPS TRAILER INDICATOR GROUPS TO SUBASSEMBLY LEVEL | 67 |
| F212 STOW MOBILE SHELTER INTERIOR ARTICLES | 65 |
| F190 ENTER PARAMETERS INTO SITE PARAMETER COMPUTER PANELS | 63 |
| G234 DISMANTLE SUPPORT FACILITIES, SUCH AS TRANSPORTABLE SHELTERS | 56 |
| P1108 INSTALL AN/TPN-19 ASR TRANSMITTER GROUPS | 53 |
| E154 PREPARE DD FORMS 1574 (SERVICEABLE TAG-MATERIEL) | 47 |
| T1447 TROUBLESHOOT AN/GPA-131 VIDEO MAPPER SYSTEMS TO ASSEMBLY LEVEL, SUCH AS VIDEO CONVERTERS | 46 |

TABLE VII

GROUP ID NUMBER AND TITLE: GRP114, AN/GPN-12 SPECIAL TRAINING INSTRUCTORS
 GROUP SIZE: N=5 PERCENT OF SAMPLE: *
 AVERAGE GRADE: E-4 AVERAGE TICF: 61 MONTHS
 AVERAGE TAFMS: 80 MONTHS

THE FOLLOWING ARE IN DESCENDING ORDER BY PERCENT MEMBERS PERFORMING:

| TASKS | PERCENT MEMBERS PERFORMING |
|--------------------------------------------------------------------------------------|----------------------------|
| I377 ALIGN AN/GPN-12 MOVING TARGET INDICATOR (MTI) CHANNELS | 100 |
| I425 PERFORMANCE CHECK AN/GPN-12 RECEIVER SENSITIVITY TIMING CONSTANT (STC) CIRCUITS | 100 |
| I434 PERFORMANCE CHECK RECOVERY TIME OF AN/GPN-12 RECEIVERS | 100 |
| I418 PERFORMANCE CHECK AN/GPN-12 RECEIVER GAIN UNITS | 100 |
| I375 ALIGN AN/GPN-12 LOCK TEST PULSE GENERATORS | 100 |
| I371 ALIGN AN/GPN-12 AUTOMATIC FREQUENCY CONTROLS (AFC) | 80 |
| I378 ALIGN AN/GPN-12 NORMAL CHANNELS | 80 |
| I385 ALIGN AN/GPN-12 VIDEO SYSTEMS | 80 |
| I421 PERFORMANCE CHECK AN/GPN-12 RECEIVER PARAMETRIC AMPLIFIER VOLTAGE LEVELS | 80 |
| I415 PERFORMANCE CHECK AN/GPN-12 PROCESSOR TRIGGER TIMING UNITS | 80 |
| I436 PERFORMANCE CHECK TUNING OF AN/GPN-12 RECEIVER STABLE LOCAL OSCILLATORS (STALO) | 80 |
| I419 PERFORMANCE CHECK AN/GPN-12 RECEIVER LOCK TEST PULSE GENERATORS | 80 |
| D101 WRITE TEST QUESTIONS | 60 |
| D98 PROCURE TRAINING AIDS | 60 |
| D89 DEVELOP TRAINING COURSE CURRICULUM MATERIALS | 60 |
| D88 DEVELOP TRAINING AIDS | 60 |
| D99 SCORE TESTS | 60 |
| D79 ADMINISTER TESTS | 60 |
| I424 PERFORMANCE CHECK AN/GPN-12 RECEIVER RING TIMES | 40 |
| I407 INSTALL AN/GPN-12 TRANSMITTER SUBASSEMBLIES, SUCH AS MODULES | 40 |
| I473 TROUBLESHOOT AN/GPN-12 TRANSMITTERS TO SUBASSEMBLY LEVEL, SUCH AS MODULES | 40 |
| I422 PERFORMANCE CHECK AN/GPN-12 RECEIVER PREAMPLIFIER GAIN UNITS | 40 |
| D93 EVALUATE PROGRESS OF RESIDENT COURSE STUDENTS | 40 |
| D82 CONDUCT RESIDENT COURSE CLASSROOM TRAINING | 40 |

TABLE VIII

GROUP ID NUMBER AND TITLE: GRP015, MAINTENANCE STAFF SUPPORT CLUSTER
 GROUP SIZE: N=77 PERCENT OF SAMPLE: 10%
 AVERAGE GRADE: E-6 AVERAGE TICF: 129 MONTHS
 AVERAGE TAFMS: 165 MONTHS

THE FOLLOWING ARE IN DESCENDING ORDER BY PERCENT MEMBERS PERFORMING:

| TASKS | PERCENT MEMBERS PERFORMING |
|--------------------------------------------------------------------------------------------------------|----------------------------------|
| A12 PARTICIPATE IN MEETINGS, SUCH AS STAFF MEETINGS, BRIEFINGS, CONFERENCES, OR WORKSHOPS | 83 |
| B37 WRITE CORRESPONDENCE | 77 |
| C73 REVIEW CORRESPONDENCE | 71 |
| A19 PREPARE BRIEFINGS | 69 |
| B26 DRAFT DIRECTIVES, SUCH AS LOCAL POLICY OR HIGHER HEAD- QUARTERS DIRECTIVES | 62 |
| E116 MAINTAIN STATUS INDICATORS, SUCH AS BOARDS, GRAPHS, OR CHARTS | 60 |
| C78 WRITE REPLIES TO INSPECTION REPORTS | 56 |
| E111 MAINTAIN FILES | 51 |
| C46 EVALUATE INSPECTION REPORTS | 49 |
| C44 EVALUATE INDIVIDUALS FOR RECOGNITION | 49 |
| E109 INPUT MAINTENANCE MANAGEMENT INFORMATION AND CONTROL SYSTEM (MMICS) DATA ON COMPUTER TERMINALS | 48 |
| A5 DEVELOP INPUTS TO ORGANIZATIONAL POLICIES | 48 |
| C47 EVALUATE MAINTENANCE DATA COLLECTION REPORTS | 44 |
| A2 DETERMINE REQUIREMENTS FOR SUPPLIES | 44 |
| C48 EVALUATE MAINTENANCE PROCEDURES | 42 |
| C74 WRITE APR | 42 |
| C77 WRITE RECOMMENDATIONS FOR AWARDS OR DECORATIONS | 42 |
| C45 EVALUATE INSPECTION PROCEDURES | 39 |
| D96 MAINTAIN TRAINING RECORDS | 36 |
| C58 EVALUATE TECHNICAL ORDER IMPROVEMENT REPORTS | 35 |
| C66 PERFORM ACCEPTANCE INSPECTIONS | 35 |
| A23 WRITE JOB DESCRIPTIONS | 35 |
| C57 EVALUATE SUGGESTIONS | 34 |
| C71 PERFORM PERSONNEL PROFICIENCY EVALUATIONS | 32 |
| A17 PLAN WORK ASSIGNMENTS | 32 |
| E138 PREPARE AF FORMS 264 (MMICS JOB/STATUS DOCUMENT) | 31 |
| C67 PERFORM ACTIVITY INSPECTIONS | 31 |
| B29 IMPLEMENT SELF-INSPECTION PROGRAMS | 30 |

TABLE VIIIA

GROUP ID NUMBER AND TITLE: GRP191, MAINTENANCE CONTROL SUPERVISORS
 GROUP SIZE: N=10 PERCENT OF SAMPLE: 1%
 AVERAGE GRADE: E-6 AVERAGE TICF: 116 MONTHS
 AVERAGE TAFMS: 140 MONTHS

THE FOLLOWING ARE IN DESCENDING ORDER BY PERCENT MEMBERS PERFORMING:

| TASKS | PERCENT MEMBERS PERFORMING |
|-----------------------------------------------------------------------------------------------------|----------------------------|
| E109 INPUT MAINTENANCE MANAGEMENT INFORMATION AND CONTROL SYSTEM (MMICS) DATA ON COMPUTER TERMINALS | 100 |
| B36 SUPERVISE MAINTENANCE PERSONNEL WITH AFSC OTHER THAN 303X1 | 90 |
| A8 DEVELOP WORK SCHEDULES | 90 |
| D96 MAINTAIN TRAINING RECORDS | 90 |
| C44 EVALUATE PERFORMANCE FOR RECOGNITION | 90 |
| C74 WRITE APR | 90 |
| C77 WRITE RECOMMENDATIONS FOR AWARDS OR DECORATIONS | 90 |
| B26 DRAFT DIRECTIVES, POLICIES, LOCAL POLICY OR HIGHER HEAD-QUARTERS DIRECTIVE | 80 |
| E114 MAINTAIN PREVENTIVE MAINTENANCE INSPECTION (PMI) LISTINGS | 70 |
| A23 WRITE JOB DESCRIPTIONS | 70 |
| F187 DISPATCH MAINTENANCE PERSONNEL | 60 |
| B28 IMPLEMENT SECURITY PROGRAMS | 60 |
| B29 IMPLEMENT SELF-INSPECTION PROGRAMS | 60 |
| B30 INITIATE PERSONNEL ACTION REQUESTS | 60 |
| C47 EVALUATE MAINTENANCE DATA COLLECTION | 50 |
| C60 EVALUATE WORK SCHEDULES | 50 |
| D79 ADMINISTER TESTS | 50 |
| B27 IMPLEMENT SAFETY PROGRAMS | 50 |

NO-0107 692

AIR TRAFFIC CONTROL RADAR AFSC 303X1(U) AIR FORCE
OCCUPATIONAL MEASUREMENT CENTER RANDOLPH AFB TX SEP 07

2/2

UNCLASSIFIED

F/B 17/9

ML



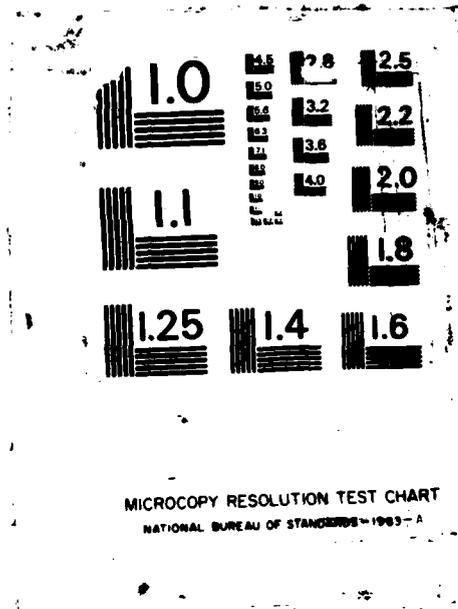


TABLE VIII D

GROUP ID NUMBER AND TITLE: GRP159, PLANS AND SCHEDULING PERSONNEL
 GROUP SIZE: N=6 PERCENT OF SAMPLE: *
 AVERAGE GRADE: E-4 AVERAGE TICF: 85 MONTHS
 AVERAGE TAFMS: 94 MONTHS

THE FOLLOWING ARE IN DESCENDING ORDER BY PERCENT MEMBERS PERFORMING:

| TASKS | PERCENT MEMBERS PERFORMING |
|-----------------------------------------------------------------------------------------------------|----------------------------|
| E138 PREPARE AF FORMS 264 (MMICS JOB/STATUS DOCUMENT) | 100 |
| E109 INPUT MAINTENANCE MANAGEMENT INFORMATION AND CONTROL SYSTEM (MMICS) DATA ON COMPUTER TERMINALS | 100 |
| E116 MAINTAIN STATUS INDICATORS, SUCH AS BOARDS, GRAPHS, OR CHARTS | 100 |
| A19 PREPARE BRIEFINGS | 100 |
| E114 MAINTAIN PREVENTIVE MAINTENANCE INSPECTION (PMI) LISTINGS | 83 |
| A11 ESTABLISH WORK SCHEDULES | 83 |
| E136 PREPARE AF FORMS 2446 (SCHEDULE OF TECHNICIAN AVAILABILITY) | 67 |
| B36 SUPERVISE MILITARY PERSONNEL WITH AFSC OTHER THAN 303X1 | 50 |
| D81 CONDUCT OJT | 50 |
| E126 PREPARE AF FORMS 1530 (PUNCH CARD TRANSCRIPT) | 50 |
| A20 PREPARE UNIT EMERGENCY PLANS | 50 |
| A8 DEVELOP WORK PROCEDURES | 50 |
| F194 ISSUE LOCAL JOB CONTROL NUMBERS | 33 |
| F204 PROGRAM COMPUTERS | 33 |
| E121 MAINTAIN VEHICLE CONTROL LOGS | 33 |

TABLE VIIIC

GROUP ID NUMBER AND TITLE: GRP192, DIVISION MANAGERS
 GROUP SIZE: N=7 PERCENT OF SAMPLE: *
 AVERAGE GRADE: E-7 AVERAGE TICF: 189 MONTHS
 AVERAGE TAFMS: 208 MONTHS

THE FOLLOWING ARE IN DESCENDING ORDER BY PERCENT MEMBERS PERFORMING:

| TASKS | PERCENT MEMBERS PERFORMING |
|-----------------------------------------------------------------------------------|----------------------------|
| C73 REVIEW CORRESPONDENCE | 100 |
| A12 PARTICIPATE IN MEETINGS, SUCH AS STAFF MEETINGS | 100 |
| C39 CONDUCT STAFF ASSISTANCE VISITS | 100 |
| B26 DRAFT DIRECTIVES, SUCH AS LOCAL POLICY OR HIGHER HEAD- QUARTERS DIRECTIVES | 100 |
| C57 EVALUATE SUGGESTIONS | 100 |
| C45 EVALUATE INSPECTION PROCEDURES | 86 |
| C78 WRITE REPLIES TO INSPECTION REPORTS | 86 |
| C48 EVALUATE MAINTENANCE PROCEDURES | 71 |
| A1 DETERMINE REQUIREMENTS FOR PERSONNEL | 71 |
| E116 MAINTAIN STATUS INDICATORS, SUCH AS BOARDS, GRAPHS, OR CHARTS | 57 |
| A3 DETERMINE TRANSPORTATION REQUIREMENTS | 57 |
| A2 DETERMINE REQUIREMENTS FOR SUPPLIES | 57 |
| C68 PERFORM EQUIPMENT INSPECTIONS | 43 |
| C71 PERFORM PERSONNEL PROFICIENCY EVALUATIONS | 43 |
| C66 PERFORM ACCEPTANCE INSPECTIONS | 43 |
| C52 EVALUATE PERSONNEL FOR COMPLIANCE WITH PERFORMANCE STANDARDS | 43 |
| E172 REVIEW COMMUNICATIONS-ELECTRONICS IMPLEMENTATION PLAN (CEIP) | 43 |
| A9 ESTABLISH HOST-TENANT SUPPORT AGREEMENTS | 43 |
| A7 DEVELOP SELF-INSPECTION PROGRAMS | 43 |
| C65 INVESTIGATE INCIDENTS | 43 |
| A4 DEVELOP INPUTS TO MOBILITY PLANS | 43 |
| E141 PREPARE AF FORMS 9 (REQUEST FOR PURCHASE) | 43 |
| C54 EVALUATE SAFETY PROGRAMS | 21 |

TABLE VIIID

GROUP ID NUMBER AND TITLE: GRP199, TRACALS SUPERINTENDENTS
 GROUP SIZE: N=10 PERCENT OF SAMPLE: 1%
 AVERAGE GRADE: E-7 AVERAGE TICF: 152 MONTHS
 AVERAGE TAFMS: 235 MONTHS

THE FOLLOWING ARE IN DESCENDING ORDER BY PERCENT MEMBERS PERFORMING:

| TASKS | PERCENT MEMBERS PERFORMING |
|-------------------------------------------------------------------------------------|----------------------------------|
| A18 PREPARE AGENDA FOR MEETINGS, SUCH AS STAFF MEETINGS, BRIEFINGS, OR WORKSHOPS | 100 |
| A19 PREPARE BRIEFINGS | 100 |
| C74 WRITE APR | 100 |
| A1 DETERMINE REQUIREMENTS FOR PERSONNEL | 90 |
| C46 EVALUATE INSPECTION REPORTS | 80 |
| C78 WRITE REPLIES TO INSPECTION REPORTS | 70 |
| B36 SUPERVISE MILITARY PERSONNEL WITH AFSC OTHER THAN 303X1 | 70 |
| B33 SUPERVISE AIR TRAFFIC CONTROL RADAR TECHNICIANS (AFSC 30371) | 70 |
| A5 DEVELOP INPUTS TO ORGANIZATIONAL POLICIES | 60 |
| C49 EVALUATE MAINTENANCE PRODUCTION REPORTS | 60 |
| C50 EVALUATE MATERIAL DEFICIENCY REPORTS | 60 |
| A2 DETERMINE REQUIREMENTS FOR SUPPLIES | 50 |
| A23 WRITE JOB DESCRIPTIONS | 50 |
| C57 EVALUATE SUGGESTIONS | 50 |
| A11 ESTABLISH WORK SCHEDULES | 40 |
| A9 ESTABLISH HOST-TENANT SUPPORT AGREEMENTS | 40 |
| C40 EVALUATE ADMINISTRATIVE FORMS | 40 |
| C42 EVALUATE EMERGENCY PROCEDURES | 40 |
| A21 PREPARE WORK CENTER ORIENTATION PROGRAMS | 30 |
| C65 INVESTIGATE INCIDENTS | 30 |

TABLE VIIIIE

GROUP ID NUMBER AND TITLE: GRP111, MATERIEL CONTROL PERSONNEL
 GROUP SIZE: N=7 PERCENT OF SAMPLE: *
 AVERAGE GRADE: E-6 AVERAGE TICF: 187 MONTHS
 AVERAGE TAFMS: 205 MONTHS

THE FOLLOWING ARE IN DESCENDING ORDER BY PERCENT MEMBERS PERFORMING:

| TASKS | PERCENT MEMBERS PERFORMING |
|-------------------------------------------------------------------------------------------|----------------------------|
| B37 WRITE CORRESPONDENCE | 100 |
| A12 PARTICIPATE IN MEETINGS, SUCH AS STAFF MEETINGS, BRIEFINGS, CONFERENCES, OR WORKSHOPS | 100 |
| A19 PREPARE BRIEFINGS | 100 |
| C73 REVIEW CORRESPONDENCE | 86 |
| B24 CONDUCT BRIEFINGS, OTHER THAN CREW BRIEFINGS | 86 |
| A18 PREPARE AGENDA FOR MEETINGS, SUCH AS STAFF MEETINGS, BRIEFINGS, OR WORKSHOPS | 86 |
| B26 DRAFT DIRECTIVES, SUCH AS LOCAL POLICY OR HIGHER HEAD-QUARTERS DIRECTIVES | 71 |
| A2 DETERMINE REQUIREMENTS FOR SUPPLIES | 71 |
| E116 MAINTAIN STATUS INDICATORS, SUCH AS BOARDS, GRAPHS, OR CHARTS | 57 |
| E111 MAINTAIN FILES | 57 |
| A5 DEVELOP INPUTS TO ORGANIZATIONAL POLICIES | 57 |
| C58 EVALUATE TECHNICAL ORDER IMPROVEMENT REPORTS | 43 |
| C72 PERFORM SELF-INSPECTIONS | 43 |
| E115 MAINTAIN PROPERTY CUSTODY AUTHORIZATION/CUSTODY RECEIPT LISTINGS (CA/CRL) | 43 |
| E128 PREPARE AF FORMS 2005 (ISSUE/TURN IN REQUEST) | 43 |
| A13 PLAN ITINERARIES FOR INSTALLATION PROJECTS | 43 |
| C57 EVALUATE SUGGESTIONS | 29 |
| F204 PROGRAM COMPUTERS | 29 |
| A6 DEVELOP INSPECTION SCHEDULES | 29 |
| E176 VERIFY DUE-OUT VALIDATION LISTINGS (M-30) | 29 |
| E129 PREPARE AF FORMS 2413 (SUPPLY CONTROL LOG) | 29 |
| A4 DEVELOP INPUTS TO MOBILITY PLANS | 29 |

TABLE VIIIIF

GROUP ID NUMBER AND TITLE: GRP189, QUALITY CONTROL INSPECTORS
 GROUP SIZE: N=17 PERCENT OF SAMPLE: 2%
 AVERAGE GRADE: E-6 AVERAGE TICF: 135 MONTHS
 AVERAGE TAFMS: 164 MONTHS

THE FOLLOWING ARE IN DESCENDING ORDER BY PERCENT MEMBERS PERFORMING:

| TASKS | PERCENT MEMBERS PERFORMING |
|----------------------------------------------------------------------------------------------------|----------------------------|
| C67 PERFORM ACTIVITY INSPECTIONS | 100 |
| E131 PREPARE AF FORMS 2419 (ROUTING AND REVIEW OF QUALITY CONTROL REPORT) | 100 |
| E132 PREPARE AF FORMS 2420 (QUALITY CONTROL INSPECTION SUMMARY) | 100 |
| C68 PERFORM EQUIPMENT INSPECTIONS | 100 |
| C50 EVALUATE MATERIAL DEFICIENCY REPORTS | 100 |
| C66 PERFORM ACCEPTANCE INSPECTIONS | 100 |
| C71 PERFORM PERSONNEL PROFICIENCY EVALUATIONS | 94 |
| C46 EVALUATE INSPECTION REPORTS | 94 |
| C45 EVALUATE INSPECTION PROCEDURES | 94 |
| C51 EVALUATE PERFORMANCE OF NEWLY INSTALLED EQUIPMENT | 94 |
| C48 EVALUATE MAINTENANCE PROCEDURES | 88 |
| C72 PERFORM SELF-INSPECTIONS | 88 |
| A6 DEVELOP INSPECTION SCHEDULES | 88 |
| C54 EVALUATE SAFETY PROGRAMS | 88 |
| C69 PERFORM FACILITY INSPECTIONS | 82 |
| C53 EVALUATE PROPERTY ITEM PROCEDURES, SUCH AS STORAGE, INVENTORY, OR INSPECTION OF PROPERTY ITEMS | 76 |
| E112 MAINTAIN PLANT-IN-PLACE RECORDS (COMMUNICATIONS, ELECTRONICS FACILITY RECORDS (CEFR)) | 71 |
| C47 EVALUATE MAINTENANCE DATA COLLECTION REPORTS | 71 |
| A10 ESTABLISH LOCAL EQUIPMENT INSPECTION PROCEDURES | 71 |
| E142 PREPARE AFCC FORMS 142 (NOT REPARABLE THIS STATION (NRTS) VALIDATION) | 65 |
| C40 EVALUATE ADMINISTRATIVE FORMS | 65 |
| C39 CONDUCT STAFF ASSISTANCE VISITS | 65 |
| C49 EVALUATE MAINTENANCE PRODUCTION REPORTS | 59 |
| E166 PREPARE SF FORMS 368 (QUALITY DEFICIENCY REPORT (CATEGORY II)) | 47 |
| E118 MAINTAIN TECHNICAL ORDER FILES | 41 |

TABLE VIII G

GROUP ID NUMBER AND TITLE: GRP154, JOB CONTROLLERS
 GROUP SIZE: N=5 PERCENT OF SAMPLE: *
 AVERAGE GRADE: E-4 AVERAGE TICF: 33 MONTHS
 AVERAGE TAFMS: 73 MONTHS

THE FOLLOWING ARE IN DESCENDING ORDER BY PERCENT MEMBERS PERFORMING:

| <u>TASKS</u> | <u>PERCENT MEMBERS PERFORMING</u> |
|-----------------------------------------------------------------------------------------------------|-----------------------------------|
| E138 PREPARE AF FORMS 264 (MMICS JOB/STATUS DOCUMENT) | 100 |
| E116 MAINTAIN STATUS INDICATORS, SUCH AS BOARDS, GRAPHS, OR CHARTS | 100 |
| E114 MAINTAIN PREVENTIVE MAINTENANCE INSPECTION (PMI) LISTINGS | 80 |
| B24 CONDUCT BRIEFINGS, OTHER THAN CREW BRIEFINGS | 40 |
| E109 INPUT MAINTENANCE MANAGEMENT INFORMATION AND CONTROL SYSTEM (MMICS) DATA ON COMPUTER TERMINALS | 20 |
| E129 PREPARE AF FORMS 2413 (SUPPLY CONTROL LOG) | 20 |
| E169 REQUISITION SUPPLIES OR TOOLS, OTHER THAN BENCH STOCK | 20 |
| F194 ISSUE LOCAL JOB CONTROL NUMBERS | 20 |

TABLE IX

GROUP ID NUMBER AND TITLE: GRP074, ATC RADAR MAINTENANCE TRAINING PERSONNEL CLUSTER
 GROUP SIZE: N=60 PERCENT OF SAMPLE: 8%
 AVERAGE GRADE: E-5 AVERAGE TICF: 82 MONTHS
 AVERAGE TAFMS: 101 MONTHS

THE FOLLOWING ARE IN DESCENDING ORDER BY PERCENT MEMBERS PERFORMING:

| TASKS | PERCENT MEMBERS PERFORMING |
|-------------------------------------------------------------------------------------------|----------------------------|
| D99 SCORE TESTS | 98 |
| D97 PREPARE LESSON PLANS | 95 |
| D79 ADMINISTER TESTS | 88 |
| B25 COUNSEL PERSONNEL ON PERSONAL OR MILITARY-RELATED MATTERS | 75 |
| D82 COUNSEL RESIDENT COURSE CLASSROOM TRAINING | 72 |
| D93 EVALUATE PROGRESS OF RESIDENT COURSE STUDENTS | 68 |
| D88 DEVELOP TRAINING AIDS | 68 |
| D98 PROCURE TRAINING AIDS | 57 |
| D101 WRITE TEST QUESTIONS | 55 |
| C52 EVALUATE PERSONNEL FOR COMPLIANCE WITH PERFORMANCE STANDARDS | 38 |
| A12 PARTICIPATE IN MEETINGS, SUCH AS STAFF MEETINGS, BRIEFINGS, CONFERENCES, OR WORKSHOPS | 38 |
| D89 DEVELOP TRAINING COURSE CURRICULUM MATERIALS | 35 |
| D83 CONDUCT SAFETY TRAINING | 27 |
| D94 EVALUATE TRAINING METHODS | 23 |
| E110 INVENTORY TOOLS, EQUIPMENT, OR SUPPLIES | 22 |
| D96 MAINTAIN TRAINING RECORDS | 20 |
| B27 IMPLEMENT SAFETY PROGRAMS | 18 |
| F198 PERFORM AREA BEAUTIFICATION DUTIES, SUCH AS CUTTING GRASS OR PICKING UP AREA | 17 |
| C72 PERFORM SELF-INSPECTIONS | 17 |
| B37 WRITE CORRESPONDENCE | 17 |
| D91 DIRECT TRAINING PROGRAMS, OTHER THAN OJT | 15 |
| B31 ORIENT NEWLY ASSIGNED PERSONNEL | 15 |
| E111 MAINTAIN FILES | 13 |
| D92 EVALUATE INSTRUCTOR PERFORMANCE | 13 |
| B34 SUPERVISE APPRENTICE AIR TRAFFIC CONTROL RADAR SPECIALISTS (AFSC 30331) | 12 |
| C44 EVALUATE INDIVIDUALS FOR RECOGNITION | 12 |
| D100 SELECT INDIVIDUALS FOR SPECIALIZED TRAINING | 12 |

TABLE IXA

GROUP ID NUMBER AND TITLE: GRP119, BASIC COURSE INSTRUCTORS
GROUP SIZE: N=43 PERCENT OF SAMPLE: 6%
AVERAGE GRADE: E-5 AVERAGE TICF: 79 MONTHS
AVERAGE TAFMS: 93 MONTHS

THE FOLLOWING ARE IN DESCENDING ORDER BY PERCENT MEMBERS PERFORMING:

| <u>TASKS</u> | <u>PERCENT MEMBERS PERFORMING</u> |
|----------------------------------------------------------------------------------------------|-------------------------------------------|
| D99 SCORE TESTS | 98 |
| D97 PREPARE LESSON PLANS | 93 |
| D79 ADMINISTER TESTS | 86 |
| B25 COUNSEL PERSONNEL ON PERSONAL OR MILITARY-RELATED MATTERS | 77 |
| D82 CONDUCT RESIDENT COURSE CLASSROOM TRAINING | 70 |
| D93 EVALUATE PROGRESS OF RESIDENT COURSE STUDENTS | 60 |
| D88 DEVELOP TRAINING AIDS | 60 |
| D98 PROCURE TRAINING AIDS | 44 |
| C52 EVALUATE PERSONNEL FOR COMPLIANCE WITH PERFORMANCE STANDARDS | 42 |
| D101 WRITE TEST QUESTIONS | 42 |
| A12 PARTICIPATE IN MEETINGS, SUCH AS STAFF MEETINGS, BRIEFINGS, CONFERENCES, OR WORKSHOPS | 37 |
| D89 DEVELOP TRAINING COURSE CURRICULUM MATERIALS | 23 |
| D83 CONDUCT SAFETY TRAINING | 23 |

TABLE IXB

GROUP ID NUMBER AND TITLE: GRP143, ADVANCED COURSE INSTRUCTORS
 GROUP SIZE: N=9 PERCENT OF SAMPLE: 1%
 AVERAGE GRADE: E-6 AVERAGE TICF: 89 MONTHS
 AVERAGE TAFMS: 132 MONTHS

THE FOLLOWING ARE IN DESCENDING ORDER BY PERCENT MEMBERS PERFORMING:

| TASKS | PERCENT MEMBERS PERFORMING |
|-------------------------------------------------------------------------------------------|----------------------------|
| D97 PREPARE LESSON PLANS | 100 |
| D98 PROCURE TRAINING AIDS | 100 |
| D99 SCORE TESTS | 100 |
| D88 DEVELOP TRAINING AIDS | 100 |
| D101 WRITE TEST QUESTIONS | 100 |
| D79 ADMINISTER TESTS | 89 |
| D89 DEVELOP TRAINING COURSE CURRICULUM MATERIALS | 89 |
| B25 COUNSEL PERSONNEL ON PERSONAL OR MILITARY-RELATED MATTERS | 78 |
| D94 EVALUATE TRAINING METHODS | 44 |
| D86 DETERMINE RESIDENT COURSE TRAINING REQUIREMENTS | 44 |
| D96 MAINTAIN TRAINING RECORDS | 44 |
| E169 REQUISITION SUPPLIES OR TOOLS, OTHER THAN BENCH STOCK | 44 |
| E128 PREPARE AF FORMS 2005 (ISSUE/TURN REQUESTS) | 44 |
| D83 CONDUCT SAFETY TRAINING | 44 |
| E176 VERIFY DUE-OUT VALIDATION LISTINGS (M-30) | 44 |
| D92 EVALUATE INSTRUCTOR PERFORMANCE | 44 |
| E154 PREPARE DD FORMS 1574 (SERVICEABLE TAG-MATERIEL) | 44 |
| D91 DIRECT TRAINING PROGRAMS, OTHER THAN OJT | 33 |
| E115 MAINTAIN PROPERTY CUSTODY AUTHORIZATION/CUSTODY RECEIPT LISTINGS (CA/CRL) | 33 |
| A12 PARTICIPATE IN MEETINGS, SUCH AS STAFF MEETINGS, BRIEFINGS, CONFERENCES, OR WORKSHOPS | 33 |
| B37 WRITE CORRESPONDENCE | 33 |
| E110 INVENTORY TOOLS, EQUIPMENT, OR SUPPLIES | 33 |
| B27 IMPLEMENT SAFETY PROGRAMS | 33 |
| E140 PREPARE AF FORMS 601 (EQUIPMENT ACTION REQUEST) | 33 |
| E157 PREPARE DD FORMS 1577 (UNSERVICEABLE (CONDEMNED) TAG MATERIEL | 33 |
| A2 DETERMINE REQUIREMENTS FOR SUPPLIES | 33 |
| E111 MAINTAIN FILES | 33 |
| A11 ESTABLISH WORK SCHEDULES | 22 |
| C52 EVALUATE PERSONNEL FOR COMPLIANCE WITH PERFORMANCE STANDARDS | 22 |
| D95 MAINTAIN STUDY REFERENCE FILES | 22 |
| C72 PERFORM SELF-INSPECTIONS | 22 |
| C43 EVALUATE EQUIPMENT RECORD FORMS | 22 |

APPENDIX B
SELECTED BACKGROUND INFORMATION
FOR
CAREER LADDER JOB TYPES

TABLE B1

SELECTED BACKGROUND DATA FOR AIR TRAFFIC CONTROL RADAR MAINTENANCE SPECIALTY JOBS

| | GSM-12 (LCC) | | GPN-22 | | GPN-25 | | PAR | | AN/PPN-62 (PAR) | | ASR/PAR GENERALISTS (GRP093) | | RADAR MAINT WORKCNTR NCOICs (GRP181) | | MAINT SUPVRS (GRP184) | | ELECT INSTL (EI) TEAM CHIEFS (GRP125) | | EI TEAM MEMBERS (GRP134) | | |
|-----------------------------|--------------------------|---------------|---------------------------------------|---------------------|-----------------------|---------------------|-----------------------|-----------------------|-----------------------|-----------------------|------------------------------|-----------------------|--------------------------------------|-----------------------|-----------------------|-----------------------|---------------------------------------|-----------------------|--------------------------|-----------------------|-----------------------|
| | ASR MAINT TECHS (GRP138) | CREW (GRP137) | CONSOLED HANDS-ON TRNG TEC S (GRP169) | MAINT CREW (GRP147) | MAINT TECHNS (GRP197) | MAINT CREW (GRP267) | MAINT TECHNS (GRP197) | MAINT TECHNS (GRP197) | MAINT TECHNS (GRP197) | MAINT TECHNS (GRP197) | MAINT TECHNS (GRP197) | MAINT TECHNS (GRP197) | MAINT TECHNS (GRP197) | MAINT TECHNS (GRP197) | MAINT TECHNS (GRP197) | MAINT TECHNS (GRP197) | MAINT TECHNS (GRP197) |
| NUMBER IN GROUP | 175 | 6 | 16 | 6 | 26 | 29 | 26 | 26 | 29 | 102 | 18 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 9 | |
| PERCENT OF SAMPLE | 23% | * | 2% | * | 3% | 4% | 3% | 3% | 4% | 13% | 2% | * | * | 2% | * | * | * | * | * | 1% | |
| PERCENT IN COMUS | 52% | 83% | 87% | 100% | 85% | 86% | 85% | 85% | 86% | 90% | 44% | 67% | 67% | 44% | 67% | 67% | 83% | 83% | 100% | 100% | |
| DAFSC DISTRIBUTION: | | | | | | | | | | | | | | | | | | | | | |
| 30331 | 10% | 50% | 13% | 0% | 8% | 17% | 8% | 8% | 17% | 20% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 11% | 11% | |
| 30351 | 55% | 50% | 62% | 67% | 54% | 72% | 54% | 54% | 72% | 57% | 0% | 17% | 17% | 0% | 17% | 33% | 33% | 33% | 78% | 78% | |
| 30371 | 34% | 0% | 25% | 33% | 38% | 10% | 38% | 38% | 10% | 23% | 100% | 83% | 83% | 100% | 83% | 67% | 67% | 67% | 11% | 11% | |
| DAFSC SUFFIX DISTRIBUTION: | | | | | | | | | | | | | | | | | | | | | |
| 30331A | 5% | 0% | 0% | 0% | 4% | 7% | 4% | 4% | 7% | 2% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | |
| 30331B | 2% | 33% | 6% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | |
| 30331C | 1% | 0 | 0% | 0% | 4% | 7% | 4% | 4% | 7% | 9% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | |
| 30331D | 0% | 0 | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 4% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | |
| 30331E | 0% | 17% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | |
| AVERAGE DATA: | | | | | | | | | | | | | | | | | | | | | |
| AVG GRADE | E-5 | E-4 | E-5 | E-5 | E-5 | E-4 | E-5 | E-5 | E-4 | E-4 | E-6 | E-7 | E-6 | E-6 | E-6 | E-6 | E-6 | E-6 | E-5 | E-5 | |
| AVG MONTHS IN CAREER FIELD | 76 | 45 | 69 | 105 | 74 | 46 | 74 | 74 | 46 | 66 | 158 | 169 | 146 | 158 | 169 | 146 | 146 | 146 | 39 | 39 | |
| AVG MONTHS IN SERVICE | 90 | 52 | 75 | 127 | 99 | 50 | 99 | 99 | 50 | 79 | 196 | 222 | 158 | 196 | 222 | 158 | 158 | 158 | 42 | 42 | |
| PERCENT IN FIRST ENLISTMENT | 37% | 68% | 44% | 17% | 35% | 66% | 35% | 35% | 66% | 43% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 89% | 89% | |
| PERCENT SUPERVISING | 2% | 0% | 12% | 0% | 4% | 0% | 4% | 4% | 0% | 3% | 28% | 100% | 33% | 28% | 100% | 33% | 33% | 33% | 0% | 0% | |
| AVG NO. OF TASKS PERFORMED | 332 | 206 | 235 | 332 | 271 | 163 | 271 | 271 | 163 | 265 | 322 | 100 | 91 | 322 | 100 | 91 | 91 | 91 | 232 | 232 | |

* Denotes value less than 1 percent
 NOTE: May not equal 100 percent due to rounding or nonresponse

TABLE B1 (CONTINUED)

SELECTED BACKGROUND DATA FOR AIR TRAFFIC CONTROL RADAR MAINTENANCE SPECIALTY JOBS

| | EI TEAM | | MAINT CONTROL | | PLANS AND SCHEDNG | | DIVISION MANAGERS | | TRACALS SUPTS | | MATERIEL CONTROL PERSONNEL | | QUALITY CONTROL INSPS | | JOB CONS | | BASIC COURSE INSTRS | | ADVANCED COURSE INSTRS | | |
|-----------------------------|-------------------------|-------------------------|-------------------------|-----------------------|-------------------|----------------|--------------------|----------------|---------------|------------------------|----------------------------|--|-----------------------|--|----------|--|---------------------|--|------------------------|--|--|
| | CHIEF NOMINEES (GRP152) | EI APPRENTICES (GRP127) | CONTROL SUPVRS (GRP191) | SCHEDNG PERS (GRP159) | MANAGERS (GRP192) | SUPTS (GRP199) | PERSONNEL (GRP111) | INSPS (GRP189) | CONS (GRP154) | COURSE INSTRS (GRP119) | COURSE INSTRS (GRP143) | | | | | | | | | | |
| NUMBER IN GROUP | 5 | 5 | 10 | 6 | 7 | 10 | 7 | 17 | 5 | 43 | 9 | | | | | | | | | | |
| PERCENT OF SAMPLE | * | * | 1% | * | * | 1% | * | 2% | * | 6% | 1% | | | | | | | | | | |
| PERCENT IN CONUS | 100% | 100% | 40% | 83% | 57% | 70% | 71% | 65% | 60% | 98% | 100% | | | | | | | | | | |
| DAFSC DISTRIBUTION: | | | | | | | | | | | | | | | | | | | | | |
| 30331 | 0% | 20% | 0% | 0% | 0% | 0% | 0% | 0% | 20% | 2% | 0% | | | | | | | | | | |
| 30351 | 80% | 80% | 50% | 100% | 0% | 0% | 0% | 35% | 60% | 86% | 44% | | | | | | | | | | |
| 30371 | 20% | 0% | 50% | 0% | 100% | 100% | 100% | 65% | 20% | 12% | 56% | | | | | | | | | | |
| DAFSC SUFFIX DISTRIBUTION: | | | | | | | | | | | | | | | | | | | | | |
| 30331A | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 20% | 0% | 0% | | | | | | | | | | |
| 30331B | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | | | | | | | | | | |
| 30331C | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | | | | | | | | | | |
| 30331D | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | | | | | | | | | | |
| 30331E | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | | | | | | | | | | |
| AVG GRADE | | | | | | | | | | | | | | | | | | | | | |
| E-5 | 67 | 29 | 116 | 85 | 189 | 152 | 187 | 135 | 33 | 79 | E-6 | | | | | | | | | | |
| AVG MONTHS IN CAREER FIELD | 106 | 30 | 140 | 94 | 208 | 235 | 205 | 164 | 73 | 93 | E-5 | | | | | | | | | | |
| AVG MONTHS IN SERVICE | 40% | 100% | 0% | 17% | 0% | 0% | 0% | 0% | 40% | 2% | 0% | | | | | | | | | | |
| PERCENT IN FIRST ENLISTMENT | | | | | | | | | | | | | | | | | | | | | |
| E-5 | 40% | 0% | 10% | 0% | 0% | 20% | 0% | 0% | 0% | 0% | 0% | | | | | | | | | | |
| PERCENT SUPERVISING | 361 | 72 | 52 | 22 | 39 | 42 | 26 | 70 | 7 | 11 | 0% | | | | | | | | | | |
| AVG NO. OF TASKS PERFORMED | | | | | | | | | | | 0% | | | | | | | | | | |
| | | | | | | | | | | | 27 | | | | | | | | | | |

APPENDIX C
SELECTED REPRESENTATIVE TASKS
FOR
3-SKILL LEVEL SHREDS

TABLE C1

REPRESENTATIVE TASKS PERFORMED BY DAFSC 30331A MEMBERS
(30 PERCENT OR BETTER MEMBERS PERFORMING)

| TASKS | PERCENT MEMBERS |
|------------------------------------------------------------------------------------------------|-----------------|
| T1441 PERFORMANCE CHECK AN/GPA-131 VIDEO MAPPER ASSEMBLIES, SUCH AS VIDEO CONVERTERS | 84 |
| H307 ALIGN RADAR SYSTEM POWER SUPPLIES | 84 |
| T1447 TROUBLESHOOT AN/GPA-131 VIDEO MAPPER SYSTEMS TO ASSEMBLY LEVEL, SUCH AS VIDEO CONVERTERS | 79 |
| W1537 PERFORMANCE CHECK AN/TPX-42 INDICATOR GROUPS | 74 |
| E154 PREPARE DD FORMS 1574 (SERVICEABLE TAG-MATERIEL) | 74 |
| E129 PREPARE AF FORMS 2413 (SUPPLY CONTROL LOG) | 68 |
| N858 PERFORMANCE CHECK AN/FPN-62 RECEIVER GROUPS | 68 |
| N817 ALIGN AN/FPN-62 ANTENNA PHASING | 63 |
| U1470 INSTALL AN/GPA-133 BRITE II ASSEMBLIES SUCH AS PRINTED CIRCUIT CARDS (PCC) | 63 |
| N854 INSTALL AN/FPN-62 TRANSMITTER SUBASSEMBLIES, SUCH AS PCC | 63 |
| W1511 ALIGN AN/TPX-42 INDICATOR GROUPS OD-56/57 | 63 |
| N878 TROUBLESHOOT AN/FPN-62 RECEIVERS TO SUBASSEMBLY LEVEL, SUCH AS PCC | 58 |
| W1527 INSTALL AN/TPX-42 TRANSMITTER RECEIVER UNITS | 56 |
| U1490 TROUBLESHOOT AN/GPA-133 BRITE II SYSTEMS TO ASSEMBLY LEVEL, SUCH AS CONRAC MONITORS | 58 |
| J475 ALIGN AN/GPN-20/21 AUTOMATIC FREQUENCY CONTROLS (AFC) | 53 |
| J566 PERFORMANCE CHECK AN/GPN-20/21 TRANSMITTER FREQUENCIES | 53 |
| E128 PREPARE AF FORMS 2005 (ISSUE/TURN IN REQUEST) | 53 |
| J484 ALIGN AN/GPN-20/21 MAGNETRON TUNING ASSEMBLIES | 47 |
| J599 TROUBLESHOOT AN/GPN-20/21 TRANSMITTERS T SUBASSEMBLY LEVEL | 47 |
| H356 PREPARE EQUIPMENT FOR PRECISION MEASUREMENT EQUIPMENT LABORATORY (PMEL) PROCESSING | 42 |

TABLE C2

REPRESENTATIVE TASKS PERFORMED BY DAFSC 30331B MEMBERS
(30 PERCENT OR BETTER MEMBERS PERFORMING)

| TASKS | PERCENT MEMBERS | |
|-------|----------------------------------------------------------------------------------------------------|----|
| H345 | PERFORM CORROSION CONTROL ON EQUIPMENT RACKS | 74 |
| H307 | ALIGN RADAR SYSTEM POWER SUPPLIES | 74 |
| H363 | REMOVE RADAR SYSTEM POWER SUPPLY DISCRETE COMPONENTS, SUCH AS RECTIFIERS | 58 |
| J567 | PERFORMANCE CHECK AN/GPN-20/21 TRANSMITTER POWER LEVELS | 53 |
| J566 | PERFORMANCE CHECK AN/GPN-20/21 TRANSMITTER FREQUENCIES | 53 |
| J569 | PERFORMANCE CHECK AN/GPN-20/21 VOLTAGE STANDING WAVE RATIOS (VSWR) | 47 |
| J536 | PERFORMANCE CHECK AN/GPN-20/21 MINIMUM DISCERNABLE SIGNALS (MDS) | 47 |
| H318 | FABRICATE MINICOAXIAL CABLES | 47 |
| J523 | PERFORM AN/GPN-20/21 TURN-ON OR TURN-OFF PROCEDURES | 47 |
| H330 | INSTALL CABLE TERMINATION LOADS | 42 |
| J534 | PERFORMANCE CHECK AN/GPN-20/21 MAGNETRON FILAMENT VOLTAGES | 42 |
| J549 | PERFORMANCE CHECK AN/GPN-20/21 NORMAL VIDEO GAINS | 42 |
| J537 | PERFORMANCE CHECK AN/GPN-20/21 MTI BALANCE LEVELS | 42 |
| J547 | PERFORMANCE CHECK AN/GPN-20/21 NORMAL CHANNELS | 37 |
| K606 | ALIGN AN/GPN-22 GAIN AND PHASE OF ANGLE TRACK AND SCAN RECEIVERS | 37 |
| K661 | PERFORMANCE CHECK AN/GPN-22 SPLIT PULSE AND CHIRP FREQUENCIES | 37 |
| K667 | PERFORMANCE CHECK AN/GPN-22 TRANSMITTER POWER OUT AND PULSE CHARACTERISTICS | 37 |
| F213 | TEST PROGRAMS IN RADAR COMPUTERS | 37 |
| K609 | ALIGN AN/GPN-22 PAR PERFORMANCE FALSE ALARM RATES | 37 |
| J484 | ALIGN AN/GPN-20/21 MAGNETRON TUNING ASSEMBLIES | 37 |
| K668 | PERFORMANCE CHECK AN/GPN-22 WAVEGUIDE UNDERPRESSURE FAULT DETECTION CIRCUITS | 37 |
| W1540 | PERFORMANCE CHECK AN/TPX-42 OR-78 TRANSMITTER RECEIVER GROUPS | 37 |
| K600 | ALIGN AN/GPN-22 ANTENNA COMPRESSOR DEHYDRATORS | 37 |
| U1481 | PERFORMANCE CHECK AN/GPA-133 TVC | 37 |
| U1480 | PERFORMANCE CHECK AN/GPA-133 TVA | 37 |
| W1563 | TROUBLESHOOT AN/TPX-42 RECEIVER TRANSMITTER GROUPS TO PCC LEVEL | 37 |
| J525 | PERFORMANCE CHECK AN/GPN-20/21 ANTENNA POWER DISTRIBUTION PANELS | 32 |
| J485 | ALIGN AN/GPN-20/21 MOVING TARGET INDICATOR (MTI) CHANNEL ANALOG TO DIGITAL (A TO D) CONVERTERS | 32 |
| J520 | INSTALL AN/GPN-20/21 TRANSMITTER SUBASSEMBLIES, SUCH AS PCC | 32 |
| 0956 | PERFORMANCE CHECK AN/MPN-13/14 ASR TRANSMITTER RECOVERY TIMES | 32 |
| 0958 | PERFORMANCE CHECK AN/MPN-12/14 ASR TRANSMODULATOR AVERAGE POWER OUTPUTS | 32 |
| 0953 | PERFORMANCE CHECK AN/MPN-13/14 ASR MOVING TARGET INDICATOR (MTI) MINIMUM DISCERNABLE SIGNALS (MDS) | 32 |

TABLE C3

REPRESENTATIVE TASKS PERFORMED BY DAFSC 30331C MEMBERS
(30 PERCENT OR BETTER MEMBERS PERFORMING)

| TASK TITLE | PERCENT MEMBERS |
|------------------------------------------------------------------------------------------------|-----------------|
| E150 PREPARE AFTO FORMS 349 (MAINTENANCE DATA COLLECTION RECORD) | 93 |
| U1476 PERFORMANCE CHECK AN/GPA-133 CAMERAS | 79 |
| U1464 ALIGN AN/GPA-133 TRIGGER VIDEO AMPLIFIER (TVA) LINE DRIVERS | 79 |
| H303 ALIGN ANCILLARY EQUIPMENT POWER SUPPLIES | 71 |
| U1489 TROUBLESHOOT AN/GPA-133 BRITE II ASSEMBLIES TO SUBASSEMBLY LEVEL, SUCH AS PCC | 71 |
| U1479 PERFORMANCE CHECK AN/GPA-133 PPI (IP-1016) | 71 |
| N856 PERFORMANCE CHECK AN/FPN-62 ANTENNA GROUPS | 71 |
| N857 PERFORMANCE CHECK AN/FPN-62 INDICATING GROUPS | 71 |
| T1444 REMOVE AN/GPA-131 VIDEO MAPPER ASSEMBLIES, SUCH AS VIDEO CONVERTERS | 64 |
| I428 PERFORMANCE CHECK AN/GPN-12 THREE TIMES FAULT CIRCUITS | 64 |
| N859 PERFORMANCE CHECK AN/FPN-62 REMOTING GROUPS | 64 |
| I410 PERFORMANCE CHECK AN/GPN-12 LINE DRIVERS | 64 |
| T1441 PERFORMANCE CHECK AN/GPA-131 VIDEO MAPPER ASSEMBLIES, SUCH AS VIDEO CONVERTERS | 74 |
| N819 ALIGN AN/FPN-62 AUTOMATIC FREQUENCY CONTROLS (AFC) | 64 |
| T1447 TROUBLESHOOT AN/GPA-131 VIDEO MAPPER SYSTEMS TO ASSEMBLY LEVEL, SUCH AS VIDEO CONVERTERS | 64 |
| I425 PERFORMANCE CHECK AN/GPN-12 RECEIVER SENSITIVITY TIMING CONSTANT (STC) CIRCUITS | 64 |
| I371 ALIGN AN/GPN-12 AUTOMATIC FREQUENCY CONTROLS (AFC) | 64 |
| I418 PERFORMANCE CHECK AN/GPN-12 RECEIVER GAIN UNITS | 64 |
| N858 PERFORMANCE CHECK AN/FPN-62 RECEIVER GROUPS | 64 |
| I384 ALIGN AN/GPN-12 TRANSMITTER FREQUENCIES | 64 |
| I413 PERFORMANCE CHECK AN/GPN-12 NORMAL GAIN AND BALANCE UNITS | 64 |
| I430 PERFORMANCE CHECK AN/GPN-12 TRANSMITTER METER READINGS | 64 |
| I435 PERFORMANCE CHECK TIMING OF AN/GPN-12 SYSTEMS | 64 |
| I378 ALIGN AN/GPN-12 NORMAL CHANNELS | 64 |
| I434 PERFORMANCE CHECK RECOVERY TIME OF AN/GPN-12 RECEIVERS | 64 |
| N836 ALIGN AN/FPN-62 SENSITIVITY TIME CONSTANT (STC) CIRCUITS | 64 |
| H344 PERFORM CORROSION CONTROL ON ELECTRICAL CURRENT CARRYING ASSEMBLIES | 64 |
| U1461 ALIGN AN/GPA-133 SWEEP CORRECTION CIRCUITS | 64 |
| N822 ALIGN AN/FPN-62 DATA MOVING TARGET INDICATOR (DMTI) INTERVAL | 64 |
| N837 ALIGN AN/FPN-62 SYSTEM MOVING TARGET INDICATORS (MTI) | 64 |
| U1460 ALIGN AN/GPA-133 PRETRIGGER RANGING MARK, RANGING, AND OFF SCREEN BLANK CIRCUITS | 64 |
| I409 PERFORMANCE CHECK AN/GPN-12 DIGITAL PROCESSORS | 64 |
| N815 ALIGN AN/FPN-62 ANGLE DATA GENERATOR | 64 |
| T1440 INSTALL AN/GPA-131 VIDEO MAPPER SUBASSEMBLIES, SUCH AS PRINTED CIRCUIT CARDS (PCC) | 57 |

TABLE C4

REPRESENTATIVE TASKS PERFORMED BY DAFSC 30331D MEMBERS
(30 PERCENT OR BETTER MEMBERS PERFORMING)

| TASK TITLE | PERCENT MEMBERS |
|--------------------------------------------------------------------------------------|-----------------|
| I425 PERFORMANCE CHECK AN/GPN-12 RECEIVER SENSITIVITY TIMING CONSTANT (STC) CIRCUITS | 83 |
| I420 PERFORMANCE CHECK AN/GPN-12 RECEIVER PARAMETRIC AMPLIFIERS | 83 |
| I413 PERFORMANCE CHECK AN/GPN-12 NORMAL GAIN AND BALANCE UNITS | 83 |
| I371 ALIGN AN/GPN-12 AUTOMATIC FREQUENCY CONTROLS (AFC) | 83 |
| W1532 PERFORM AN/TPX-42 TURN-ON OR TURN-OFF PROCEDURES | 83 |
| W1516 ALIGN AN/TPX-42 RECEIVER TRANSMITTER GROUPS | 83 |
| I384 ALIGN AN/GPN-12 TRANSMITTER FREQUENCIES | 83 |
| I427 PERFORMANCE CHECK AN/GPN-12 SYSTEM AND RECEIVER CONTROL PANELS | 67 |
| I450 REMOVE AN/GPN-12 RECEIVER SUBASSEMBLIES, SUCH AS MODULES | 67 |
| W1525 INSTALL AN/TPX-42 PRINTED CIRCUIT CARDS (PCC) | 67 |
| H353 PERFORMANCE CHECK RADAR SYSTEM POWER SUPPLIES | 67 |
| W1559 TROUBLESHOOT AN/TPX-42 INDICATOR GROUPS TO PCC LEVEL | 67 |
| I426 PERFORMANCE CHECK AN/GPN-12 RECEIVER | 67 |
| T1438 INSTALL AN/GPA-131 VIDEO MAPPER ASSEMBLIES, SUCH AS VIDEO CONVERTERS | 67 |
| U1476 PERFORMANCE CHECK AN/GPA-133 CAMERAS | 50 |
| W1563 TROUBLESHOOT AN/TPX-42 RECEIVER | 50 |
| H348 PERFORM HIGH RELIABILITY SOLDERING | 50 |
| W1564 TROUBLESHOOT AN/TPX-42 TO ASSEMBLY LEVEL, SUCH AS INTER-FERENCE BLANKERS | 50 |
| H339 LUBRICATE MECHANICAL BEARING SURFACES, SUCH AS ANTENNA ROTARY JOINTS | 50 |
| W1514 ALIGN AN/TPX-42 INTERCONNECTING GROUPS | 50 |
| W1557 TROUBLESHOOT AN/TPX-42 CODER | 50 |
| H345 PERFORM CORROSION CONTROL ON EQUIPMENT RACKS | 50 |
| E110 INVENTORY TOOLS, EQUIPMENT, OR SUPPLIES | 33 |

TABLE C5

REPRESENTATIVE TASKS PERFORMED BY DAFSC 30331E MEMBERS
(30 PERCENT OR BETTER MEMBERS PERFORMING)

| TASK TITLE | PERCENT MEMBERS |
|---------------------------------------------------------------------------------------|-----------------|
| H307 ALIGN RADAR SYSTEM POWER SUPPLIES | 94 |
| P1088 ALIGN AN/TPN-19 PAR VERTICAL SENSORS | 76 |
| P1183 PERFORMANCE CHECK AN/TPN-19 PAR RECEIVERS | 71 |
| P1185 PERFORMANCE CHECK AN/TPN-19 PAR RML RECEIVERS | 71 |
| P1025 ALIGN AN/TPN-19 ASR RECEIVER FRONT PANELS | 71 |
| P1173 PERFORMANCE CHECK AN/TPN-19 PAR ANTENNA BEAM POSITION CONTROL UNITS (ABPCU) | 71 |
| P1131 PERFORM AN/TPN-19 PAR TURN-ON OR TURN-OFF PROCEDURES | 71 |
| P1032 ALIGN AN/TPN-19 ASR RML MULTIPLEXER VIDEO TRIGGER COMBINERS | 65 |
| P1050 ALIGN AN/TPN-19 OPS ASR DEMULTIPLEXER VIDEO MULTITRIGGER SEPARATORS | 65 |
| P1049 ALIGN AN/TPN-19 OPS ASR DEMULTIPLEXER VIDEO TRIGGER SEPARATORS | 65 |
| P1041 ALIGN AN/TPN-19 ASR SYNCHRONIZER VIDEO NOISE LEVELS | 65 |
| P1188 PERFORMANCE CHECK AN/TPN-19 PAR SPLIT PULSES | 65 |
| P1079 ALIGN AN/TPN-19 PAR RML TRANSMITTER BESSEL ZERO AND RECEIVER BASEBAND CIRCUITS | 65 |
| P1071 ALIGN AN/TPN-19 PAR RML DEMULTIPLEXER AM DEMODULATOR COMPUTER DATA | 65 |
| P1147 PERFORMANCE CHECK AN/TPN-19 ASR RECEIVER PRETRIGGER PULSE RECURRENT FREQUENCIES | 65 |
| P1156 PERFORMANCE CHECK AN/TPN-19 ASR SYNCHRONIZER VIDEO PROCESSORS | 65 |
| P1016 ALIGN AN/TPN-19 ASR ANTENNA TILT INDICATORS | 65 |
| P1083 ALIGN AN/TPN-19 PAR TRACK-SCAN VIDEO CIRCUITS | 65 |
| P1155 PERFORMANCE CHECK AN/TPN-19 ASR SYNCHRONIZER TIMING | 65 |
| P1028 ALIGN AN/TPN-19 ASR RML DEMULTIPLEXOR 3-CHANNEL AMPLITUDE MODULATION (AM) | 65 |
| P1059 ALIGN AN/TPN-19 PAR UNIT CLOCK GENERATORS | 59 |
| P1142 PERFORMANCE CHECK AN/TPN-19 ASR MTI NON-COHO | 59 |
| P1154 PERFORMANCE CHECK AN/TPN-19 ASR | 59 |
| P1126 PERFORM AN/TPN-19 CDU TELEPHONE PATCHING | 59 |
| P1133 PERFORMANCE CHECK AN/TPN-19 ASR ANTENNA TILT INDICATORS | 59 |
| P1024 ALIGN AN/TPN-19 ASR RADIO COMMUNICATIONS GROUPS | 59 |
| P1170 PERFORMANCE CHECK AN/TPN-19 OPS RADIO COMMUNICATIONS GROUPS | 59 |
| P1171 PERFORMANCE CHECK AN/TPN-19 OPS REFRESH MEMORIES | 59 |
| H333 INSTALL RADAR SYSTEM POWER SUPPLIES | 59 |
| E151 PREPARE AFTO FORMS 350 (REPARABLE ITEM PROCESSING TAG) | 59 |
| P1152 PERFORMANCE CHECK AN/TPN-19 ASR RML TRANSMITTER METERS | 53 |
| P1127 PERFORM AN/TPN-19 OPERATIONS SHELTER EMERGENCY OPERATING PROCEDURES | 53 |
| F195 LEVEL MOBILE SHELTERS | 47 |

END
FILMED
FEB. 1988
DTIC