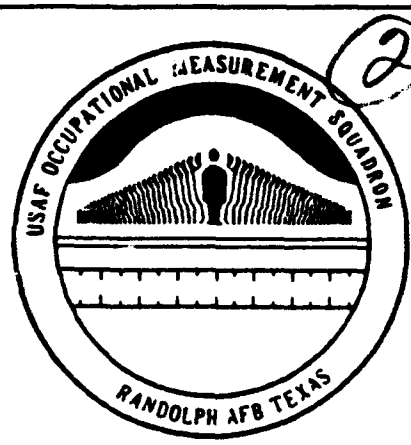

UNITED STATES AIR FORCE

OCCUPATIONAL SURVEY REPORT

TELEPHONE SWITCHING

AFSC 362X1
(PROJECTED 2E7X1)

AFPT 90-362-952

OCTOBER 1993

OCCUPATIONAL ANALYSIS PROGRAM
USAF OCCUPATIONAL MEASUREMENT SQUADRON
AIR EDUCATION and TRAINING COMMAND
1550 5th STREET EAST
RANDOLPH AFB, TEXAS 78150-4449

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USMC	1		1	1
7 CG/LGQQ (1600 AF PENTAGON WASHINGTON DC 20330-1600	1		1	1
81 TTG/CCVT	1			
361 TTS/TTOK (511 9TH AVENUE STE 1 SHEPPARD AFB TX 76311-2338)	11	2	8	7
396 TTG/TTS (620 9TH STREET STE 1 SHEPPARD AFB TX 76311-2338)	1			1

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PREFACE

This report presents the results of an occupational survey of the Telephone Switching career ladder, AFSC 362X1 (soon to be AFSC 2E7X1). Authority for conducting occupational surveys is found in AFR 35-2. Computer products used in this report are available for use by operations and training officials.

Captain R. H. Babin, Occupational Analyst, developed the survey instrument. Second Lieutenant Sheon H. Mendoza analyzed the data and wrote the final report. Ms Rebecca Hernandez provided computer programming support, and Ms Raquel A. Soliz provided administrative support. This report has been reviewed and approved for release by Major Randall C. Agee, Chief, Airman Analysis Section, Occupational Analysis Flight, USAF Occupational Measurement Squadron.

Copies of this report are distributed to Air Staff sections, major commands, and other interested training and management personnel. Additional copies may be requested from the USAF Occupational Measurement Squadron, Attention: Chief, Occupational Analysis Flight (OMY), 1550 5th Street East, Randolph AFB, Texas 78150-4449.

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SUMMARY OF RESULTS

1. *Survey Coverage*: The survey results are based on the responses of 447 military personnel assigned to the AFSC 362X1 (2E7X1) career ladder. This sample represents 63 percent of the total assigned strength.

2. *Career Ladder Structure*: Five jobs and four clusters were identified. Nearly half the sample fell within the main cluster--Digital Switching Systems Maintenance. Other jobs within the career ladder differed in the amount of time spent on administrative, supervisory, and commercial coordination tasks.

3. *Career Ladder Progression*: AFSC 362X1 personnel progress typically through the career ladder. At the 3- and 5-skill level, the incumbents perform a highly technical job, centered around maintenance, troubleshooting, and repair tasks. Seven-skill level personnel perform more administrative and supervisory tasks, as well as inspection and quality control tasks. Specialty descriptions provide an accurate overview of the tasks involved with each of the skill levels.

4. *Training Analysis*: A match of the survey data to the AFSC 362X1 Specialty Training Standard (STS), identified 57 paragraphs not supported by the OSR data. Many of these unsupported paragraphs were related to electromechanical switching systems maintenance. Revisions of the STS are scheduled for February 1994.

5. *Job Satisfaction Analysis*: The job interest and perceived utilization of talents for AFSC 362X1 career ladder personnel were higher than that of other mission equipment maintenance personnel surveyed in 1992. The perceived utilization of talents for AFSC 362X1 personnel was lower than that of the comparative sample. This difference may be the result of the change in technology. A notable difference was identified in the sense of accomplishment for AFSC 362X1 personnel working within the nontechnical jobs within the job structure. There was also a notable difference in the job interest of personnel working within the most commonly held jobs within the career field and that of the other smaller jobs.

6. *Implications*: There were vast changes in the job structure between this survey and the last, due to the changes in technology and the contracting out of engineering and installation duties. The analysis of the STS revealed that the upcoming revisions to the document are warranted.

OCCUPATIONAL SURVEY REPORT (OSR)
TELEPHONE SWITCHING CAREER LADDER
AFSC 362X1
(Projected to be AFSC 2E7X1 after 31 October 93)

INTRODUCTION

This occupational survey was requested by the 3750th Technical Training Wing, Sheppard Training Center, to review the structure of the career ladder based on the inclusion of digital switching in the basic J3ABR36231 course and the elimination of electromechanical switching from the course. The last survey pertaining to this career ladder was published March 1990.

Background

According to AFR 39-1 Specialty Descriptions, personnel in this career field are responsible for installing, removing, refurbishing, maintaining, testing, and troubleshooting telephone switching systems, T-carriers, fiber optic modems, and multiplexers and associated equipment supporting systems for command, control, communications, and computers (SC4).

In addition, the 7-skill level personnel are responsible for directing project and maintenance actions of telephone switching systems, T-carrier, fiber optic modems, and multiplexers and associated equipment supporting systems for command, control, communications, and computers.

Upon completion of basic training, AFSC 362X1 personnel complete the J3ABR36231 003 course taught at Sheppard AFB TX. The course is 61 days long and covers the fundamentals of digital switching.

SURVEY METHODOLOGY

Inventory Development

The data collection instrument for this occupational survey was USAF Job Inventory (JI) AFPT 90-305-931, dated July 1992. A tentative task list was created using pertinent career ladder regulations, publications, and directives. Tasks were also taken from the previous JI.

This tentative task list was then reviewed, refined, and validated through personal interviews with 46 subject-matter experts (SMEs). These SMEs were selected to cover a variety of major commands (MAJCOMs) and telephone switching functions at the following locations:

BASE	REASON FOR VISIT
Sheppard AFB TX	Technical School
Griffiss AFB NY	Location of the only SYS 85 equipment (AT&T)
Kelly AFB TX	Uses the DMS100 switch with large trunk capacity
Keesler AFB MS	Uses MSL100 switch (NTI), maintains an Engineering and Installation (E & I) office
Eglin AFB FL	Extensive use of fiber optic equipment
Kirtland AFB NM	Uses an electromechanical SXS switch

These locations were identified by the Air Force Functional Manager and the MAJCOM Functional Managers to provide input from digital telephone switches currently in use and to include E & I tasking and functions.

The final survey contained a comprehensive listing of 465 tasks grouped under 16 duty headings, with a background section requesting information such as grade, job title, time in present job, time in service, job satisfaction, and equipment maintained.

Survey Administration

From June through October 1991, Military Personnel Flights at operational bases worldwide administered the inventory to all eligible AFSC 362X1 personnel. All AFSC 362X1 personnel were considered eligible, unless they were of one of the following categories: (1) hospitalized during administration period; (2) in transition for a permanent change of station; (3) personnel retiring during administration period; or (4) personnel in their job for less than 6 weeks. Participants were selected from a computer-generated mailing list obtained from personnel data tapes maintained by the Human Resources Directorate at the Armstrong Laboratory.

Each individual completing an inventory was required to complete an identification and biographical information section. They were also required to check each task on the inventory they performed in their current job. Once they had identified the tasks they performed, they were instructed to go back through the inventory and rate each of the tasks they perform on a 9-point scale, showing the relative time spent performing that task as compared to other tasks they performed. These ratings ranged from very small to very large amount of time spent.

Using the ratings provided by the respondents, relative time spent for each task was computed, summing all the ratings given by the respondent and assuming this sum represented the respondents' total time spent. Each rating was then divided by this sum and multiplied by 100 to get a relative percent time spent rating for each task.

Survey Sample

The sample used for this study was examined to ensure an accurate representation across MAJCOMs and paygrades. Table 1 reflects the percentage distribution, by MAJCOM, of the assigned and sample AFSC 362X1 personnel as of June 1993. The 447 respondents in the final sample represent 63 percent of the eligible population of AFSC 362X1 personnel. Table 2 reflects the paygrade distribution of both the sample and the population.

Task Factor Administration

Because job descriptions alone will not provide sufficient data to make decisions about career ladder documents or training programs, task factor information is needed. Senior AFSC 362X1 personnel (generally E-6 or E-7 technicians) completed a second task factor booklet for either training emphasis (TE) or task difficulty (TD). These TE and TD booklets are processed independently from the JIs. The information obtained from these booklets is used in a variety of analyses discussed in more detail throughout the report.

Task Difficulty (TD). TD is defined as an estimate of the length of time it takes the average airman to learn to do the task. For this survey, 34 experienced NCOs rated the difficulty of the inventory tasks on a 9-point scale ranging from 1 (easy to learn) to 9 (difficult to learn). The interrater agreement among these raters was acceptable. TD ratings are adjusted to ensure that tasks have an average value of 5.0, with a standard deviation of 1.0. Thus, any task having a difficulty level of 6.0 or higher is considered difficult to learn.

Training Emphasis (TE). TE is defined as a rating of which tasks require emphasis in structured training for first-enlistment personnel. Structured training is any training given through any organized method. This includes, but is not limited to, training provided in resident training schools, field training detachments (FTD), mobile training teams (MTT), and formal on-the-job training (OJT). Forty-five experienced NCOs rated the tasks in the inventory on a 10-point scale ranging from 0 (no training required) to 9 (extremely high amount of training required). The

interrater agreement for the TE ratings was also acceptable. The average TE rating was 2.80, with a standard deviation of 1.53. Any task rated 4. or hig. r was considered to have a high TE.

Using TD, TE, and percent members performing data, insight into first-enlistment personnel training requirements can be obtained. Such insights may suggest the need for lengthening, shortening, inclusion, or deletion of tasks from formal training or instruction.

CAREER LADDER STRUCTURE

The first step in the occupational analysis process is to identify the structure of the career ladder in terms of the jobs performed by the respondents. Comprehensive Occupational Data Analysis Programs (CODAP) assists by creating an individual job description for each respondent based on the tasks performed and relative amount of time spent on the tasks. The CODAP automated job clustering program then compares all the individual job descriptions, locates the two descriptions with the most similar tasks and time spent ratings, and combines them to form a composite job description. In successive stages, new members are added to this initial group, or new groups are formed based on the similarity of tasks and time spent ratings.

The basic group used in the hierarchical clustering process is the *Job*. When two or more jobs have a substantial degree of similarity in tasks performed and time spent on tasks, they are grouped together and identified as a *Cluster*. The structure of a career ladder is defined in terms of jobs and clusters of jobs.

Overview of Specialty Jobs

Based on the similarity of JI responses, five jobs and four clusters were identified. Forty-seven percent of the respondents perform the work represented by the Digital Switching Systems Maintenance cluster. Within the cluster, two jobs were identified. The remaining jobs identified in the structure analysis represent support and management functions.

Figure 1 illustrates the division of jobs within the Telephone Switching career ladder. Table 3 presents the relative time spent on duties by respondents within the identified career ladder jobs.

The stage (ST) or group (GP) numbers shown beside the title are reference numbers assigned to the group by the CODAP program. The symbol "N" denotes the number of respondents performing the job. Table 4 lists selected background data for the groups.

TABLE 1

AFSC 362X1 MAJCOM DISTRIBUTION

COMMAND	PERCENT OF ASSIGNED	PERCENT OF SAMPLE
USAFE	17	20
AETC	11	12
PACAF	13	12
AFIC	1	-
AMC	9	10
AFMC	14	7
AFSPACECOM	6	7
AFC4A	9	9
ACC	14	15
7 THCG	3	4
EUROPE	2	2
OTHER	1	1

Total Assigned as of April 1992: 799
Total Eligible for Survey: 711
Total in Sample: 447
Percent of Eligible in Sample: 63%
Percent of Assigned in Sample: 55%

- Denotes less than 1 percent

TABLE 2

PAYGRADE DISTRIBUTION OF AFSC 362X1

PAYGRADE	PERCENT OF ASSIGNED*	PERCENT OF SAMPLE
E-2	2	3
E-3	11	9
E-4	31	32
E-5	29	26
E-6	15	17
E-7	11	13
E-8	1	-

* As of April 1992

\- Denotes less than 1 percent

AFSC 362X1
JOB STRUCTURE

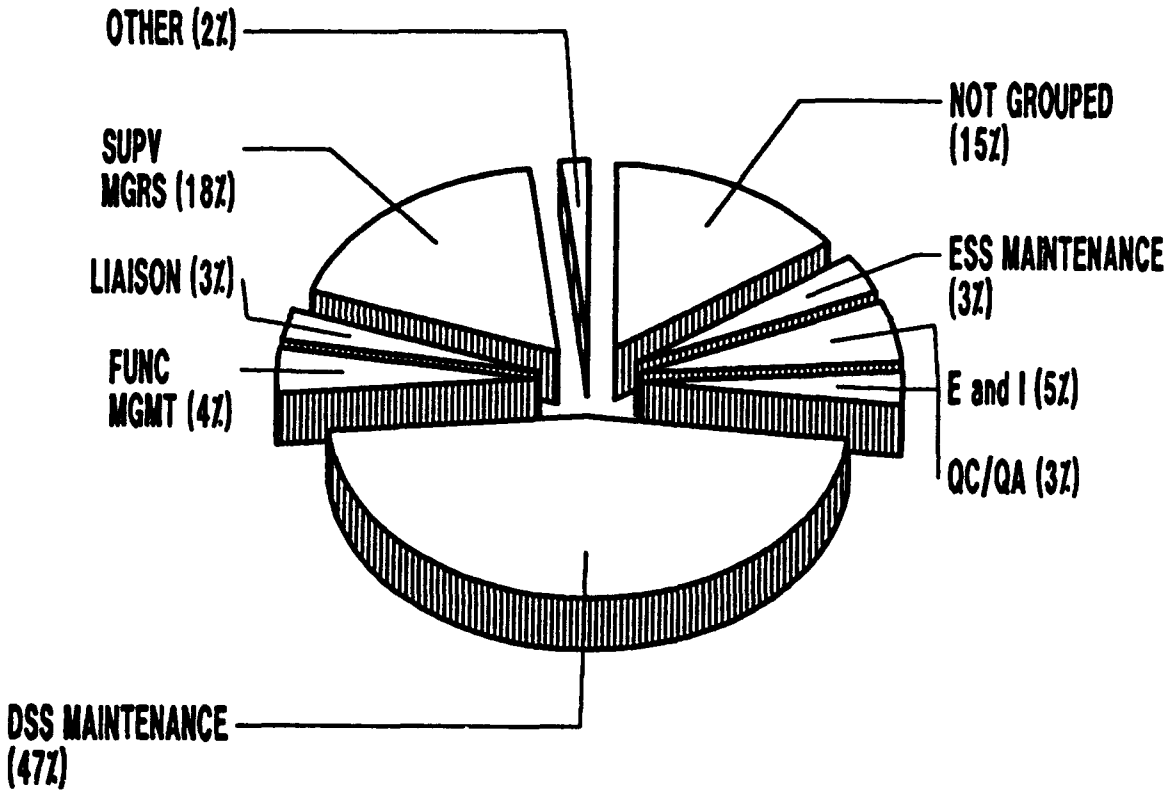

FIGURE 1

TABLE 3

DISTRIBUTION OF DUTY TIME SPENT BY MEMBERS OF CAREER LADDER
(RELATIVE PERCENT OF JOB TIME)

	DUTIES	DSS MAINT	ESS MAINT	E&I TEAM	JOB CNTRL
A	ORGANIZING AND PLANNING	6	6	4	32
B	DIRECTING AND IMPLEMENTING	3	4	2	5
C	INSPECTING AND EVALUATING	3	4	3	-
D	TRAINING	4	4	2	4
E	PERFORMING ADMINISTRATIVE OR SUPPLY TASKS	7	8	8	13
F	PERFORMING DIAL SERVICES ADMINISTRATOR TASKS	4	-	-	-
G	PERFORMING JOB CONTROL TASKS	6	4	-	38
H	MAINTAINING SPECIAL CIRCUITS AND ANTICILLARY EQUIPMENT ON DIGITAL SWITCHED SYSTEMS	17	4	2	-
I	PERFORMING CUSTOMER SERVICE TASKS	12	7	3	-
J	MAINTAINING DIGITAL SWITCHING CENTRAL CONTROL SYSTEMS	4	-	-	-
K	MAINTAINING DIGITAL SWITCHING NETWORKS	2	-	-	-
L	MAINTAINING DIGITAL LINE AND TRUNK INTERFACE EQUIPMENT	8	-	-	-
M	MAINTAINING DIGITAL SWITCHING INPUT/OUTPUT EQUIPMENT	6	1	-	-
N	PERFORMING ENGINEERING AND INSTALLATION TASKS	3	1	57	-
O	MAINTAINING ELECTROMECHANICAL TELEPHONE SWITCHING SYSTEMS	1	39	-	8
P	PERFORMING GENERAL MAINTENANCE AND CORROSION CONTROL TASKS	13	18	19	-

- Denotes less than 1 percent

TABLE 3 (CONTINUED)

DISTRIBUTION OF DUTY TIME SPENT BY MEMBERS OF CAREER LADDER
(RELATIVE PERCENT OF JOB TIME)

	DUTIES	COM LIAISON	QC/ QA	RESIDENCE TRAINERS	SUPV/ MGMT	FUNC MGRS
A	ORGANIZING AND PLANNING	10	21	-	25	21
B	DIRECTING AND IMPLEMENTING	10	12	6	15	12
C	INSPECTING AND EVALUATING	5	17	8	18	17
D	TRAINING	3	23	85	13	23
E	PERFORMING ADMINISTRATIVE OR SUPPLY TASKS	15	10	-	9	10
F	PERFORMING DIAL SERVICES ADMINISTRATOR TASKS	5	3	-	2	-
G	PERFORMING JOB CONTROL TASKS	41	-	-	3	3
H	MAINTAINING SPECIAL CIRCUITS AND ANTICILLARY EQUIPMENT ON DIGITAL SWITCHED SYSTEMS	1	2	-	3	2
I	PERFORMING CUSTOMER SERVICE TASKS	6	2	-	2	2
J	MAINTAINING DIGITAL SWITCHING CENTRAL CONTROL SYSTEMS	-	-	-	1	-
K	MAINTAINING DIGITAL SWITCHING NETWORKS	-	-	-	1	-
L	MAINTAINING DIGITAL LINE AND TRUNK INTERFACE EQUIPMENT	2	-	-	1	-
M	MAINTAINING DIGITAL SWITCHING INPUT/OUTPUT EQUIPMENT	-	-	-	1	-
N	PERFORMING ENGINEERING AND INSTALLATION TASKS	-	7	-	2	7
O	MAINTAINING ELECTROMECHANICAL TELEPHONE SWITCHING SYSTEMS	-	-	-	3	-
P	PERFORMING GENERAL MAINTENANCE AND CORROSION CONTROL TASKS	2	2	-	1	2

- Denotes less than 1 percent

TABLE 4

SELECTED BACKGROUND DATA FOR SPECIALTY JOBS

	DIGITAL SWITCHING SYSTEMS (ST57)	ELECTRO-MECHANICAL SWITCHING SYS MAINT (ST70)	E&I TEAM (ST72)	JOB CONTROL (ST67)
NUMBER IN GROUP	209	15	24	4
PERCENT OF SAMPLE	47%	4%	5%	*
PERCENT IN CONUS	62%	87%	92%	50%
DAFSC DISTRIBUTION				
36231	15%	13%	4%	0%
36251	62%	73%	67%	100%
36271	22%	13%	29%	0%
PREDOMINANT PAYGRADE	E-4	E-4	E-4	E-4
AVERAGE TICF (MOS)	80	64	98	51
AVERAGE TAFMS (MOS)	92	96	110	57
PERCENT IN FIRST ENLISTMENT	55%	47%	30%	100%
PERCENT SUPERVISING	47%	33%	33%	0%
AVERAGE NUMBER OF TASKS PERFORMED	117	97	46	10

* Denotes less than 1 percent

TABLE 4 (CONTINUED)

SELECTED BACKGROUND DATA FOR SPECIALTY JOBS

	COMMERCIAL LIAISONS (ST26)	QC/ QA (GP42)	RESIDENT TRAINING INSTRS (ST175)	SUPVY/ MGMT (ST51)	FUNCTIONAL MANAGERS (ST31)
NUMBER IN GROUP	12	13	4	80	18
PERCENT OF SAMPLE	3%	3%	*	18%	4%
PERCENT IN CONUS	75%	54%	100%	51%	67%
DAFSC DISTRIBUTION					
36231	0%	8%	0%	0%	0%
36251	58%	38%	75%	24%	17%
36271	42%	54%	25%	75%	83%
PREDOMINANT PAYGRADES	E-5	E-7	E-5	E-6	E-7
AVERAGE TICF (MOS)	130	123	109	152	193
AVERAGE TAFMS (MOS)	134	143	111	172	207
PERCENT IN FIRST ENLISTMENT	0%	0%	8%	1%	0%
PERCENT SUPERVISING	0%	42%	46%	92%	11%
AVERAGE NUMBER OF TASKS PERFORMED	15	24	32	81	15

* Denotes less than 1 percent

I. DIGITAL SWITCHING SYSTEMS MAINTENANCE CLUSTER (ST57, N=209)

   A. Digital Switch Maintenance Job (ST98, N=140)
   B. Cable Engineer Job (ST113, N=12)

II. ELECTROMECHANICAL SWITCHING SYSTEMS MAINTENANCE JOB (ST70, N=15)

III. ENGINEERING AND INSTALLATION (E & I) TEAM JOB (ST72, N=24)

IV. JOB CONTROL JOB (ST67, N=4)

V. COMMERCIAL LIAISONS JOB (ST26, N=12)

VI. QUALITY CONTROL/QUALITY ASSURANCE CLUSTER (GP42, N=13)

VII. RESIDENT TRAINING INSTRUCTORS JOB (ST175, N=4)

VIII. SUPERVISORY/MANAGEMENT CLUSTER (ST51, N=80)

   A. NCOIC Job (ST116, N=61)
   B. Wire Branch Chiefs Job (ST94, N=7)

IX. FUNCTIONAL MANAGERS CLUSTER (ST31, N=18)

The respondents forming these groups account for 83 percent of the survey sample. The remaining 17 percent of the respondents perform tasks or series of tasks which did not allow the program to group them with members of these jobs. Some examples of respondents performing these highly unique jobs included the Career Development Course (CDC) Writer, the Bidds Management System Administrator, Base Land Mobile Radio Manager, Command Control Switch Maintenance personnel, and first-enlistment personnel performing a few minor tasks associated with the Digital Switching Systems Maintenance cluster.

Group Descriptions

The succeeding paragraphs contain descriptions of the clusters and jobs. Representative tasks for each of the identified clusters and jobs are contained in Appendix A.

I. DIGITAL SWITCHING SYSTEMS MAINTENANCE CLUSTER (ST57). Digital Switching Systems Maintenance is the core work of the career ladder. Most of the work involved in the cluster is technical in nature. Much of the job involves general maintenance and corrosion control tasks, maintaining digital line and trunk interface equipment, and supply functions. This includes isolating malfunctions to various systems and performing preventative maintenance inspections. The cluster encompasses an average of 117 tasks, a substantially higher number than that of other jobs in the career ladder. Two clearly identifiable jobs were found within this cluster.

A. Digital Switch Maintenance Job (ST98). Members of this job spend the largest portion of their time on the maintenance of the digital switch. This is a very broad job, with incumbents reporting an average of 140 tasks performed. General maintenance, maintenance of special circuits and ancillary equipment, customer service tasks, and the isolation of malfunctions to various input/output devices are core functions of this job and account for 48 percent of their job time. Typical tasks include:

accessing lines and trunks from maintenance positions
isolating malfunctions to duress or intrusion alarm circuits
inspecting batteries for corrosion
programming features
wrapping or unwrapping terminals
isolating malfunctions to dial lines
removing or replacing jumpers
coordinating telephone installation activities with inside or outside plants
removing or replacing circuit cards or electrical card assemblies
restoring permanent lock-outs
coordinating troubleshooting with outside agencies

Digital Switch Maintenance personnel average 8 years of service, 35 percent are in their first enlistment, and most hold the 5-skill level. The predominant paygrade is E-4, with 89 percent in paygrades E-3 through E-5.

B. Cable Engineer Job (ST113). Twelve respondents performed the Cable Engineer job. Cable Engineers performed a relatively large number of common tasks (106). This job was distinguished by the time incumbents spend on tasks relating to removing, replacing, marking, mounting, testing, and drilling holes for the installation of cables. In addition to the cable installation and maintenance tasks, this job involves many general maintenance functions. Forty-four percent of the duty time of the members of this job is spent performing general maintenance tasks and E & I tasks. Examples of cable maintenance and installation tasks performed by members of this job include:

forming cables
fanning cables
marking, cutting, stripping, and butting cables
running cables
isolating malfunctions to cables
removing or replacing twisted pair cables
terminating cables with punch-on devices
updating telephone system cable records

Respondents holding this job are of the 3- and 5-skill level. Seventeen percent of the incumbents were in their first enlistment. The average time in service for the job was 7 years and 6 months, with the predominant paygrade being E-5.

II. ELECTROMECHANICAL SWITCHING SYSTEMS MAINTENANCE JOB (ST70). The Electromechanical Switching job is rapidly disappearing as electromechanical devices are being phased out of use in Air Force telephone systems. The 15 members of this job represent only 3 percent of the overall sample. This job involves a few of the same technical tasks that existed in the Digital Switching Systems Maintenance cluster; however, much of the job involves adjusting or aligning electrical and mechanical switches, relays and contacts, and other general maintenance functions for electromechanical telephone switches. Typical tasks for this job include:

adjusting or aligning relay contacts
adjusting or aligning electrical switches
performing PMIs on mechanical switches
adjusting or aligning wiper contacts
assembling or disassembling mechanical switches
isolating malfunctions to central office switch boards
performing PMIs on step-by-step switching equipment
adjusting or aligning mechanical relays
tracing calls using trunking schematics or bay cards
isolating malfunctions within step-by-step switching equipment
adjusting or aligning mechanical switches

Members of this job average 8 years of active duty service, and 67 percent hold the 5-skill level. Thirteen percent of the incumbents are located overseas. Only one of the incumbents in this job is in their first enlistment. The predominant paygrade for the group is E-4.

III. ENGINEERING AND INSTALLATION TEAM JOB (ST72). Incumbents performing the E & I Team job spend about 57 percent of their job time on tasks related to installing new telephone switching systems and making modifications to existing systems. Members of the E & I Team spend much of their time performing initial installations of cable runs, jumpers, and under floor conduit systems. The average number of tasks performed in this job is 46. The 24 respondents making up this job represent 5 percent of the total sample. Some typical tasks include:

marking, cutting, stripping, and butting cables
forming cables
fanning cables
performing initial installation of cable runs
running cables
performing initial installation of jumpers
performing cable operational tests
terminating cables with punch-on devices
performing initial installations of cables under floor conduit systems
interpreting blueprints
drilling holes for mounting cable runs

Members in this job have an average of 9 years of service. Only one of the incumbents is in their first enlistment. Ninety-two percent are assigned to CONUS. Most of these incumbents (79 percent) are in paygrades E-4 and E-5. There is an even division of 5- and 7-skill level personnel.

IV. JOB CONTROL JOB (ST67). The Job Control job represents less than 1 percent of the sample. Respondents spent most of their time performing maintenance coordination tasks and little time on technical tasks. The average number of tasks performed is only 10. Eighty-two percent of their relative job time is spent performing Job Control, organizational, and administrative tasks, such as:

assigning job control numbers
coordinating trouble shooting with outside agencies
preparing briefings
coordinating jobs, outages, or maintenance with job control
annotating work orders
determining work priorities
directing maintenance of equipment and supplies
coordinating leased equipment malfunctions with commercial telephone companies
reviewing telephone work order logs

Two of these four respondents are located overseas. All four are 5-skill level personnel, and all four are in paygrade E-4. They average 5 1/2 years of service, and two are in their first enlistment.

V. COMMERCIAL LIAISONS JOB (ST26). The 12 respondents in the Commercial Liaisons job represent 3 percent of the total sample. The job is almost exclusively dealing with outside agencies regarding maintenance and installation of telephone systems. The incumbents performed an average of 24 tasks. Although members of this job report spending 56 percent of their job time performing administrative and job control tasks, this job differs from the Job Control job in the amount of time spent dealing with commercial agencies (over 28 percent of the relative job time). The typical tasks include:

coordinating telephone installations with base units or commercial telephone companies
coordinating leased equipment malfunctions with commercial telephone companies
logging requirements for telephone installations
coordinating circuit of trunk outages with commercial telephone companies
coordinating troubleshooting with outside agencies

Most of the members of this job are 5-skill level personnel, and there are no incumbents in their first enlistment. The average time in service was 11 years. The predominant paygrade is E-5.

VI. QUALITY CONTROL/QUALITY ASSURANCE CLUSTER (GP42). The 13 members of this cluster of jobs perform an average of 32 tasks. Very few of the tasks being performed are technical in nature. Training, establishing and analyzing work methods, and administrative tasks are the primary functions of this cluster. Thirty-nine percent of the incumbents' relative job time is spent training, inspecting, and evaluating personnel or procedures. An additional 20 percent of the job time is spent planning work controls, briefings, and other organizational duties. Some typical tasks are:

writing staff studies or special reports
interpreting policies, directives, or procedures for personnel
writing EPRs
evaluating individual training needs
evaluating inspection report findings
performing test analyses

evaluating personnel for promotion, demotion, or reclassification
evaluating personnel for compliance with safety standards
analyzing workload requirements
establishing work methods
establishing work controls
inspect station grounds for corrosion
inspect bus bars for corrosion
inspect frames for corrosion

Overall, the group has an average of almost 12 years of service. The predominant paygrade is E-7, and 62 percent of the group hold the 7-skill level.

Two jobs were identified within this cluster, the Corrosion Control Inspectors job and the Quality Control Inspectors job.

The Corrosion Control Inspectors job is a small group of inspectors spending 20 percent of their time performing corrosion control inspections on power frames. Members of the Corrosion Control Inspectors job performed an average of 49 tasks.

The Quality Control Inspectors job was a group of inspectors spending 50 percent of their relative job time evaluating personnel and workcenters for compliance with standards. An average of 25 tasks are being performed by the members of this job.

VII. RESIDENT TRAINING INSTRUCTORS JOB (ST175). This highly homogeneous group of incumbents are all located at Sheppard AFB, at the Training Wing. The four members of this job spend 85 percent of their relative job time performing training duties. This job involves no technical tasks and virtually no supervisory functions. Conducting classroom training, the administration and scoring of tests, and the preparation of lesson plans are the primary functions being performed in this job. On average, they perform only 11 tasks; these tasks include:

conducting resident course classroom training
conducting skill-performance tests
scoring tests
preparing lesson plans
administering tests
constructing training aids
procuring training aids, space, or equipment
performing test analyses
writing test questions
evaluating progress of residence course students

The Resident Training Instructors have an average time in service of 9 years. There are two E-5s and three 7-skill level personnel.

VIII. SUPERVISORY/MANAGEMENT CLUSTER (ST51). This cluster of jobs represents the work performed by the majority of senior personnel. These 80 respondents perform an average of 81 tasks, including both administrative and supervisory functions. Most of the inside plant management functions, such as performing evaluations, setting work priorities, establishing work controls, conducting OJT, and delegating additional duties, are managed by these incumbents. The incumbents come from almost every location, with almost 50 percent located overseas. Two jobs were identified within this cluster: the NCOIC and Wire Branch Chiefs jobs.

A. NCOIC Job (ST116). NCOIC is the core job within the Supervisory/ Management cluster. An average of 94 tasks are performed by the members of this job. These tasks primarily deal with conducting OJT, coordination of work and inspections, evaluating personnel and training needs, and directing maintenance activities of inside plant maintenance personnel. This job is differentiated from the Wire Branch Chiefs job primarily by the training functions performed by NCOIC personnel. Typical tasks for the NCOIC job include:

counseling personnel on personal or military-related matters
determining work priorities
planning details or additional duties
planning work assignments
evaluating individual training needs
interpreting policies, directives, or procedures for personnel
annotating OJT records
conducting OJT
evaluating progress of OJT trainers or trainees
evaluating inspection report findings or procedures
performing self-inspections

The average time in service for the incumbents was 14 years, 2 months. The majority of the cluster (75 percent) hold the 7-skill level or higher, and the predominant paygrades are E-6 and E-7. Also of interest, 92 percent of the cluster supervised one or more persons.

B. Wire Branch Chiefs Job (ST94). The members of the Wire Branch Chiefs job perform considerably fewer tasks than the NCOIC job, averaging only 29 tasks. Most of these tasks deal with the supervision and management of personnel. Members of this job spend more than twice as much of their job time supervising personnel from specialties other than telephone switching. Similarly, none of the tasks performed in this job are specific to the career field. Some

additional functions of this job involve the implementation of safety, security, quality control and disaster preparedness programs, and the preparation for and conducting of briefings. Some typical tasks are:

supervising military personnel with AFSCs other than 362X1
writing EPRs
reviewing or endorsing EPRs
conducting meetings, such as staff, council, board
counseling personnel on military-related matters
interpreting policies, directives, or procedures for personnel
implement security training programs
implement QC or QA programs
supervising Telephone Switching Specialists (AFSC 36251)

The incumbents of this job average over 18 years of military service, more than any other job in the career field. The predominant paygrade is E-7, and all of the incumbents are 7- or 9-skill level personnel. Also of interest, the members of the Wire Branch Chiefs job have an average of 16 1/2 years in the career field.

IX. FUNCTIONAL MANAGERS CLUSTER (ST31). The 18 members of this cluster amounted to 4 percent of the overall sample. Much of their time is spent on administrative functions. These primarily senior-level incumbents performed an average of only 15 tasks. Preparing tables, graphs, and diagrams for various meetings, writing special reports, and other administrative staff functions are the core work of the cluster. One-third of the 18 members were stationed overseas. Some typical tasks of the incumbents are:

conducting meetings, such as staff, council, board
reviewing correspondence
writing staff studies or special reports
developing tables, graphs, or diagrams, other than organizational charts or status boards
preparing briefings
assigning due dates

This group is composed of primarily E-7s. Seventy-eight percent hold the 7-skill level or higher, and 17 percent of the remaining persons hold a primary AFSC other than 362X1. The Total Active Federal Military Service (TAFMS) for this job is 17 years.

Although several variations exist within this cluster, most are small and encompassed preparing for and conducting briefings and related staff functions.

COMPARISON OF CURRENT JOB STRUCTURE TO PREVIOUS STUDY

The current job structure was compared with the previous OSR (AFPT 90-362-797, March 1990). Table 5 lists the major jobs reported in the current study and their equivalents in the previous study. A review of the table reveals there has been a shift from electromechanical to digital switching systems maintenance. This change is indicative of the technological changeover from electromechanical to digital equipment. A review of the table also highlights the decline in the number of E & I team members. This decrease is attributed to the increase in civilian contracting of the duties of that job. This decrease has since included Griffiss AFB, which switched over to contract effective September 1992. Lastly, there has been an increase in the number of supervisory and administrative jobs since the last study.

ANALYSIS OF DAFSC GROUPS

An analysis of DAFSC groups, along with the career ladder structure, is an integral part of an OSR. The DAFSC analysis examines the differences in tasks performed by persons of different skill levels. This information can be used to evaluate how well career ladder documents, AFR 39-1 Specialty Descriptions and the STS, reflect what is being done in the field. Table 6 displays the distribution of DAFSCs over career ladder jobs, and Table 7 shows the percent time spent on each duty across skill-level groups.

A typical pattern of progression exists within the AFSC 362X1 career ladder. Personnel at the lowest skill level tended to spend more time performing technical tasks. As experience and skill level increase, personnel begin doing more administrative tasks, but continue to perform many technical tasks. Senior personnel tend to perform almost exclusively administrative and managerial tasks.

Skill-Level Descriptions

DAFSC 36231. The 45 airmen in the 3-skill level group represent 10 percent of the total sample. Performing an average of 71 tasks, the 3-skill level personnel spend 55 percent of their relative job time on technical tasks. These tasks involve general maintenance of switches and input/output devices and isolating malfunctions to system components. As shown in Table 6, 71 percent of the 3-skill level personnel are working in the Digital Switching Systems Maintenance cluster.

TABLE 5

JOB SPECIALTY COMPARISONS BETWEEN CURRENT AND 1990 SURVEYS

CURRENT SURVEY (N=447) AFSC 362X1	PERCENT OF SAMPLE	1990 SURVEY (N=628) AFSC 362X1	PERCENT OF SAMPLE
DIGITAL SWITCHING SYSTEMS MAINTENANCE CLUSTER	47	DIGITAL SWITCHING IJT	-
ELECTROMECHANICAL SWITCHING SYSTEMS MAINTENANCE JOB	4	GENERAL MAINTENANCE CLUSTER	62
ENGINEERING AND INSTALLATION TEAM JOB	5	ENGINEERING AND INSTALLATION CLUSTER	13
JOB CONTROL JOB	-	JOB CONTROL CLUSTER	-
COMMERCIAL LIAISONS JOB	3	IDENTIFIED AS PART OF JOB CONTROL CLUSTER	
QUALITY CONTROL/QUALITY ASSURANCE CLUSTER	3	IDENTIFIED AS PART OF SUPERVISORY AND ADMINISTRATION CLUSTER	
RESIDENT TRAINING INSTRUCTORS JOB	-	TRAINING IJT	-
SUPERVISORY/MANAGEMENT CLUSTER	18	SUPERVISORY AND ADMINISTRATION CLUSTER	11
FUNCTIONAL MANAGERS CLUSTER	4	IDENTIFIED AS PART OF SUPERVISORY AND ADMINISTRATION CLUSTER	

- Denotes less than 1 percent

TABLE 6

DISTRIBUTION OF SKILL-LEVEL PERSONNEL
ACROSS CAREER LADDER JOBS

JOBS	DAFSC 36231 (N=45)	DAFSC 36251 (N=236)	DAFSC 36271 (N=166)
DIGITAL SWITCHING SYSTEMS MAINTENANCE CLUSTER	69%	55%	28%
ELECTROMECHANICAL SWITCHING SYSTEMS MAINTENANCE JOB	4%	5%	4%
ENGINEERING AND INSTALLATION TEAM JOB	2%	7%	4%
JOB CONTROL JOB	0%	1%	0%
COMMERCIAL LIAISONS JOB	0%	3%	2%
QUALITY CONTROL/QUALITY ASSURANCE CLUSTER	2%	2%	4%
RESIDENT TRAINING INSTRUCTORS JOB	0%	1%	-
SUPERVISORY/MANAGEMENT CLUSTER	0%	8%	36%
FUNCTIONAL MANAGERS CLUSTER	0%	1%	9%
NOT GROUPED	23%	15%	13%

- Denotes less than 1 percent

TABLE 7

RELATIVE PERCENT TIME SPENT PERFORMING DUTIES
BY DAFSC GROUPS

DUTIES		36231 (N=45)	36251 (N=236)	36271 (N=166)
A	ORGANIZING AND PLANNING	4	9	19
B	DIRECTING AND IMPLEMENTING	-	4	11
C	INSPECTING AND EVALUATING	-	5	14
D	TRAINING	1	7	9
E	PERFORMING ADMINISTRATIVE AND SUPPLY TASKS	7	9	9
F	PERFORMING DIAL SERVICES ADMINISTRATOR TASKS	2	3	3
G	PERFORMING JOB CONTROL TASKS	6	7	5
H	MAINTAINING SPECIAL CIRCUITS AND ANTICILLARY EQUIPMENT ON DIGITAL SWITCHED SYSTEMS	19	11	6
I	PERFORMING CUSTOMER SERVICE TASKS	15	9	4
J	MAINTAINING DIGITAL SWITCHING CENTRAL CONTROL SYSTEMS	4	2	2
K	MAINTAINING DIGITAL SWITCHING NETWORKS	2	2	1
L	MAINTAINING DIGITAL SWITCHING LINE AND TRUNK INTERFACE EQUIPMENT	7	5	3
M	MAINTAINING DIGITAL SWITCHING INPUT/OUTPUT EQUIPMENT	6	4	2
N	PERFORMING ENGINEERING AND INSTALLATION TASKS	4	7	5
O	MAINTAINING ELECTROMECHANICAL TELEPHONE SWITCHING SYSTEMS	4	3	1
P	PERFORMING GENERAL MAINTENANCE AND CORROSION	18	12	6

- Denotes less than 1 percent

Table 8 displays representative tasks performed by 3-skill level personnel. These tasks reflect the technical nature of the work 3-levels perform. The tasks being performed by 3-skill level personnel are quite similar to that of 5-skill level personnel.

DAFSC 36251. This group of 236 members (53 percent of the total sample) perform an average of 80 tasks. Five-skill level personnel perform a substantial number of technical tasks, but are distinguished by the increased emphasis on administrative functions, as compared to the 3-skill level members. Table 10 outlines the extreme difference in percent members performing administrative functions between 3- and 5-skill level personnel. Table 9 shows the representative tasks of the group. Fifty-five percent of their relative job time is spent performing 97 tasks. Table 6 shows 55 percent of this group within the Digital Switching Systems Maintenance cluster, with an additional 9 percent falling within the Supervisory/Management cluster. Forty-one percent of the group report having supervisory responsibilities.

DAFSC 36271. Seven-skill level personnel, representing 37 percent of the sample, perform an average of 83 tasks. The members of this group perform a substantial number of supervisory and managerial tasks. These tasks primarily deal with the supervision, training, and evaluation of personnel and the determination and coordination of work priorities and equipment maintenance. A review of Table 6 shows a large part (36 percent) of this group are in the Supervisory/ Management cluster. Another 28 percent fall in the Digital Switching Systems Maintenance cluster. Almost half of all 7-skill level personnel are in one of the managerial job clusters. Table 11 shows the representative tasks of the personnel in this group. As noted, the tasks are mostly administrative or managerial in nature. Sixty-nine percent of the group report having supervisory responsibilities. These 166 respondents spend 55 percent of their relative job time performing 80 tasks. Unlike the 3- and 5-skill level personnel, the typical 7-skill level respondent spends very little time performing technical functions. The most commonly performed task of both 3- and 5-skill level personnel (wrapping and unwrapping terminals) is one that is performed by few 7-skill level personnel (see Table 12). This task is very much indicative of the decrease in technical performance seen among 7-skill level personnel.

Summary

Personnel in AFSC 362X1 progress typically through the career ladder. The 3-skill level personnel spend the majority of their time performing technical tasks. Five-skill level personnel perform technical tasks, along with increased numbers of administrative and supervisory tasks. Seven-skill level personnel perform almost exclusively administrative and managerial tasks, with very few technical tasks.

TABLE 8

REPRESENTATIVE TASKS PERFORMED BY
3-SKILL LEVEL PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=45)
P465	Wrap or unwrap terminals	91
P460	Remove or replace jumpers	82
I236	Isolate malfunctions to direct lines	75
H194	Measure capacitance levels	73
P451	Isolate malfunctions to jumpers	71
I235	Isolate malfunctions to dial lines	68
H210	Remove or replace circuit cards or electrical card assemblies	67
H195	Measure voltage levels	67
I245	Isolate malfunctions to single-line telephones	67
P463	Solder or desolder terminals	67
L276	Access line and trunks from maintenance positions (MAPs)	64
H199	Perform busy out procedures	64
H201	Perform PMIs on air filters	64
P439	Inspect batteries for corrosion	62
H211	Remove or replace fuses	60
N353	Perform initial installations of jumpers	55
I239	Isolate malfunctions to fire alarm circuits	55
G167	Coordinate troubleshooting with outside agencies	55
I234	Isolate malfunctions to data circuits printers, and drives	55
H200	Perform loop resistance or insulation tests	53
J260	Take software images or database backups	53
I237	Isolate malfunctions to duress or intrusion alarm circuits	51
M314	Perform PMIs on input/output (I/O) devices, such as VDUs, printers, and drives	51
I248	Trace calls using visual display units (VDUs)	51
P442	Inspect frames for corrosion	51
M307	Isolate malfunctions to attendant consoles	51
E143	Update telephone system cable records	49
G162	Assign job control numbers	49
P464	Terminate cables with punch-on devices	49
G165	Coordinate telephone installation activities with inside or outside plants	49
H226	Service batteries	49
A6	Coordinate jobs, outages, or maintenance with job control	49
M309	Isolate malfunctions to input/output controllers (IOCs)	49

TABLE 9

REPRESENTATIVE TASKS PERFORMED BY
5-SKILL LEVEL PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=236)
P465	Wrap or unwrap terminals	68
P460	Remove or replace jumpers	63
A6	Coordinate jobs, outages or maintenance with job control	61
I235	Isolate malfunctions to dial lines	60
I245	Isolate malfunctions to single-line telephones	58
I236	Isolate malfunctions to direct lines	56
P451	Isolate malfunctions to jumpers	53
G167	Coordinating troubleshooting with outside agencies	52
H211	Remove or replace fuses	52
H210	Remove or replace circuit cards or electrical card assemblies	52
I237	Isolate malfunctions to duress or intrusion alarm circuits	51
I241	Isolate malfunctions to inside wiring	49
H195	Measure voltage levels	49
I248	Trace calls using visual display units (VDUs)	48
P464	Terminate cables with punch-on devices	48
I243	Isolate malfunctions to multiline telephones	48
G170	Program features	48
G165	Coordinate telephone installation activities with inside or outside plant	47
M307	Isolate malfunctions to attendant consoles	47
D79	Annotate on-the-job training records	47
G162	Assign job control numbers	47
I234	Isolate malfunctions to data circuits	45
P463	Solder or desolder terminals	45
J260	Take software images or database backups	45
H201	Perform PMIs on air filters	44
A13	Determine work priorities	44
G163	Coordinate circuit or trunk outages with commercial telephone companies	44
P442	Inspect frames for corrosion	43
I239	Isolate malfunctions to fire alarm circuits	43

TABLE 10

REPRESENTATIVE TASK DIFFERENCES BETWEEN 3-SKILL LEVEL AND 5-SKILL LEVEL PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS		DAFSC 36231 (N=45)	DAFSC 36251 (N=236)	DIFFERENCE
H194	Measure capacitance levels	73	39	34
H199	Perform busy-out procedures	64	39	25
P465	Wrap or unwrap terminals	91	68	23
L276	Access lines and trunks from maintenance positions	64	42	22
L301	Remove or replace cards in remote line modules	38	16	22
P463	Solder or desolder terminals	67	45	22
H201	Perform PMIs on air filters	64	44	20
D79	Annotate on-the-job training records	4	46	-42
C77	Write EPRs	2	37	-35
C50	Counsel personnel on military related matters	0	33	-33
C55	Counsel personnel for compliance with safety standards	0	31	-31
C54	Evaluate personnel for compliance with performance	0	31	-31
D86	Counsel trainers or trainees on training progress	0	30	-30

TABLE 11

REPRESENTATIVE TASKS PERFORMED BY
7-SKILL LEVEL PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=166)
C77	Write EPRs	67
A13	Determine work priorities	64
C68	Review correspondence	61
C50	Counsel personnel on personal or military-related matters	60
A9	Determine equipment or supply requirements	58
C54	Evaluate personnel for compliance with performance standards	56
D81	Conduct OJT	56
D79	Annotate on-the-job training (OJT) records	56
A6	Coordinate jobs, outages, or maintenance with job control	56
D91	Evaluate individual training needs	54
B41	Interpret policies, directives , or procedures for personnel	53
A23	Prepare briefings	52
C55	Evaluate personnel for compliance with safety standards	52
B29	Assign due dates	51
A25	Schedule leaves or temporary duty (TDY) assignments	51
A20	Plan details or additional duties	51
C65	Perform self inspections	51
D87	Determine training requirements	50
A19	Establish work methods	50
A12	Determine telephone maintenance requirements	49
A3	Conduct meetings such as staff, council, board	48
A5	Coordinate installation of equipment with contract personnel or associated system personnel	48
A22	Plan work assignments	48
B46	Supervise Telephone Switching Specialists (AFSC 36251)	47
C51	Evaluate individuals for promotion, demotion, or reclassification	47
A18	Establish work controls	47
A17	Establish performance standards for personnel	47
D86	Counsel trainers or trainees on training progress	46
A8	Coordinate quality control (QC) or quality assurance (QA) inspections with inspectors	46

TABLE 12

REPRESENTATIVE TASK DIFFERENCES BETWEEN 5- AND 7-SKILL LEVEL PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS		DAFSC 36251 (N=236)	DAFSC 36271 (N=166)	DIFFERENCE
P460	Remove or replace jumpers	63	37	26
P465	Wrap or unwrap terminals	68	42	26
I237	Isolate malfunctions to duress or intrusion alarm circuits	50	25	25
I245	Isolate malfunctions to single-lines telephones	58	33	25
I235	Isolate malfunctions to dial lines	60	37	23
N353	Perform initial installation of jumpers	37	14	23
I239	Isolate malfunctions to fire alarm circuits	43	20	23
C68	Review correspondence	16	61	-45
A25	Schedule leaves or temporary duty (TDY) assignments	10	51	-41
B29	Assign due dates	14	51	-37
A3	Conduct meetings, such as staff, council, or board	13	48	-35
B41	Interpret policies, directives, or procedures for personnel	19	53	-34
A23	Prepare briefings	18	52	-34
C52	Evaluate inspection report findings or procedures	14	46	-31

ANALYSIS OF AFR 39-1 SPECIALTY DESCRIPTIONS

Survey data were compared to the AFR 39-1 Specialty Descriptions for Telephone Switching Specialists (AFSCs 36211/36231/36251) and Telephone Switching Technician (AFSC 36271) dated 15 March 1991, effective 30 April 1991. The descriptions of the 3-, 5-, and 7-skill levels were well supported by the data. The descriptions accurately depict the highly technical aspects of the job, as well as the administrative duties performed by 5-level personnel. The descriptions also outline the increase in supervisory responsibilities for 7-skill level personnel. The descriptions generally capture the responsibilities of the job groups identified in the career ladder structure as well.

Effective 31 October 1993, AFSC 362X1 will become AFSC 2E7X1. In addition, 3-, 5-, and 7-skill level job titles will change to Telephone Switching Apprentice, Telephone Switching Journeymen, and Telephone Switching Craftsmen, respectively.

TRAINING ANALYSIS

Occupational surveys provide a source of information that can be very useful in the development of training programs. Through the use of OSR data, one can more accurately determine what first-enlistment personnel are doing as a group and subsequently develop or refine training programs to be more suitable to their needs. Factors used in evaluating training include the overall description of jobs performed by first-enlistment personnel, the distribution of first-enlistment personnel (1-48 months' TAFMS) among career ladder jobs, percentages of first-enlistment and first-job (1-24 months' TAFMS) personnel using certain equipment, and TE and TD ratings (previously explained in the SURVEY METHODOLOGY section).

First-Enlistment Personnel

In AFSC 362X1, there were 79 airmen in their first enlistment. They represented 18 percent of the total sample. Figure 2 shows the distribution of first-enlistment personnel in the jobs identified in the career ladder structure analysis. Sixty-eight percent of those in their first enlistment are working within the Digital Switching Systems Maintenance cluster. Because of the large amounts of training taking place among first-enlistment personnel, almost one-fourth of them were not grouped with any of the identified career ladder jobs. The remainder of the first-enlistment personnel are scattered within other career ladder jobs.

First-enlistment personnel perform mostly technical tasks involving the isolation of malfunctions to components such as jumpers, multiline telephones, direct lines, and dial lines. They also perform various kinds of jumper maintenance, including measuring voltage levels, removal and replacement, and measuring capacitance levels. As shown in Table 13, 57 percent of

AFSC 362X1
FIRST ENLISTMENT
JOB STRUCTURE

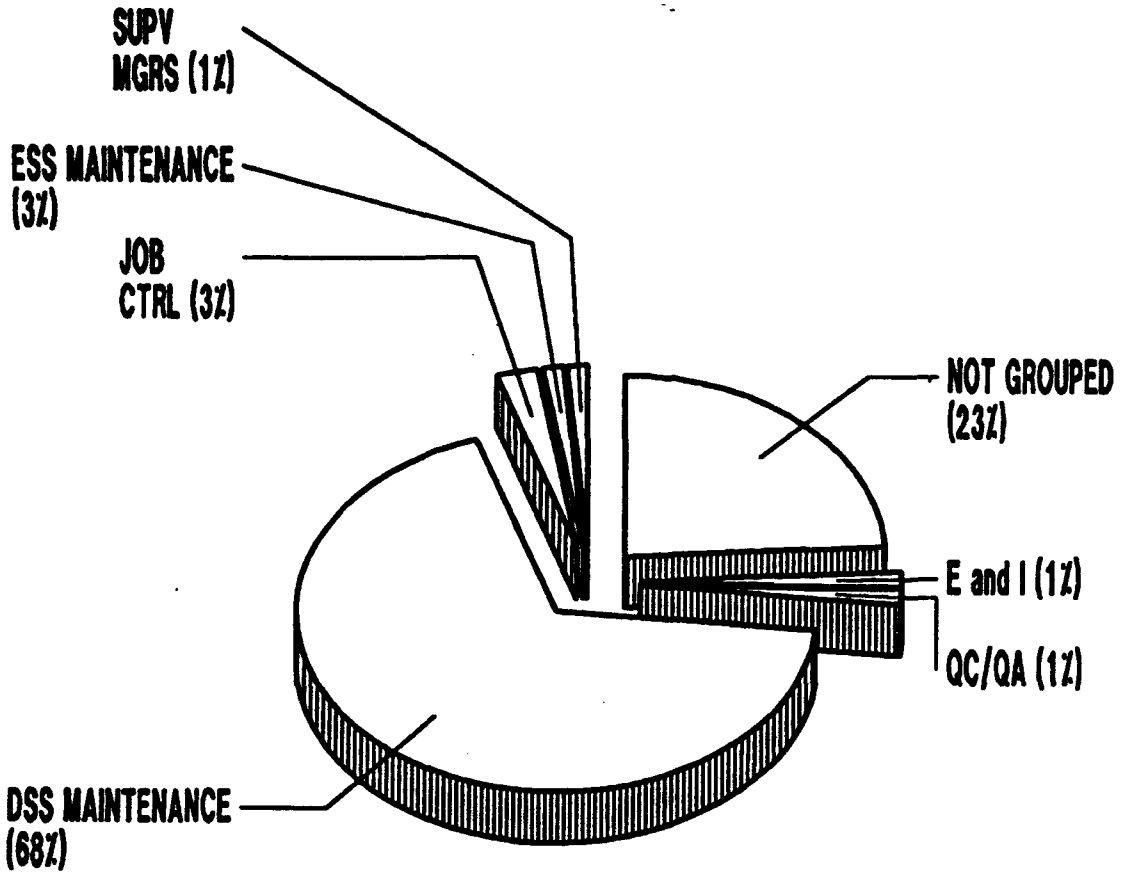

FIGURE 2

TABLE 13

RELATIVE TIME SPENT ON DUTIES BY
FIRST-ENLISTMENT PERSONNEL
(N=79)

DUTIES		PERCENT TIME SPENT
A	ORGANIZING AND PLANNING	5
B	DIRECTING AND IMPLEMENTING	2
C	INSPECTING AND EVALUATING	1
D	TRAINING	1
E	PERFORMING ADMINISTRATIVE OR SUPPLY TASKS	8
F	PERFORMING DIAL SERVICES ADMINISTRATOR TASKS	3
G	PERFORMING JOB CONTROL TASKS	7
H	MAINTAINING SPECIAL CIRCUITS AND ANTICILLARY EQUIPMENT ON DIGITAL SWITCHED SYSTEMS	18
I	PERFORMING CUSTOMER SERVICE TASKS	15
J	MAINTAINING DIGITAL SWITCHING CENTRAL CONTROL SYSTEMS	4
K	MAINTAINING DIGITAL SWITCHING NETWORKS	2
L	MAINTAINING DIGITAL SWITCHING LINE AND TRUNK INTERFACE EQUIPMENT	6
M	MAINTAINING DIGITAL SWITCHING INPUT/OUTPUT EQUIPMENT	5
N	PERFORMING ENGINEERING AND INSTALLATION TASKS	4
O	MAINTAINING ELECTROMECHANICAL TELEPHONE SWITCHING SYSTEMS	2
P	PERFORMING GENERAL MAINTENANCE AND CORROSION CONTROL TASKS	16

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

their relative job time is spent performing technical duties. Table 14 shows some of the tasks being performed by first-enlistment personnel.

TE and TD Data

TE and TD data are secondary factors that can assist technical school personnel in deciding what tasks should be emphasized in entry-level training. These ratings, based on the judgment of senior Telephone Switching NCOs working at operational units in the field, were collected to provide training personnel with a rank ordering of tasks considered important for formal training (TE), along with a measure of the difficulty of those tasks (TD). These data, when combined with percent of first-enlistment personnel performing tasks, can be used to determine if training adjustments are necessary.

To assist training development personnel, USAFOMS developed a computer program that uses these task factors and the percentage of first-enlistment personnel performing tasks to produce Automated Training Indicators (ATI). ATI correspond to training decisions listed and defined in the Training Decision Logic Table found in Attachment 1, ATCR 52-22. ATI allows training developers to quickly focus attention on those tasks which are most likely to qualify for ABR course consideration.

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

Table 15 lists the tasks rated highest in TE. Included for each task are the percentage of first-job and first-enlistment personnel performing and the TD rating. Most of these tasks are technical tasks relating to the isolation of malfunctions to central control systems on digital switches and the removal and replacement of circuit cards.

Tasks having the highest TD ratings are listed in Table 16. The tasks of most concern for training are those with over 20 percent of the first-enlistment personnel performing. These are basically technical tasks involved with the isolation of malfunctions to parts of digital switches. Many of the tasks listed have low percent members performing, and several of the tasks have low TE.

TABLE 14

REPRESENTATIVE TASKS PERFORMED BY FIRST-ENLISTMENT PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=79)
P465	Wrap or unwrap terminals	82
P460	Remove or replace jumpers	78
I236	Isolate malfunctions to direct lines	73
P451	Isolate malfunctions to jumpers	68
I245	Isolate malfunctions to single line telephones	67
H195	Measure voltage levels	65
H194	Measure capacitance levels	65
H210	Remove or replace circuit cards or electrical card assemblies	65
I235	Isolate malfunctions to dial lines	63
H201	Perform PMIs on air filters	62
H199	Perform busy-out procedures	61
L276	Access lines and trunks from maintenance positions (MAPs)	58
I239	Isolate malfunctions to fire alarm circuits	58
P439	Inspect batteries for corrosion	58
H211	Remove or replace fuses	58
G167	Coordinate troubleshooting with outside agencies	57
I237	Isolate malfunctions to duress or intrusion alarm circuits	56
J260	Take software images or database backups	55
P463	Solder or desolder terminals	55
G162	Assign job control numbers	54
I234	Isolate malfunctions to data circuits	54
H200	Perform loop resistance or insulation tests	54
I248	Trace calls using visual display units (VDUs)	53
A6	Coordinate jobs, outages, or maintenance with job control	52
G165	Coordinate telephone installation activities with inside or outside plants	52
I243	Isolate malfunctions to multiline telephones	51
H226	Service batteries	51

TABLE 15

TASKS RATED HIGHEST IN TE

TASKS		PERCENT MEMBERS PERFORMING			
		TNG EMP*	1ST JOB (N=24)	1ST ENL (N=79)	TASK DIFF**
J258	Remove or replace cards in CPUs	5.83	46	42	5.52
H210	Remove or replace circuit cards or electrical card assemblies	5.83	63	65	4.44
J259	Remove or replace circuit cards	5.78	46	46	5.54
J254	Isolate malfunctions to central processing units (CPUs)	5.71	38	43	6.75
J253	Isolate malfunctions to central message controllers	5.68	42	39	6.55
J255	Isolate malfunctions to links	5.68	38	39	6.91
L276	Access lines and trunks from maintenance positions (MAPs)	5.68	58	58	4.26
H184	Interpret drawings, diagrams, or schematics	5.61	21	27	6.35
H206	Perform transmission level tests	5.61	29	33	5.20
I241	Isolate malfunctions to inside wiring	5.59	33	49	5.14
M309	Isolate malfunctions to input/output controllers (IOCs)	5.56	46	43	6.16
I235	Isolate malfunctions to dial lines	5.56	63	63	4.93
I247	Trace calls using log reports	5.56	38	42	5.08
H226	Service batteries	5.56	54	51	4.12
M307	Isolate malfunctions to attendant consoles	5.54	50	48	5.80

* TE Mean =2.80 S.D. = 1.53

** TD Mean = 5.00 S.D. = 1.00

TABLE 15 (CONTINUED)

TASKS RATED HIGHEST IN TE

TASKS		TNG EMP*	PERCENT MEMBERS PERFORMING 1ST JOB (N=24)	1ST ENL (N=79)	TASK DIFF**
H197	Mount system tapes	5.49	25	41	4.46
H182	Check diagnostic failure using trouble locating procedures	5.46	46	46	6.01
J257	Remove or replace cards in central message controllers	5.46	46	43	5.70
P465	Wrap or unwrap terminals	5.46	88	82	3.14
H211	Remove or replace fuses	5.46	50	58	3.17
P460	Remove or replace jumpers	5.44	75	78	3.25
J256	Isolate malfunctions to memory cards	5.39	46	43	6.73
I248	Trace calls using visual display units	5.39	50	53	4.60
M310	Isolate malfunctions to magnetic tape drive units	5.39	46	43	6.06
I236	Isolate malfunctions to direct lines	5.37	71	73	4.87
H201	Perform PMIs on air filters	5.34	63	62	2.69

* TE Mean =2.80 S.D. = 1.53

** TD Mean = 5.00 S.D. = 1.00

TABLE 16

TASKS RATED HIGHEST IN TD

TASKS		TASK DIF*	PERCENT MEMBERS PERFORMING 1-48 TAFMS (N=79)	5 LEVEL (N=236)	7 LEVEL (N=166)	TNG EMP**
D89	Develop resident course curriculum materials, plans of instruction (POIs) or specialty training standards (STSs)	7.40	1	4	6	.54
D90	Develop training programs	7.19	3	19	36	1.05
H189	Isolate malfunctions to integrated systems digital networks	7.01	9	11	8	4.02
B48	Write staff studies or special reports	6.98	1	10	37	.54
F156	Load transmission data	6.97	14	20	22	3.54
K265	Isolate malfunctions to network junctors	6.93	29	26	20	5.10
K264	Isolate malfunctions to network cross points	6.93	27	23	20	5.00
K266	Isolate malfunctions to network links	6.93	37	31	23	5.22
J255	Isolate malfunctions to links	6.91	39	33	26	5.68
H187	Isolate malfunctions to the central message buffer of the KNS4100	6.88	10	6	6	4.07
O397	Perform initial installations of automatic equipment routines	6.86	13	10	10	4.22
L286	Isolate malfunctions to or on fiber optic multiplexers	6.81	8	1	1	1.07

* TD Mean = 5.00 S.D. = 1.00

** TE Mean = 2.80 S.D. = =1.53

TABLE 16 (CONTINUED)

TASKS RATED HIGHEST IN TD

TASKS		TASK DIF*	PERCENT MEMBERS PERFORMING 1-48 TAFMS (N=79)	5 LEVEL (N=236)	7 LEVEL (N=166)	TNG EMP**
L287	Isolate malfunctions to or on optic T-carriers	6.77	6	9	7	4.00
H223	Review batched change supplements (BCSs) or software updates	6.75	19	21	10	3.93
J254	Isolate malfunctions to central processing units (CPUs)	6.75	43	36	26	3.05
J256	Isolate malfunctions to memory cards	6.73	43	35	23	5.39
K268	Isolate malfunctions to network modules	6.73	29	25	26	5.15
K267	Isolate malfunctions to network message controllers	6.73	30	26	20	5.15
H219	Remove or replace rectifiers	6.71	3	4	21	2.29
H188	Isolate malfunctions to computer remote circuits	6.71	8	12	2	4.63
D82	Conduct resident course classroom training	6.68	3	4	10	.85
H224	Review patch applications	6.65	13	17	5	2.66
F157	Perform traffic studies	6.65	20	24	22	2.71
M318	Remove or replace magnetic tape drive units	6.64	18	22	28	4.56

* TD Mean = 5.00 S.D. = 1.00

** TE Mean = 2.80 S.D. = =1.53

Specialty Training Standard (STS)

A review of the STS 362X1, dated February 1990, was made by comparing survey data to matched STS entries. The STS entries were matched with tasks from the inventory by training school personnel at Sheppard AFB. The tasks related to paragraphs and subparagraphs of the STS were displayed with percent members performing data, task factor ratings, and ATI. A preliminary copy of these data has been forwarded to the technical school for use in the upcoming revisions of the STS.

Tasks performed by 20 percent or more of criterion groups are considered to be supported by the OSR data and generally should be included in the STS. Similarly, tasks performed by less than 20 percent of criterion groups should be considered for deletion.

The criterion groups found to be most useful in these analyses are first-job (1-24 months' TAFMS), first-enlistment (1-48 months' TAFMS), 5-skill level, and 7-skill level groups. There were 57 STS entries unsupported by OSR data. Examples of these unsupported paragraphs are listed in Table 16.

Due to the vast changes in technology over the last 3 years, large portions of the STS are not supported by the data. Almost every subsection of paragraph 17 (X-Y DIAL CENTRAL OFFICE EQUIPMENT) and paragraph 18 (FOUR WIRE TELEPHONE TERMINAL EQUIPMENT FOR AUTOVON INTERFACE DIAL CENTRAL OFFICES) are not supported by the data. In addition, most of the subsections of paragraph 16c (Preventative Maintenance) and large portions of paragraph 7 (PROJECT/MOBILE DEPOT MAINTENANCE GENERAL ACTION) regarding project implementation are also not unsupported.

A complete listing of STS paragraphs not supported by OSR data is included in the Training Extract. Because there are so many, only a sample is listed in Table 17. Training personnel should conduct a thorough review of the STS printout in the TRAINING EXTRACT to determine what should be retained in the STS. The electromechanical switching entries are outdated, as only 3 percent of the sample are maintaining the switches and very low percentages of personnel perform the tasks.

Five tasks were performed by more than 20 percent of personnel within criterion groups and were not matched to the STS. They are listed in Table 18. These tasks should be reviewed by training personnel to determine if they suggest material that should be included in the STS.

TABLE 17

EXAMPLES OF STS ITEMS NOT SUPPORTED BY OSR DATA

STS	REFERENCE/TASKS	COURSE PROF CODE	TNG EMP*	PERCENT MEMBERS PERFORMING 3-LEVEL 1ST ENL (N=79)	5-SKILL LEVEL (N=236)	7-SKILL LEVEL (N=166)	TASK DIFF**
5c.	Apply Time Compliance Technical Order instructions	--					
	E120 Complete material or publication forms deficiency reports		1.76	3	7	9	4.84
6a(3)(a).	Work assignments	--					
	E124 Develop maintenance schedules		1.00	1	3	17	4.55
7j.	Conduct Project implementation MDM/Pre MDM inspection	---					
	E119 Compile pre-implementation surveys (PISs)		.68	1	2	2	4.91
	N363 Perform project implementation surveys		1.05	0	2	4	5.93
8a(1).	Develop plans for project implementation	--					
	E119 Compile pre-implementation surveys (PISs)		.68	1	2	2	4.91
	N331 Interpret blueprints		2.90	5	11	8	5.63
	N332 Interpret floor plans		2.95	3	11	13	5.21

* TE Mean = 2.80 S.D. = 1.53
** TD Mean = 5.00 S.D. = 1.00

TABLE 17 (CONTINUED)

EXAMPLES OF STS ITEMS NOT SUPPORTED BY OSR DATA

STS	REFERENCE/TASKS	COURSE PROF CODE	TNG EMP*	PERCENT MEMBERS PERFORMING 3-LEVEL 1ST ENL (N=79)	5-SKILL LEVEL (N=236)	7-SKILL LEVEL (N=166)	TASK DIFF**
16c(2)(a).	Electrical	--					
O373	Adjust or align electrical relays		2.56	5	8	3	6.10
O377	Adjust or align relay contacts		2.63	4	8	4	5.67
O391	Isolate malfunctions within step-by-step switching equipment		2.73	3	8	4	6.17
O404	Perform PMIs on relays		2.61	4	6	2	4.53
O407	Perform PMIs on step-by-step switching equipment		2.54	5	7	4	4.61
17b(2)(a).	Electrical	--					
O373	Adjust or align electrical relays		2.56	5	8	3	6.10
O377	Adjust or align relay contacts		2.63	4	8	4	5.84
O404	Perform PMIs on relays		2.61	4	6	2	4.53
O410	Perform PMIs on X-Y switching equipment		2.59	1	0	1	4.62
P457	Remove corrosion from metal surfaces		4.32	22	25	16	4.03

* TE Mean = 2.80 S.D. = 1.53

** TD Mean = 5.00 S.D. = 1.00

TABLE 17 (CONTINUED)

EXAMPLES OF STS ITEMS NOT SUPPORTED BY OSR DATA

STS	REFERENCE/TASKS	COURSE PROF CODE	TNG EMP*	PERCENT MEMBERS PERFORMING 3-LEVEL 1ST ENL (N=79)	5-SKILL LEVEL (N=236)	7-SKILL LEVEL (N=166)	TASK DIFF**
18c(2).	Align amplifiers	–					
	H175 Adjust or align amplifiers		3.85	4	13	11	5.59
	O395 Perform amplitude response tests		2.07	0	1	1	
20d(3)(a)	Wet splice	–					
	L278 Connect or disconnect fiber optic cables		3.85	6	9	6	4.75
20d(3)(b)	Dry splice	–					
	L278 Connect or disconnect fiber optic cables		3.85	6	9	6	4.75

* TE Mean = 2.80 S.D. = 1.53
** TD Mean = 5.00 S.D. = 1.00

TABLE 18

TECHNICAL TASKS NOT REFERENCED TO STS

TASKS		1ST JOB	1ST ENL	5-LEVEL	7-LEVEL	TNG EMP	TASK DIFF
H192	Isolate malfunctions to non-switched circuits	25	34	28	21	4.85	6.21
H207	Prepare cut sheets	21	34	34	21	4.24	4.48
L291	Measure resistance levels	29	42	33	22	4.37	4.60
P445	Inspect station grounds for corrosion	21	27	23	24	4.63	3.38
G164	Coordinate leased equipment malfunctions with commercial telephone companies	13	18	27	25	2.71	4.24

JOB SATISFACTION ANALYSIS

Review of the job satisfaction data can give career ladder managers a better understanding of some of the factors that may affect job performance of airmen in the career ladder. In addition to background questions and task statements, the survey booklet included questions on job satisfaction. These questions covered job interest, utilization of talents and training, sense of accomplishment from work, and reenlistment intentions. The responses of the survey sample were compared to the previous survey of the career ladder, to job satisfaction data from related specialties surveyed in 1992, and across career ladder jobs identified in the SPECIALTY JOBS section of the OSR.

Table 19 shows the comparison of TAFMS group data of AFSC 362X1 personnel to similar groups from within Mission Equipment Maintenance Specialties surveyed during the previous year. AFSC 362X1 personnel report a consistently higher utilization of talents and job interest. However, across TAFMS groups the perceived utilization of training is slightly lower. The issue of training was also mentioned in a few of the write-in comments where incumbents pointed out that their lack of training on digital switching equipment limited their usefulness. The 1-48 months' TAFMS group also had a higher percent of incumbents planning to reenlist than that of the comparative sample.

An indication of job satisfaction perceptions over time is provided in Table 20. Some consistency exists between the responses over time. The perceived utilization of training among the 1-48 months TAFMS group again shows the current sample having a lower percentage feeling their training is well utilized. Also, a higher percentage of first-enlistment personnel with reenlistment plans exists in the current sample.

Table 21 shows the job satisfaction data for the career ladder jobs. A substantial difference exists between the job interests of the more commonly held jobs and the smaller jobs within the career field.

TABLE 19

COMPARISON OF TAFMS GROUP JOB SATISFACTION INDICATORS (PERCENT MEMBERS RESPONDING)

	1-48 MOS TAFMS		49-96 MOS TAFMS		97+ MOS TAFMS	
	AFSC 362X1 (N=79)	1992 COMP SAMPLE (N=3,272)	AFSC 362X1 (N=133)	1992 COMP SAMPLE (N=2,917)	AFSC 362X1 (N=235)	1992 COMP SAMPLE (N=6,421)
EXPRESSED JOB INTEREST:						
Interesting	84	74	80	72	79	75
So-So	9	16	11	17	12	16
Dull	8	10	8	11	9	9
PERCEIVED UTILIZATION OF TALENTS:						
Fairly Well to Perfectly	80	75	82	71	82	75
Very Little to Not At All	20	20	19	20	17	18
PERCEIVED UTILIZATION OF TRAINING:						
Fairly Well to Perfectly	77	85	71	81	74	79
Very Little to Not At All	23	14	29	19	26	21
SENSE OF ACCOMPLISHMENT FROM WORK:						
Satisfied	73	73	70	71	71	72
Neutral	13	12	18	11	9	10
Dissatisfied	14	14	12	17	19	17
REENLISTMENT INTENTIONS:						
Will/Probably Will Reenlist	72	58	73	70	67	75
Will Not/Probably Will Not Reenlist	27	40	27	30	14	7
Will Retire	1	-	0	-	19	18

- Less than 1 percent

NOTE: Comparative sample is composed of all Mission Equipment Maintenance career ladders surveyed in 1992 (includes AFSCs 305X4, 404X0, 411X0A, 452X5, 454X5, 454X6, 457X0A/B/D/F, 457X2A/D/E, 463X0)

TABLE 20

COMPARISON OF JOB SATISFACTION DATA
(PERCENT MEMBERS RESPONDING)

	1-48 MOS TAFMS		49-96 MOS TAFMS		97+ MOS TAFMS	
	1993 (N=79)	1989 (N=204)	1993 (N=133)	1989 (N=211)	1993 (N=235)	1989 (N=213)
EXPRESSED JOB INTEREST:						
Interesting	84	80	80	73	79	80
So-So	9	10	11	17	12	12
Dull	8	9	8	10	9	7
PERCEIVED UTILIZATION OF TALENTS:						
Fairly Well to Perfectly	80	84	81	82	83	81
Very Little to Not At All	20	16	19	18	17	19
PERCEIVED UTILIZATION OF TRAINING:						
Fairly Well to Perfectly	77	85	71	73	74	72
Very Little to Not At All	23	15	29	27	26	28
SENSE OF ACCOMPLISHMENT FROM WORK:						
Satisfied	73	75	70	78	71	70
Neutral	13	11	18	9	9	7
Dissatisfied	14	14	12	12	19	21
REENLISTMENT INTENTIONS:						
Will/Probably Will Reenlist	72	62	73	65	67	76
Will Not/Probably Will Not Reenlist	27	36	27	34	14	8
Will Retire	1	1	0	1	19	15

TABLE 21

JOB SATISFACTION DATA FOR CLUSTERS AND JOBS
(PERCENT MEMBERS RESPONDING)

	DIGITAL SWITCHING SYSTEMS MAINT (N=209)	ELECTRO-MECHANICAL SWITCHING SYS MAINT (N=15)	E&I TEAM (N=24)	JOB CONTROL (N=4)
EXPRESSED JOB INTEREST:				
Interesting	88	67	92	25
So-So	8	13	4	50
Dull	4	20	4	25
PERCEIVED UTILIZATION OF TALENTS:				
Fairly Well to Perfectly	88	60	87	75
Very Little To None At All	12	40	13	25
PERCEIVED UTILIZATION OF TRAINING:				
Fairly Well to Perfectly	83	67	66	25
Very Little To Not At All	17	33	46	75
SENSE OF ACCOMPLISHMENT:				
Satisfied	77	73	83	25
Neutral	12	13	8	50
Dissatisfied	11	14	8	25
REENLISTMENT INTENTIONS:				
Will/Probably Will Reenlist	70	87	83	100
Will Not/Probably Will Not Reenlist	23	13	17	0
Will Retire	7	0	0	0

TABLE 21 (CONTINUED)

JOB SATISFACTION DATA FOR CLUSTERS AND JOBS
(PERCENT MEMBERS RESPONDING)

	COMMERCIAL LIAISONS (N=12)	QC/ QA (N=13)	RESIDENT TRAINING INST (N=4)	SUPVY/ MGMT (N=80)	FUNCTIONAL MANAGERS (N=18)
EXPRESSED JOB INTEREST:					
Interesting	58	69	100	86	50
So-So	17	15	0	10	33
Dull	25	15	0	4	17
PERCEIVED UTILIZATION OF TALENTS:					
Fairly Well To Perfectly	58	77	100	92	67
Very Little Or Not At All	42	23	0	9	33
PERCEIVED UTILIZATION OF TRAINING:					
Fairly To Perfectly	50	53	100	83	39
Very Little To Not At All	50	45	0	18	61
SENSE OF ACCOMPLISHMENT:					
Satisfied	58	62	75	79	44
Neutral	17	8	0	8	17
Dissatisfied	25	31	25	14	39
REENLISTMENT INTENTIONS:					
Will/Probably Will Reenlist	67	62	50	71	39
Will Not/Probably Will Not Reenlist	33	38	50	6	22
Will Retire	0	0	0	23	39

IMPLICATIONS

This survey was conducted primarily to review the career ladder structure based on the inclusion of digital switching in the basic AFSC 362X1 course. Changes in the career ladder job structure have occurred due to the massive changeover from electromechanical to digital switching systems. Data collected in this survey indicate the AFR 39-1 Specialty Descriptions accurately portray the jobs in this career ladder.

Analysis of the STS points out that the scheduled revisions are warranted. Substantial sections associated with older technologies should be considered for deletion.

Job satisfaction ratings for this specialty are varied. At least in part, these variations exist due to the changes in technology from electromechanical to digital switching systems. On the whole, respondents report higher job satisfactions than comparable groups in related specialties, and their satisfaction appears to be stable compared to their responses 4 years ago.

APPENDIX A

TABLE I

DIGITAL SWITCHING SYSTEMS MAINTENANCE CLUSTER
ST57

GROUP SIZE: 209
PERCENT OF SAMPLE: 47%
PREDOMINANT PAYGRADE: E-4

AVERAGE TAFMS: 92 MONTHS
AVERAGE TICF: 80 MONTHS
PERCENT IN 1ST ENL: 55%

TASKS		PERCENT MEMBERS PERFORMING
P460	Remove or replace jumpers	88
I235	Isolate malfunctions to dial lines	88
P465	Wrap or unwrap terminals	87
I245	Isolate malfunctions to single-line telephones	85
I236	Isolate malfunctions to direct lines	84
H210	Remove or replace circuit cards or electrical card assemblies	80
H211	Remove or replace fuses	79
I248	Trace calls using visual display units (VDUs)	77
A6	Coordinate jobs, outages, or maintenance with job control	77
P451	Isolate malfunctions to jumpers	77
M307	Isolate malfunctions to attendant consoles	77
J260	Take software images or database backups	76
H201	Perform PMIs on air filters	75
G167	Coordinate troubleshooting with outside agencies	74
L276	Access lines and trunks from maintenance positions (MAPs)	74
H195	Measure voltage levels	74
I237	Isolate malfunctions to duress or intrusion alarm circuits	74
P439	Inspect batteries for corrosion	73
G170	Program features	73
G165	Coordinate telephone installation activities with inside or outside plants	68
H199	Perform busy-out procedures	68
I241	Isolate malfunctions to inside wiring	67
M310	Isolate malfunctions to magnetic tape drive units	66
E143	Update telephone system cable records	66
I243	Isolate malfunctions to multiline telephones	66
I239	Isolate malfunctions to fire alarm circuits	66
H194	Measure capacitance levels	65
I234	Isolate malfunctions to data circuits	65

TABLE II

ELECTROMECHANICAL SWITCHING SYSTEMS MAINTENANCE JOB
ST70

GROUP SIZE: 15
PERCENT OF SAMPLE: 4%
PREDOMINANT PAYGRADE: E-4

AVERAGE TAFMS: 96 MONTHS
AVERAGE TICF: 64 MONTHS
PERCENT IN 1ST ENL: 47%

TASKS		PERCENT MEMBERS PERFORMING
P465	Wrap or unwrap terminals	100
O379	Adjust or align switch contacts	100
P463	Solder or desolder terminals	93
P460	Remove or replace jumpers	93
O393	Operate central office test desks	93
O377	Adjust or align relay contacts	93
O374	Adjust or align electrical switches	93
O403	Perform PMIs on mechanical switches	93
O380	Adjust or align wiper contacts	93
O384	Assemble or disassemble mechanical switches	93
O385	Isolate malfunctions to central office switchboards	93
O407	Perform PMIs on step-by-step switching equipment	86
O375	Adjust or align mechanical relays	86
O433	Trace calls using trunking schematics or bay cards	86
O391	Isolate malfunctions within step-by-step switching equipment	86
O376	Adjust or align mechanical switches	86
O390	Isolate malfunctions within linefinder equipment	86
O381	Adjust or align wipers	86
O373	Adjust or align electrical relays	86
P439	Inspect batteries for corrosion	86
O400	Perform PMIs on central office switchboards	86
P442	Inspect frames for corrosion	86
O405	Perform PMIs on ringer units	80
O401	Perform PMIs on central office test desks	80
O420	Remove or replace mechanical relays	80
P438	Cross-connect intermediate or mainframes	80
O404	Perform PMIs on relays	73
O398	Perform PMIs on attendant cabinets	73
P440	Inspect bus bars for corrosion	73
O431	Remove or replace wipers	73

TABLE III

ENGINEERING AND INSTALLATION (E & I) TEAM JOB
ST72

GROUP SIZE: 24
PERCENT OF SAMPLE: 5%
PREDOMINANT PAYGRADE: E-4

AVERAGE TAFMS: 110 MONTHS
AVERAGE TICF: 98 MONTHS
PERCENT IN 1ST ENL: 30%

TASKS		PERCENT MEMBERS PERFORMING
N337	Mark, cut, strip, and butt cables	100
N329	Form cables	100
N328	Fan cables	100
N343	Perform initial installations of cable runs	95
N368	Run cables	83
N353	Perform initial installations of jumpers	83
N338	Perform cable operational tests	83
P464	Terminate cables with punch-on devices	83
N344	Perform initial installations of cable troughs or conduits	79
N327	Drill holes for mountings or cable runs	79
P465	Wrap or unwrap terminals	79
N362	Perform initial installations of wire wrap or amphenol connecting blocks	75
N332	Interpret floor plans	75
N342	Perform initial installations of cable in underfloor conduit systems	70
N331	Interpret blueprints	66
P463	Solder or desolder terminals	63
N347	Perform initial installations of digital modems	63
N366	Remove or replace cable racks	58
N330	Ground power supplies	58
N321	Attach identification tags to cable ends	58
E118	Check out or return tools or equipment	58
N351	Perform initial installations of inside wiring	58
P462	Remove or replace twisted pair cables	58
N336	Locate or mark positioning of equipment on plans or specifications	54
P457	Remove corrosion from metal surfaces	50
P460	Remove or replace jumpers	50
E126	Maintain tool kits	46
N333	Isolate factory wiring faults	46
P434	Apply corrosion preventative materials to equipment or supplies	46
P451	Isolate malfunctions to jumpers	46

TABLE IV

JOB CONTROL JOB
ST67

GROUP SIZE: 4
PERCENT OF SAMPLE: >1%
PREDOMINANT PAYGRADE: E-4

AVERAGE TAFMS: 57 MONTHS
AVERAGE TICF: 51 MONTHS
PERCENT IN 1ST ENL: 100%

TASKS		PERCENT MEMBERS PERFORMING
G162	Assign job control numbers	100
G167	Coordinate troubleshooting with outside agencies	100
A23	Prepare briefings	75
A6	Coordinate jobs, outages, or maintenance with job control	50
E116	Annotate workorders	50
A13	Determine work priorities	50
B32	Direct maintenance of equipment or supplies	50
G164	Coordinate leased equipment malfunctions with commercial telephone companies	50
G173	Review telephone workorder logs	50
A27	Update preventive maintenance instructions (PMIs)	50
D100	Train personnel on core automated maintenance system (CAMS)	50
A3	Conduct meetings, such as staff, council, board	25
A26	Update preventative maintenance instructions	25
A9	Determine equipment or supply requirements	25
E141	Update publication files	25
G163	Coordinate circuit or trunk outages with commercial telephone companies	25
D81	Conduct OJT	25
B36	Implement emergency or disaster preparedness plans	25
E129	Process work orders	25
E118	Check out or return tools or equipment	25

TABLE V

COMMERCIAL LIAISONS JOB
ST26

GROUP SIZE: 12
PERCENT OF SAMPLE: 3%
PREDOMINANT PAYGRADE: E-5

AVERAGE TAFMS: 134 MONTHS
AVERAGE TICF: 130 MONTHS
PERCENT IN 1ST ENL: 0%

TASKS		PERCENT MEMBERS PERFORMING
G166	Coordinate telephone installations with base units or commercial telephone companies	83
G164	Coordinate leased equipment malfunctions with commercial telephone companies	75
G169	Log requirements for telephone installations	75
G163	Coordinate circuit or trunk outages with commercial telephone companies	75
G167	Coordinate troubleshooting with outside agencies	75
G173	Review telephone work order logs	58
G165	Coordinate telephone installation activities with inside or outside plants	50
E129	Process workorders	50
G162	Assign job control numbers	50
E116	Annotate workorders	42
B29	Assign due dates	42
B30	Direct installation of telephone equipment	42
F150	Assign line assignments	42
A11	Determine telephone installation requirements	42
G168	Interpret communication service reports	33
E143	Update telephone system cable records	33
G170	Program features	33
A12	Determine telephone maintenance requirements	33
B39	Implement safety training programs	33
F147	Analyze equipment outages or malfunction reports	33
C77	Write EPRs	25
A5	Coordinate installation of equipment with contract personnel or associated system personnel	25
A6	Coordinate jobs, outages, or maintenance with job control	25
C65	Perform self-inspections	25
A9	Determine equipment or supply requirements	25

TABLE VI

QUALITY CONTROL/QUALITY ASSURANCE CLUSTER
GP42

GROUP SIZE: 13
PERCENT OF SAMPLE: 3%
PREDOMINANT PAYGRADE: E-7

AVERAGE TAFMS: 143 MONTHS
AVERAGE TICF: 123 MONTHS
PERCENT IN 1ST ENL: 8%

TASKS		PERCENT MEMBERS PERFORMING
B48	Write staff studies or special reports	54
C50	Counsel personnel on personal or military related matters	46
A22	Plan work assignments	46
D81	Conduct OJT	46
A18	Establish work controls	38
D95	Perform test analyses	38
D98	Schedule personnel for training	38
A13	Determine work priorities	38
D91	Evaluate individual training needs	38
A23	Prepare briefings	38
C68	Review correspondence	38
E129	Process workorders	31
B32	Direct maintenance of equipment or supplies	31
B41	Interpret policies, directives, or procedures for personnel	31
A9	Determine equipment or supply requirements	31
D94	Evaluate training methods or techniques	31
D90	Develop training programs	31
D78	Administer tests	31
A6	Coordinate jobs, outages, or maintenance with job control	31
A10	Determine personnel requirements	31
C56	Evaluate suggestions	31
A12	Determine telephone maintenance requirements	31
A3	Conduct meetings, such as staff, council, board	31
B36	Implement emergency or disaster preparedness plans	31
D79	Annotate on-the-job training records	31
C55	Evaluate personnel for compliance with safety standards	31

TABLE VII

RESIDENT TRAINING INSTRUCTORS JOB
ST175

GROUP SIZE: 4
PERCENT OF SAMPLE: >1%
PREDOMINANT PAYGRADE: E-5

AVERAGE TAFMS: 111 MONTHS
AVERAGE TICF: 109 MONTHS
PERCENT IN 1ST ENL: 0%

TASKS		PERCENT MEMBERS PERFORMING
D82	Conduct resident course classroom training	100
D83	Conduct skill performance tests	100
D99	Score tests	100
D96	Prepare lesson plans	100
D78	Administer tests	75
D85	Construct training aids	75
D97	Procure training aids, space, or equipment	50
D95	Perform test analyses	50
D104	Write test questions	50
D93	Evaluate progress of resident course students	50
D86	Counsel trainers or trainees on training progress	50
C50	Counsel personnel on personal or military-related matters	50
C55	Evaluate personnel for compliance with safety standards	25
C54	Evaluate personnel for compliance with performance standards	25
E125	Inventory equipment or supplies	25
E132	Review daily document registers	25
E107	Annotate custody authorization/custody receipt listings (CA/CRLs)	25
C70	Review master identification listings	25
E131	Review CA/CRLs	25
E142	Update technical order (TO) files or TO compliance records	25
C65	Perform self-inspections	25
E138	Unpack or verify received materials	25

TABLE VIII

SUPERVISORY/MANAGEMENT CLUSTER
ST51

GROUP SIZE: 80
PERCENT OF SAMPLE: 18%
PREDOMINANT PAYGRADE: E-6

AVERAGE TAFMS: 172 MONTHS
AVERAGE TICF: 152 MONTHS
PERCENT IN 1ST ENL: 1%

TASKS		PERCENT MEMBERS PERFORMING
C77	Write EPRs	93
C50	Counsel personnel on personal or military-related matters	90
A13	Determine work priorities	88
A20	Plan details or additional duties	86
A22	Plan work assignments	82
D91	Evaluate individual training needs	82
B41	Interpret policies, directives, or procedures for personnel	81
C54	Evaluate personnel for compliance with performance standards	80
D87	Determine training requirements	77
A25	Schedule leaves or temporary duty (TDY) assignments	77
C68	Review correspondence	76
D79	Annotate on-the-job training (OJT) records	76
A18	Establish work controls	75
A9	Determine equipment or supply requirements	75
D92	Evaluate progress of OJT trainers or trainees	73
A19	Establish work methods	73
C51	Evaluate individuals for promotion, demotion, or reclassification	71
A17	Establish performance standards for personnel	71
A6	Coordinate jobs, outages, or maintenance with job control	71
B46	Supervise Telephone Switching Specialists (AFSC 36251)	70
C52	Evaluate inspection report findings or procedures	70
B29	Assign due dates	70
C55	Evaluate personnel for compliance with safety standards	70
D81	Conduct OJT	68
A10	Determine personnel requirements	66
A8	Coordinate quality control (QC) or quality assurance (QA) inspections with inspectors	66
A1	Assign personnel to duty positions	66

TABLE IX

FUNCTIONAL MANAGERS CLUSTER
ST31

GROUP SIZE: 18
PERCENT OF SAMPLE: 4%
PREDOMINANT PAY GRADE: E-7

AVERAGE TAFMS: 207 MONTHS
AVERAGE TICF: 193 MONTHS
PERCENT IN 1ST ENL: 0%

TASKS		PERCENT MEMBERS PERFORMING
C68	Review correspondence	83
A3	Conduct meetings, such as staff, council, board	61
A14	Develop tables, graphs, or diagrams other than organizational charts or status boards	56
A23	Prepare briefings	56
B48	Write staff studies or special reports	56
B29	Assign due dates	50
E139	Update administrative files	44
C66	Perform technical advisory functions	44
A4	Coordinate equipment modifications with contract personnel	44
A16	Establish organizational policies, operating instructions (OIs), or standard operating procedures for personnel	39
B41	Interpret policies, directives, or procedures for personnel	33
A9	Determine equipment or supply requirements	33
A13	Determine work priorities	33
A5	Coordinate installation of equipment with contract personnel or associated system personnel	33
E107	Annotate custody authorization/custody receipt listings	33
C56	Evaluate suggestions	33
A11	Determine telephone installation requirements	28
E131	Review CA/CRLs	28
F147	Analyze equipment outages or malfunction reports	28
A26	Update organizational charts or status boards	22
D98	Schedule personnel for training	17
D87	Determine training requirements	17
C69	Review event lists	17
B31	Direct maintenance of administrative files	17
B30	Direct installation of telephone equipment	17
E132	Review daily document registers	17
E133	Review daily supply records	17