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OCCUPATIONAL SURVEY REPORT

RADIOLOGIC CAREER LADDER

AFSC 903X0

AFPT 90-903-950

SEPTEMBER 1992

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

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PREFACE

This report presents the results of an occupational survey of the Radiologic career ladder, Air Force Specialty Code (AFSC) 903X0. Authority for conducting occupational surveys is found in Air Force Regulation (AFR) 35-2. Computer products used in this report are available for use by operations and training officials.

Chief Master Sergeant Wendell Beaty, Inventory Development Specialist, developed the survey instrument. First Lieutenant Mark L. Holbrook analyzed the survey data and wrote the final report. Ms Olga Velez provided computer programming support; 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, United States Air Force Occupational Measurement Squadron (OMS).

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 USAFOMS, Attention: Chief, Occupational Analysis Flight (OMY), Randolph AFB, Texas 78150-5000.

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SUMMARY OF RESULTS

1. Survey Coverage: The sample included 655 personnel, or 56 percent of the total assigned population. Three-skill level personnel were not included in the study, as they are students in Phase II training. Major command (MAJCOM) and paygrade groups were adequately represented in the sample.
2. Specialty Jobs: Survey data show there is one cluster of jobs and seven independent jobs in the career ladder, distinguished by tasks members perform related to specific procedures or equipment.
3. Career Ladder Progression: AFSC 903X0 personnel follow an orderly skill-level progression. Five-skill level personnel perform basic radiologic tasks, 7-skill level personnel perform a mixture of more technical and supervisory tasks, while 9-skill level and CEM-code members are the managers of the career ladder.
4. AFR 39-1 Specialty Descriptions: The AFR 39-1 Specialty Descriptions for the Radiologic career ladder provide accurate descriptions of the jobs and tasks performed at each skill level.
5. Training: Most elements of the Specialty Training Standard (STS) and most matched learning objectives of the Plan of Instruction (POI) are supported by survey data. Some tasks were not matched to elements of the STS and POI, yet were performed by sufficient numbers of 903X0s to require review for possible inclusion in these documents.
6. Job Satisfaction: The job satisfaction of AFSC 903X0 personnel is higher than that of members of related medical AFSCs surveyed in 1991 and higher than the previous study. Members performing the various jobs find their jobs interesting and feel their talents and training are used. Reenlistment intentions, however, are lower for AFSC 903X0 personnel than those reported by members of related AFSCs and lower than those reported in the prior Occupational Survey Report (OSR).
7. Discussion: New procedures and types of equipment have been placed in use with resulting specialization. Additional Special Experience Identifiers (SEIs) or shredouts may be needed to address the specialized procedures and equipment used. AFSC 903X0 progress typically through the career ladder. The STS and POI are well supported, and the AFR 39-1 descriptions are accurate. Job satisfaction has remained high for members of this specialty, while reenlistment intentions have declined.

OCCUPATIONAL SURVEY REPORT
RADIOLOGIC CAREER LADDER
(AFSC 903X0)

INTRODUCTION

This is a report of an occupational survey of the Radiologic career ladder, AFSC 903X0. The last occupational survey for this career ladder was published in July 1985. This survey was requested by the 3790 MTSW/MSC to collect data that will be used to review career ladder documents in light of the new diagnostic procedures now in use, and to help determine if these new procedures need to be included in formal Air Force training programs.

Background

According to AFR 39-1 Specialty Descriptions for AFSCs 90310/30/50, dated 15 Mar 91, 3- and 5-skill level members are responsible for operating equipment to produce diagnostic images using radiography, ultrasonography, and computerized tomography modalities; instructing and positioning patients to produce correct exposures; assisting with special imaging procedures; positioning and monitoring patients and equipment for radiotherapy; performing administrative functions in processing patients and their records; assisting with Phase II training; and engaging in general radiology activities such as mixing processing solutions, loading and unloading the film holder, and equipment preventive maintenance. The 3-skill level is awarded after Phase I course completion and the 5-skill level after Phase II course completion.

Seven-skill level members perform special mammography, linear and multidirectional tomography, scanography, and xeroradiography techniques; assist the radiologist or physician with angiography and lymphangiography; set up and operate accessory equipment; perform radiotherapy administrative functions; and enforce health-protective measures.

Nine-skill level members have additional responsibilities for planning and organizing radiology activities; assisting and advising officer-in-charge on design and development of organizational structure; analyzing workload and establishing production controls and performance standards for administrative and technical radiology activities; monitoring all special equipment preventive maintenance and procurement; directing subprofessional radiology activities; observing duty performance and actively providing technical and administrative advice to subordinates; establishing, supervising, and conducting inservice training programs; managing and directing Phase II medical training; and inspecting and evaluating subprofessional radiology activities.

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Members enter the career ladder by completing the 14-week Phase I - J3ABR90330-000 Radiologic Specialist course conducted at Sheppard AFB TX. This course provides instruction on theory of basic electricity; radiographic-techniques; radiographic film and chemical processing; radiographically oriented anatomy and physiology; theory and practice of operating fixed and mobile radiologic equipment; routine and special radiographic positioning; theory and practice of special radiographic techniques; and introduction to special radiographic procedures and associated equipment. Upon completion, personnel receive the 3-skill level and are sent to a USAF medical facility for Phase II training.

Phase II training lasts 38 weeks and provides practical clinical training and experience in nursing, orthopedic, and surgical procedures; department administration; film processing and exposure techniques; bedside and surgical radiographic procedures; night emergency call; and proficiency training in radiologic technology and radiation protection. Upon completion, personnel receive the 5-skill level. At the present time, the new modalities are taught either by on-the-job-training (OJT) or through attendance at expensive courses conducted at civilian institutions.

SURVEY METHODOLOGY

Inventory Development

Data for this survey were collected using USAF Job Inventory (JI) 90-903-950 dated November 1990. The inventory developer reviewed pertinent career ladder documents, OSRs, and job inventories from the previous OSR, and then prepared a tentative task list. This preliminary task list was then refined and validated through personal interviews with 50 subject-matter experts at the following USAF hospitals:

ORGANIZATION

REASON VISITED

Malcolm Grow USAF
Medical Center
Travis AFB CA

Representative of small center with advanced
advanced modalities

Wilford Hall USAF
Medical Center
Lackland AFB TX

Representative of large medical center

832 Med Gp
Luke AFB AZ

Representative of large hospital

Ehrling Bergquist
Strategic Hospital
Offutt AFB NE

Representative of moderate-sized
regional hospital

USAF Clinic Randolph AFB TX	Only one 903X0 person assigned
3790 MSTW Sheppard AFB TX	Technical training center
David Grant Medical Center Travis AFB CA	Representative of large new facility
USAF Medical Center Wright-Patterson AFB OH	Representative of a large center with digital radiology

The final inventory contained 609 tasks grouped under 14 duty headings and background questions requesting such information as grade, MAJCOM assigned, duty title, job satisfaction, and equipment used.

Survey Administration

From May 1991 to January 1992, Military Personnel Flights at operational bases worldwide administered the surveys to AFSC 903X0 personnel selected from a computer-generated mailing list provided by the Armstrong Laboratory, Human Resources Directorate (AL/HRD). Respondents were asked to complete an identification and biographical information section first, go through the booklet and check each task performed in their current job, and go back and use a 9-point scale to indicate the relative amount of time they spend performing the tasks they marked. Time spent ratings ranged from 1 (indicating a very small amount of time spent) to 9 (indicating a very large amount of time spent).

The computer calculated the relative percent time spent on all tasks for each respondent by first totaling ratings on all tasks, dividing the rating for each task by this total, and multiplying by 100. The percent time spent ratings from all inventories were then combined and used with percent member performing values to describe various groups in the career ladder.

Survey Sample

The final sample includes responses from 655 AFSC 903X0 members. Personnel holding the 3-skill level were omitted from the sample because they are in Phase II training. As shown in Tables 1 and 2, the MAJCOM and paygrade representation of the sample is very close to that of the total AFSC 903X0 population.

Task Factor Administration

Job descriptions alone do not provide sufficient data for making decisions about career ladder documents or training programs. Task factor information is needed for a complete analysis of the career ladder. The

TABLE 1
 COMMAND REPRESENTATION OF SURVEY SAMPLE
 AFSC 903X0

<u>COMMAND</u>	<u>PERCENT OF ASSIGNED</u>	<u>PERCENT OF SAMPLE</u>
AFLC	6	9
AFSC	3	4
ATC	33	24
AU	1	2
MAC	12	9
PACAF	4	6
SAC	12	16
TAC	16	19
USAFE	8	8

Total Assigned = 1,160
 Total Eligible for Survey = 1,122
 Total in Sample* = 655
 Percent of Assigned in Sample: 56%

* Excludes 3-skill level students in Phase II training

TABLE 2
PAYGRADE DISTRIBUTION OF SURVEY SAMPLE

<u>PAYGRADE</u>	<u>PERCENT OF ASSIGNED</u>	<u>PERCENT OF SAMPLE</u>
E-1 - E-3	24	16
E-4	38	40
E-5	22	25
E-6	9	9
E-7	5	6
E-8	2	2
E-9	*	*

* Denotes less than 1 percent

survey process provides the needed task factor data by asking selected E-6 and E-7 non-commissioned officers (NCOs) to complete either a training emphasis (TE) or task difficulty (TD) booklet. These booklets were processed separately from the JIs, and the TE and TD data, where applicable, are considered when analyzing other issues in this study.

Training Emphasis (TE). TE is defined as the amount of structured training first-enlistment personnel need to perform tasks successfully. Structured training is defined as training provided by resident technical schools, field training detachments (FTD), mobile training teams (MTT), formal OJT, or any other organized training method. Forty-six experienced AFSC 903X0 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 these 46 rates was acceptable. The average TE rating is 2.70, with a standard deviation of 1.97. Any task with a TE rating of 4.67 or greater is considered to have a high TE.

Task Difficulty (TD). TD is defined as an estimate of the length of time the average airman takes to learn how to perform a task. Fifty-eight experienced NCOs rated the difficulty of the inventory tasks on a 9-point scale ranging from 1 (easy to learn) to 9 (very difficult to learn). Interrater agreement was again acceptable. TD ratings are normally adjusted so tasks of average difficulty have a value of 5.0, with a standard deviation of 1.0. Thus, any task with a TD rating of 6.00 or above is considered difficult to learn.

SPECIALTY JOBS (Career Ladder Structure)

The first step in the analysis process is to identify the structure of the career ladder in terms of the jobs performed by the respondents. Comprehensive Occupational Data Analysis Program (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 the career ladder is then defined in terms of jobs and clusters of jobs.

Overview

The mission of the Radiologic career ladder is to provide reliable radiological support in the diagnosis, treatment, and prevention of injuries/diseases affecting the health and welfare of USAF personnel (both active duty and retired) and their dependents. The Radiology career ladder operates under the supervision of the USAF Surgeon General and performs a highly visible, integral part of hospital and medical facility services Air Force wide. The amount and type of service provided by any radiology unit depends on the medical treatment facility it supports. The USAF Surgeon General designates categories of medical treatment facilities based upon the scope of medical services or specialties provided. In turn, the scope of medical services provided is determined by the ability of the professional staff and adequacy of medical facilities. The occupied patient bed rate further delineates medical treatment facilities, such that average ranges (as of January 1988) are as follows:

Medical Center	150 - 1,000 beds
Regional Medical Center	155 - 195 beds
Regional Hospital	40 - 145 beds
Hospital	2 - 70 beds
Clinic	- No beds

Survey data show the career ladder consists of one general radiology job, five small specialized jobs of advanced modalities, a training job, and a superintendent job (see Figure 1). These jobs are listed below. The Stage (STG) number shown by the job title is a reference number assigned by CODAP, while the letter "N" denotes the number of respondents performing the job. The time members spend on duties is shown in Table 3 and selected background information on members performing the jobs is shown in Table 4. Representative tasks performed by members with the jobs are listed in Appendix A.

- I. GENERAL RADIOLOGY CLUSTER (STG55, N=509)
- II. ANGIOGRAPHY JOB (STG86, N=8)
- III. COMPUTERIZED TOMOGRAPHY (CT) JOB (STG69, N=15)
- IV. MAGNETIC RESONANCE IMAGING (MRI) JOB (STG72, N=5)
- V. ULTRASOUND JOB (STG48, N=14)
- VI. RADIOLOGIC THERAPY JOB (STG101, N=5)
- VII. INSTRUCTORS JOB (STG41, N=12)
- VIII. SUPERINTENDENT JOB (STG45, N=37)

DISTRIBUTION OF AFSC 903X0 PERSONNEL ACROSS CAREER LADDER JOBS

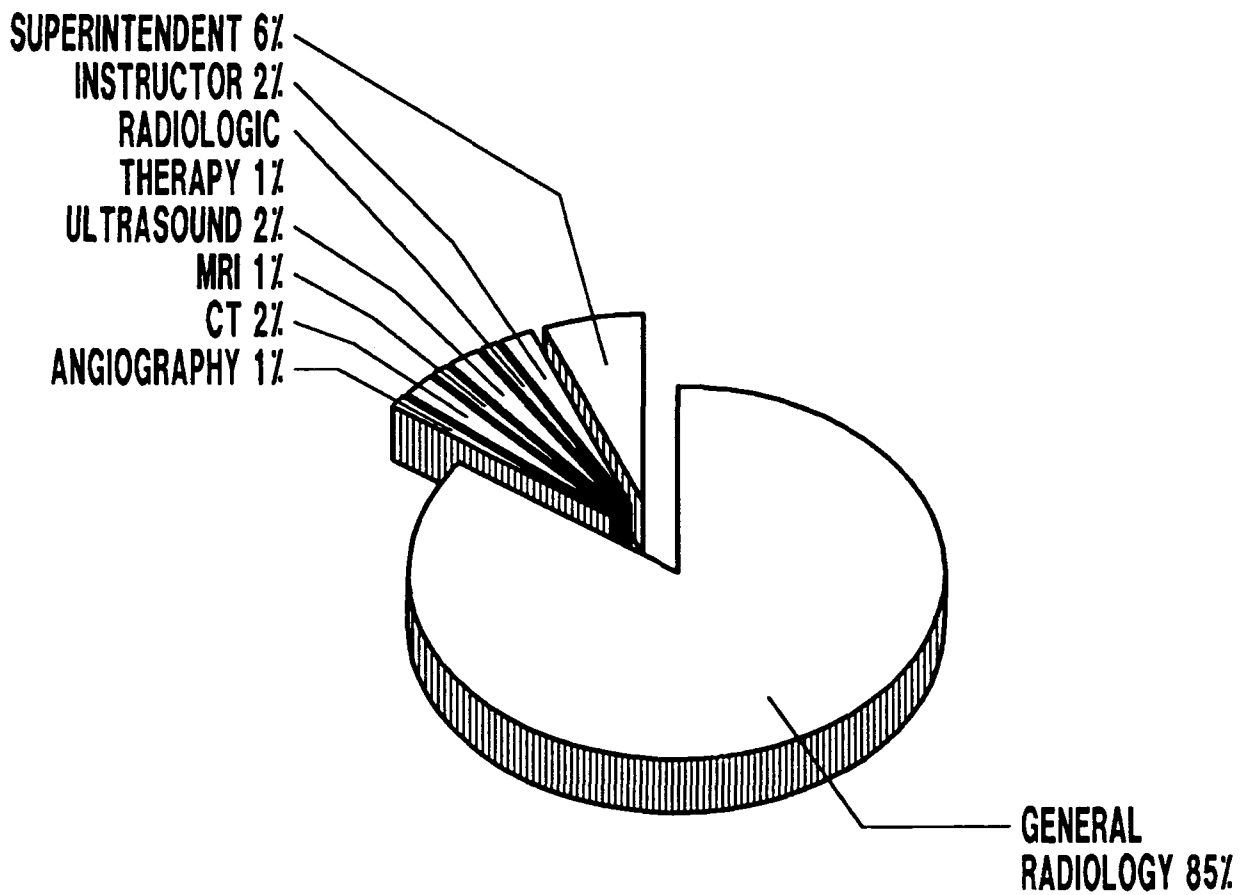


FIGURE 1

TABLE 3

RELATIVE PERCENT TIME SPENT PERFORMING DUTIES ACROSS JOBS

DUTIES	GENERAL RADIOLOGY CLUSTER (N=509)	ANGIOGRAPHY JOB (N=8)	COMPUTERIZED TOMOGRAPHY JOB (N=15)	MAGNETIC RESONANCE IMAGING JOB (N=5)
A ORGANIZING AND PLANNING	2	3	3	3
B DIRECTING AND IMPLEMENTING	3	3	4	3
C INSPECTING AND EVALUATING	2	2	2	2
D TRAINING	1	1	2	1
E PERFORMING ADMINISTRATIVE FUNCTIONS	15	8	17	19
F PERFORMING QUALITY CONTROL OR QUALITY ASSURANCE FUNCTIONS	6	3	4	1
G PROCESSING RADIOGRAPHIC FILM	9	10	5	14
H PERFORMING GENERAL SERVICES	5	11	9	9
I PERFORMING STANDARD RADIOGRAPHIC EXAMINATIONS	36	11	*	*
J PERFORMING OR PARTICIPATING IN BEDSIDE AND SURGICAL RADIOGRAPHY	7	*	1	*
K PERFORMING OR PARTICIPATING IN SPECIAL RADIOGRAPHIC PROCEDURES	9	11	2	*
L PERFORMING OR PARTICIPATING IN ADVANCED DIAGNOSTIC MODALITIES	2	36	50	47
M PERFORMING ULTRASONOGRAPHY PROCEDURES	2	*	*	*
N PERFORMING RADIATION THERAPY	*	*	*	*

* Denotes less than 1 percent

TABLE 3 (CONTINUED)

RELATIVE PERCENT TIME SPENT PERFORMING DUTIES ACROSS JOBS

DUTIES	ULTRASOUND JOB (N=14)	RADIOLOGIC THERAPY JOB (N=5)	INSTRUCTIONS JOB (N=12)	SUPERINTENDENT JOB (N=37)
A ORGANIZING AND PLANNING	2	3	10	23
B DIRECTING AND IMPLEMENTING	3	1	14	21
C INSPECTING AND EVALUATING	2	1	3	19
D TRAINING	4	*	52	6
E PERFORMING ADMINISTRATIVE FUNCTIONS	11	4	3	15
F PERFORMING QUALITY CONTROL OR QUALITY ASSURANCE FUNCTIONS	1	1	8	7
G PROCESSING RADIOGRAPHIC FILM	10	11	7	2
H PERFORMING GENERAL SERVICES	5	8	1	1
I PERFORMING STANDARD RADIOGRAPHIC EXAMINATIONS	1	2	1	3
J PERFORMING OR PARTICIPATING IN BEDSIDE AND SURGICAL RADIOGRAPHY	*	*	*	*
K PERFORMING OR PARTICIPATING IN SPECIAL RADIOGRAPHIC PROCEDURES	*	*	*	*
L PERFORMING OR PARTICIPATING IN ADVANCED DIAGNOSTIC MODALITIES	*	1	*	*
M PERFORMING ULTRASONOGRAPHY PROCEDURES	60	*	*	1
N PERFORMING RADIATION THERAPY	*	67	*	1

* Denotes less than 1 percent

TABLE 4

SELECTED BACKGROUND DATA FOR MEMBERS OF AFSC 903X0 JOBS

DUTIES	GENERAL RADIOLOGY CLUSTER	ANGIOGRAPHY JOB	COMPUTERIZED TOMOGRAPHY JOB	MAGNETIC RESONANCE IMAGING JOB
NUMBER IN GROUP	509	8	15	5
PERCENT OF SAMPLE	78	1	2	1
PERCENT IN CONUS	83	100	93	100

DAFSC DISTRIBUTION (PERCENT):

90350	78	100	60	100
90370	22	0	40	0
90399	0	0	0	0
90300	0	0	0	0

AVERAGE MONTHS IN CAREER FIELD
AVERAGE MONTHS TAFMS
PERCENT IN FIRST ENLISTMENT

68	64	67	45
80	72	95	46
34%	25%	14%	40%

AVERAGE NUMBER TASKS PERFORMED
PERCENT SUPERVISING

156	82	86	51
21%	25%	33%	20%

TABLE 4 (CONTINUED)

SELECTED BACKGROUND DATA FOR MEMBERS OF AFSC 903X0 JOBS

	ULTRASOUND JOB	RADIOLOGIC THERAPY JOB	INSTRUCTIONS JOB	SUPERINTENDENT JOB
NUMBER IN GROUP	14	5	12	37
PERCENT OF SAMPLE	2	1	2	6
PERCENT IN CONUS	86	100	100	89

DAFSC DISTRIBUTION (PERCENT)

90350	86	100	50	0
90370	14	0	50	78
90399	0	0	0	16
90300	0	0	0	5

AVERAGE MONTHS IN CAREER FIELD
AVERAGE MONTHS TAFMS
PERCENT IN FIRST ENLISTMENT

AVERAGE MONTHS IN CAREER FIELD	91	97	140	183
AVERAGE MONTHS TAFMS	101	106	137	208
PERCENT IN FIRST ENLISTMENT	0	0	0	3%

AVERAGE NUMBER TASKS PERFORMED
PERCENT SUPERVISING

AVERAGE NUMBER TASKS PERFORMED	76	44	49	126
PERCENT SUPERVISING	43%	20%	8%	57%

The following are descriptions of the jobs identified in the Radiologic career ladder. Respondents performing these jobs accounted for 93 percent of the survey sample. The remaining 7 percent were performing tasks or series of tasks which did not allow the computer to group them with members of the other jobs.

I. GENERAL RADIOLOGY CLUSTER (STG55, N=509). This is the core job of the career ladder. AFSC 903X0 personnel performing it prepare and position patients for radiographic examinations and perform the radiographic examinations. Members with this job report performing an average of 156 tasks, more tasks than members of the other jobs perform, and spend most of their time performing standard radiographic examinations. The following are typical tasks performed by members of this cluster:

- Perform foot radiographic examinations
- Perform hand radiographic examinations
- Perform knee radiographic examinations
- Perform shoulder radiographic examinations
- Perform cervical spine radiographic examinations
- Perform forearm radiographic examinations
- Perform elbow radiographic examinations
- Perform chest radiographic examinations
- Prepare and position patients for standard radiographic examinations
- Perform hip radiographic examinations

Most personnel with this job hold the 5-skill level, average almost 7 years of total active federal military service (TAFMS), are in paygrade E-4, and are assigned primarily to USAF hospitals and medical facilities.

Within this cluster, five job variations were noted. Two of the variations involve performing some advanced modality tasks, such as Computerized Tomography (CT) and Ultrasound. One involves more OJT functions, another includes both routine X-ray and superintendent tasks, while the last is performed by personnel at smaller facilities and involves both routine X-ray and administrative duties.

II. ANGIOGRAPHY JOB (STG86, N=8). The Angiography job is quite specialized and performed by only a few AFSC 903X0 personnel. Members spend their duty time performing standard and special radiographic techniques and advanced diagnostic modalities. As shown by the typical tasks performed listed below, the job involves performing mainly angiographic procedures.

- Complete radiographs during abdominal angiography
- Perform digital subtraction angiography
- Operate angiographic pressure injectors

Set up equipment and supplies for advanced radiographic procedures
Complete radiographs during cerebral angiography
Complete radiographs during renal angiography
Complete radiographs during pulmonary angiography

Most members performing this job are in paygrade E-4, hold the 5-skill level, and all are assigned to a medical center.

III. COMPUTERIZED TOMOGRAPHY (CT) JOB (STG69, N=15). AFSC 903X0 personnel with this job participate in the advanced diagnostic CT modality. Half their duty time is spent performing tasks related to this diagnostic modality. The following tasks distinguish this job from the others:

Monitor patient's condition during angiography, CT scans, or MR scans
Administer IV contrast media during CT scans
Perform brain CT enhanced scans
Perform brain CT unenhanced scans
Key patient's biographical information into CT scanner computers
Adjust computerized tomographic (CT) scanner gantries

Nine of the 15 members who perform this job hold the 5-skill level, 6 hold the 7-skill level, and they all average 8 years TAFMS.

IV. MAGNETIC RESONANCE IMAGING (MRI) JOB (STG72, N=5). MRI is the newest modality and the newest job in the career ladder. Those performing the job spend most of their time performing tasks related to MRI, as shown below:

Screen patients for metallic implants prior to MR scans
Perform MR scanner archive procedures
Perform MR unenhanced scans of designated anatomy
Prepare and position patients for MR scan procedures
Screen personnel entering MR scan room for metallic objects
Monitor patient's condition during angiography, CT scans, or MR scans

Because the job is so new, members performing it average a little over a year in the job, are in paygrade E-4, and about half are in their first enlistment. All hold the 5-skill level and are stationed at USAF medical centers.

V. ULTRASOUND JOB (STG48, N=14). This is another very specialized job in the career ladder which involves spending most duty time performing ultrasound procedures. Most AFSC 903X0 personnel performing this job hold the 5-skill level and are assigned to a medical center or major hospital. Members with this job perform an average of 76 tasks and spend the most time on the following ultrasound tasks:

- Explain ultrasonography examination preparation procedures to patients
- Perform biliary system ultrasonography
- Perform obstetric ultrasonography for ectopic pregnancies
- Perform renal ultrasonography
- Perform pancreatic ultrasonography
- Perform obstetric ultrasonography for miscarriages
- Perform aortic ultrasonography

VI. RADIOLOGIC THERAPY JOB (STG101, N=5). AFSC 903X0 personnel with the Radiologic Therapy are distinguished by the time they spend performing radiation therapy tasks. Members with the job perform an average of only 44 tasks, fewer than members with other jobs in the career ladder. Radiologic Therapy personnel are somewhat more senior, as they average 9 years TAFMS. This job is distinguished from the others by the time members spend performing the following tasks:

- Align or adjust radiation therapy equipment for patient set-ups
- Position patients for radiotherapy treatments
- Conduct linear accelerator therapy
- Annotate patient daily treatment logs
- Paint treatment areas with castellani, invisible paint, or Indian ink
- Schedule patients for radiation therapy treatments
- Establish and maintain rapport with radiotherapy

VII. INSTRUCTORS JOB (STG41, N=12). The Instructor job includes both Phase I instruction at Sheppard AFB and Phase II training at medical centers and regional hospitals. AFSC 903X0 personnel with the job average over 6 years TAFMS, most are in paygrade E-5, and hold either the 5- or 7-skill level. The following are the tasks members with the Instructor job spend the most time performing:

- Conduct formal course classroom training
- Score tests
- Administer tests
- Conduct specialized individual assistance (SIA) training

Administer student critiques
Counsel trainees on training progress
Instruct trainees on procedures for locating
technical information

VIII. SUPERINTENDENT JOB (STG45, N=37). Senior AFSC 903X0 personnel with the Superintendent job comprise 6 percent of the total sample. The title Superintendent is usually associated with 9-skill level and CEM-code personnel, but members with this job report having this job title. Members with this job spend 63 percent of their duty time performing supervisory, administrative, and quality control tasks. Most respondents with this job hold the 7-skill level, average over 17 years TAFMS, have been in the job over 15 years, and report supervising an average of 10 people. This job is distinguished from the others by the time members spend performing the following supervisory and administrative tasks:

Write Enlisted Performance Reports
Conduct staff meetings
Counsel personnel on personal or military-related
problems
Review patients' complaints
Assign personnel to duty positions
Coordinate work orders or requests with plant
management personnel

Comparison to Previous Survey

Table 5 compares the jobs identified in the present study to those identified in the 1985 OSR. Four clusters and 10 independent jobs were identified in 1984, while 1 cluster and 7 jobs were identified in the present survey. The differences are due to changes in the job inventory and task clustering procedures now used to help identify jobs performed. Overall, jobs performed by AFSC 903X0 personnel have not changed since 1984, except for the addition of the new MRI job.

ANALYSIS OF DUTY AIR FORCE SPECIALTY CODE (DAFSC) GROUPS

DAFSC group analysis allows identification of similarities and differences in duty and task performance at the various skill levels. This information may be used to evaluate how well career ladder documents, such as AFR 39-1 Specialty Descriptions and the STS, reflect what is actually being done by career ladder personnel in the field.

Table 6 displays the distribution of DAFSC group members across career ladder jobs, while Table 7 reflects relative time spent by the DAFSC groups on each duty. These data show most 5-skill level members perform the General

TABLE 5
COMPARISON OF MAJOR JOBS BETWEEN SURVEYS

<u>CURRENT SURVEY</u>	<u>1985 SURVEY</u>
GENERAL RADIOLOGY CLUSTER	GENERAL RADIOLOGIC TECHNICIANS CLUSTER SENIOR NCOIC CLUSTER STANDARD AND SPECIAL DIAGNOSTIC RADIOLOGISTS HOSPITAL PHASE II COURSE SUPERVISORS AND INSTRUCTORS SPECIAL DIAGNOSTIC RADIOGRAPHERS ADMINISTRATIVE PERSONNEL
ANGIOGRAPHY JOB	ANGIOGRAPHY TECHNICIANS
COMPUTERIZED TOMOGRAPHY JOB	ROTATING COMPUTERIZED TOMOGRAPHY TECHS COMPUTERIZED TOMOGRAPHY TECHS
MAGNETIC RESONANCE IMAGING	NOT IDENTIFIED
ULTRASOUND JOB	ULTRASOUND TECHNICIANS
RADIOLOGIC THERAPY JOB	RADIATION THERAPISTS
INSTRUCTORS JOB	PHASE I INSTRUCTORS CLUSTER
SUPERINTENDENT JOB	SMALL FACILITY SUPERVISORS CLUSTER STANDARD RADIOGRAPHERS FIRST-LINE SUPERVISORS

TABLE 6
 DISTRIBUTION OF AFSC 903X0 DAFSC GROUP MEMBERS
 ACROSS CAREER LADDER JOBS
 (PERCENT RESPONDING)

<u>JOB</u>	DAFSC 90350 (N=480)	DAFSC 90370 (N=167)	DAFSC 90399/00 (N=8)
I. GENERAL RADIOLOGY CLUSTER	82	67	0
II. ANGIOGRAPHY JOB	2	0	0
III. COMPUTERIZED TOMOGRAPHY JOB	2	4	0
IV. MAGNETIC RESONANCE IMAGING JOB	1	0	0
V. ULTRASOUND JOB	3	1	0
VI. RADIOLOGIC THERAPY JOB	1	0	0
VII. INSTRUCTOR JOB	1	4	0
VIII. SUPERINTENDENT JOB	0	17	100

TABLE 7

TIME SPENT ON DUTIES BY MEMBERS OF SKILL-LEVEL GROUPS
(RELATIVE PERCENT OF JOB TIME)

DUTIES	DAFSC 90350 (N=480)	DAFSC 90370 (N=167)	DAFSC 90399/00 (N=8)
A ORGANIZING AND PLANNING	2	10	26
B DIRECTING AND IMPLEMENTING	2	10	24
C INSPECTING AND EVALUATING	1	8	23
D TRAINING	2	6	9
E PERFORMING ADMINISTRATIVE FUNCTIONS	15	16	9
F PERFORMING QUALITY CONTROL OR QUALITY ASSURANCE FUNCTIONS	5	7	6
G PROCESSING RADIOGRAPHIC FILM	9	6	1
H PERFORMING GENERAL SERVICES	6	4	1
I PERFORMING STANDARD RADIOGRAPHIC EXAMINATIONS	33	19	*
J PERFORMING OR PARTICIPATING IN BEDSIDE AND SURGICAL RADIOGRAPHY	7	3	*
K PERFORMING OR PARTICIPATING IN SPECIAL RADIOGRAPHIC PROCEDURES	9	4	*
L PERFORMING OR PARTICIPATING IN ADVANCED DIAGNOSTIC	4	3	*
M PERFORMING ULTRASONOGRAPHY PROCEDURES MODALITIES	3	3	*
N PERFORMING RADIATION THERAPY	1	*	*

* Denotes less than 1 percent

Radiology job, 7-skill level members are first-line supervisors performing a mixture of technical and supervisory tasks, and the most senior personnel are the managers of the career ladder.

There is also a progression as far as types of procedures performed. Five-skill level personnel perform standard radiographic procedures, while 7-skill level personnel perform the more difficult radiographic procedures. Nine-skill level and CEM-code personnel perform very few technical tasks, focusing primarily on supervisory, administrative, and managerial tasks. Individual descriptions of the skill levels is presented below.

Skill-Level Descriptions

DAFSC 90350. Personnel with a 5-skill level constitute 73 percent of the survey sample. Eighty-three percent perform the General Radiology job, with smaller percentages performing all but the Superintendent job. Five-skill level members perform an average of 128 tasks, most are in paygrades E-4 and E-5, and they average 67 months TAFMS. Representative tasks performed by 5-skill level members are displayed in Table 8 and reflect their involvement in general radiologic functions.

DAFSC 90370. Seven-skill level members constitute 25 percent of the survey sample. They perform an average of 158 tasks and are found in 5 of the 8 career ladder jobs (see Table 6). The largest percentage work in the General Radiology cluster, with the next largest percentage performing the Superintendent job. While 50 percent of their total job time is spent on supervisory and administrative tasks (Duties A through E), they are still involved in technical aspects of the career ladder and have the responsibility of performing the more difficult procedures. Representative tasks 7-skill level personnel perform are displayed in Table 9, while tasks which best differentiate between the 5- and 7-skill level personnel are displayed in Table 10. The role of 7-skill level members as supervisors is clearly shown by the higher percentages of 7-skill level members performing tasks from Duties A, B, and C.

DAFSC 90399/00. These senior personnel are the managers of the Radiologic career ladder. They perform an average of 108 tasks and perform only the Superintendent job (see Table 6). They report supervising an average of 10 people and indicate that 84 percent of their duty time is spent on supervisory, managerial, and administrative duties. Representative tasks 9-skill level and CEM-code personnel perform are displayed in Table 11, and tasks which best differentiate this group from 7-skill levels are displayed in Table 12. Figures on the top half of the table show a higher percentage of these senior personnel perform supervisory and administrative tasks, and figures on the bottom show they perform virtually no general radiographic tasks.

Summary

AFSC 903X0 personnel follow an orderly skill-level progression. The 5-skill level personnel perform the basic radiologic tasks, 7-skill level personnel have a broader job, with increased supervisory and administrative

TABLE 8
 REPRESENTATIVE TASKS PERFORMED BY
 DAFSC 90350 PERSONNEL
 (N=480)

TASKS	PERCENT MEMBERS PERFORMING
I304 PERFORM CHEST RADIOGRAPHIC EXAMINATIONS	85
I297 PERFORM ABDOMINAL RADIOGRAPHIC EXAMINATIONS	85
I318 PERFORM KNEE RADIOGRAPHIC EXAMINATIONS	84
I340 PERFORM SHOULDER RADIOGRAPHIC EXAMINATIONS	84
G263 PROCESS RADIOGRAPHIC FILM AUTOMATICALLY	84
I312 PERFORM FOOT RADIOGRAPHIC EXAMINATIONS	84
I314 PERFORM HAND RADIOGRAPHIC EXAMINATIONS	84
I303 PERFORM CERVICAL SPINE RADIOGRAPHIC EXAMINATIONS	84
I313 PERFORM FOREARM RADIOGRAPHIC EXAMINATIONS	84
I315 PERFORM HIP RADIOGRAPHIC EXAMINATIONS	84
I299 PERFORM ANKLE RADIOGRAPHIC EXAMINATIONS	83
I321 PERFORM LUMBAR SPINE RADIOGRAPHIC EXAMINATIONS	83
I307 PERFORM ELBOW RADIOGRAPHIC EXAMINATIONS	83
I350 PREPARE AND POSITION PATIENTS FOR STANDARD RADIOGRAPHIC EXAMINATIONS	83
I311 PERFORM FINGER RADIOGRAPHIC EXAMINATIONS	83
I348 PERFORM WRIST RADIOGRAPHIC EXAMINATIONS	83
I320 PERFORM LOWER LEG RADIOGRAPHIC EXAMINATIONS	83
I346 PERFORM THORACIC SPINE RADIOGRAPHIC EXAMINATIONS	83
I334 PERFORM RIB RADIOGRAPHIC EXAMINATIONS	83
I347 PERFORM TOE RADIOGRAPHIC EXAMINATIONS	83
I331 PERFORM PELVIC RADIOGRAPHIC EXAMINATIONS	83
I351 SET UP EQUIPMENT AND SUPPLIES FOR STANDARD RADIOGRAPHIC EXAMINATIONS	82
I309 PERFORM FEMUR RADIOGRAPHIC EXAMINATIONS	82
I342 PERFORM SKULL RADIOGRAPHIC EXAMINATIONS WITHOUT HEAD UNITS	81
I305 PERFORM CLAVICAL RADIOGRAPHIC EXAMINATIONS	81
I301 PERFORM CALCANEUS (OS CALCIS) RADIOGRAPHIC EXAMINATIONS	81
I333 PERFORM RADIOGRAPHIC SOFT TISSUE STUDIES	81
I316 PERFORM HUMERUS RADIOGRAPHIC EXAMINATIONS	81
I306 PERFORM COCCYX RADIOGRAPHIC EXAMINATIONS	81
I329 PERFORM PARANASAL SINUS RADIOGRAPHIC EXAMINATIONS	81

TABLE 9

REPRESENTATIVE TASKS PERFORMED BY
DAFSC 90370 PERSONNEL
(N=167)

TASKS	PERCENT MEMBERS PERFORMING
G263 PROCESS RADIOGRAPHIC FILM AUTOMATICALLY	77
C90 WRITE EPRs	76
B38 COUNSEL PERSONNEL ON PERSONAL OR MILITARY-RELATED PROBLEMS	75
I297 PERFORM ABDOMINAL RADIOGRAPHIC EXAMINATIONS	74
E168 LOG PATIENTS' VISIT DATA IN COMPUTERS	74
I311 PERFORM FINGER RADIOGRAPHIC EXAMINATIONS	74
I314 PERFORM HAND RADIOGRAPHIC EXAMINATIONS	74
I295 DETERMINE EXPOSURE FACTORS USING STANDARDIZED RADIOGRAPHIC TECHNIQUE CHARTS OR AUTOMATIC EXPOSURE SYSTEMS	74
I318 PERFORM KNEE RADIOGRAPHIC EXAMINATIONS	74
I340 PERFORM SHOULDER RADIOGRAPHIC EXAMINATIONS	74
I304 PERFORM CHEST RADIOGRAPHIC EXAMINATIONS	73
I350 PREPARE AND POSITION PATIENTS FOR STANDARD RADIOGRAPHIC EXAMINATIONS	73
E149 COMPLETE MONTHLY PERSONAL TIMESHEETS	73
I312 PERFORM FOOT RADIOGRAPHIC EXAMINATIONS	73
I299 PERFORM ANKLE RADIOGRAPHIC EXAMINATIONS	73
I307 PERFORM ELBOW RADIOGRAPHIC EXAMINATIONS	73
I351 SET UP EQUIPMENT AND SUPPLIES FOR STANDARD RADIOGRAPHIC EXAMINATIONS	72
I347 PERFORM TOE RADIOGRAPHIC EXAMINATIONS	72
I303 PERFORM CERVICAL SPINE RADIOGRAPHIC EXAMINATIONS	72
I313 PERFORM FOREARM RADIOGRAPHIC EXAMINATIONS	72
I305 PERFORM CLAVICAL RADIOGRAPHIC EXAMINATIONS	72
I315 PERFORM HIP RADIOGRAPHIC EXAMINATIONS	72
I334 PERFORM RIB RADIOGRAPHIC EXAMINATIONS	72
I301 PERFORM CALCANEUS (OS CALCIS) RADIOGRAPHIC EXAMINATIONS	72
I308 PERFORM FACIAL BONE RADIOGRAPHIC EXAMINATIONS	72
I325 PERFORM NASAL BONE RADIOGRAPHIC EXAMINATIONS	72
I306 PERFORM COCCYX RADIOGRAPHIC EXAMINATIONS	72
I329 PERFORM PARANASAL SINUS RADIOGRAPHIC EXAMINATIONS	71
C66 CONDUCT PERFORMANCE FEEDBACK WORKSHEET (PFW) SESSIONS	71
I348 PERFORM WRIST RADIOGRAPHIC EXAMINATIONS	71

TABLE 10

REPRESENTATIVE TASK DIFFERENCES BETWEEN DAFSC 90350
AND DAFSC 90370 PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS	DAFSC 90350 (N=480)	DAFSC 90370 (N=167)	DIFFERENCE
C66 CONDUCT PERFORMANCE FEEDBACK WORKSHEET (PFW) SESSIONS	16	71	-55
C90 WRITE EPRs	22	76	-54
B38 COUNSEL PERSONNEL ON PERSONAL OR MILITARY-RELATED PROBLEMS	22	75	-53
C88 REVIEW PATIENTS' COMPLAINTS	7	59	-52
A14 ESTABLISH ORGANIZATIONAL POLICIES, LOCAL OPERATING INSTRUCTIONS (OIS), OR STANDING OPERATING PROCEDURES (SOPS)	10	61	-51
A33 WRITE JUSTIFICATIONS FOR EQUIPMENT	10	60	-50
B37 COORDINATE MAINTENANCE OF RADIOLOGY DEPARTMENT EQUIPMENT, SUCH AS ULTRASOUND, X-RAY, OR RADIOTHERAPY EQUIPMENT	16	65	-49

K375 COMPLETE RADIOGRAPHS DURING BARIUM ENEMAS	67	39	28
K418 PREPARE AND POSITION PATIENTS FOR SPECIAL RADIOGRAPHIC PROCEDURES	61	34	28
K400 COMPLETE RADIOGRAPHS DURING SMALL BOWEL SERIES	63	36	27
J355 COMPLETE RADIOGRAPHS IN NURSERIES	62	35	27
K419 SET UP EQUIPMENT AND SUPPLIES FOR SPECIAL RADIOGRAPHIC PROCEDURES	63	37	26
K372 COMPLETE RADIOGRAPHS DURING AIR CONTRAST ENEMAS	61	35	26
K376 COMPLETE RADIOGRAPHS DURING BARIUM SWALLOW EXAMINATIONS	63	37	26

TABLE 11
 REPRESENTATIVE TASKS PERFORMED BY
 DAFSC 90399/00 PERSONNEL
 (N=8)

TASKS	PERCENT MEMBERS PERFORMING
E195 WRITE CORRESPONDENCE	100
A15 ESTABLISH WORK PRIORITIES	100
A14 ESTABLISH ORGANIZATIONAL POLICIES, LOCAL OPERATING INSTRUCTIONS (OIS), OR STANDING OPERATING PROCEDURES (SOPs)	100
B57 REVISE ORGANIZATIONAL POLICIES, OIs, OR SOPs	100
B43 EDIT OR REVIEW CORRESPONDENCE	100
B60 SUPERVISE RADIOLOGIC TECHNICIANS (AFSC 90370)	100
C86 REVIEW EPRs	100
C65 ANALYZE WORKLOAD REQUIREMENTS	100
B38 COUNSEL PERSONNEL ON PERSONAL OR MILITARY-RELATED PROBLEMS	100
B36 CONDUCT STAFF MEETINGS	100
A8 DETERMINE REQUIREMENTS FOR SPACE, PERSONNEL, EQUIPMENT, OR SUPPLIES	100
C90 WRITE EPRs	100
B53 INTERPRET POLICIES, DIRECTIVES, OR PROCEDURES FOR SUBORDINATES	100
C78 EVALUATE SUBORDINATES' COMPLIANCE WITH WORK STANDARDS	100
C72 EVALUATE MAINTENANCE OR USE OF WORKSPACE, EQUIPMENT, OR SUPPLIES	100
B44 IMPLEMENT COST-REDUCTION PROGRAMS	100
B52 INITIATE PERSONNEL ACTION REQUESTS, SUCH AS SKILL UPGRADE ACTIONS OR DUTY TITLE CHANGES	100
A10 DEVELOP PERFORMANCE STANDARDS FOR SUBORDINATES	100
B41 DIRECT MAINTENANCE OR UTILIZATION OF EQUIPMENT OR SUPPLIES	100
C74 EVALUATE PERSONNEL FOR PROMOTION, DEMOTION, OR RECLASSIFICATION	100
A18 MAINTAIN PERSONNEL STAFFING REPORTS	100
A13 DRAFT BUDGET AND FINANCIAL REQUIREMENTS	100
A1 ASSIGN PERSONNEL TO DUTY POSITIONS	100
A11 DEVELOP RADIOLOGY DEPARTMENT OR SECTION GOALS AND OBJECTIVES	100
A27 PREPARE BRIEFINGS	100
B34 BRIEF PERSONNEL ON MEDICAL FACILITY OPERATIONS	100
A7 COORDINATE WORK ORDERS OR REQUESTS WITH PLANT MANAGEMENT PERSONNEL	100
B55 ORIENT NEWLY ASSIGNED PERSONNEL	100
B40 DIRECT MAINTENANCE OF ADMINISTRATIVE FILES	100
A9 DEVELOP ORGANIZATIONAL CHARTS	100

TABLE 12

REPRESENTATIVE TASK DIFFERENCES BETWEEN DAFSC 90399/00
AND DAFSC 90370 PERSONNEL
(PERCENT MEMBERS PERFORMING)

<u>TASKS</u>	<u>DAFSC 90399/00 (N=8)</u>	<u>DAFSC 90370 (N=167)</u>	<u>DIFFERENCE</u>
B64 WRITE REPLIES TO CONGRESSIONAL OR ADMINISTRATIVE INQUIRIES	88	16	71
A9 DEVELOP ORGANIZATIONAL CHARTS	100	30	70
B44 IMPLEMENT COST-REDUCTION PROGRAMS	100	32	68
A18 MAINTAIN PERSONNEL STAFFING REPORTS	100	33	67
B60 SUPERVISE RADIOLOGIC TECHNICIANS (AFSC 90370)	100	37	63
C86 REVIEW EPRs	100	41	59

I295 DETERMINE EXPOSURE FACTORS USING STANDARDIZED RADIOGRAPHIC TECHNIQUE CHARTS OR AUTOMATIC EXPOSURE SYSTEMS	0	74	-74
I311 PERFORM FINGER RADIOGRAPHIC EXAMINATIONS	0	74	-74
I314 PERFORM HAND RADIOGRAPHIC EXAMINATIONS	0	74	-74
I318 PERFORM KNEE RADIOGRAPHIC EXAMINATIONS	0	74	-74
I340 PERFORM SHOULDER RADIOGRAPHIC EXAMINATIONS	0	74	-74
I297 PERFORM ABDOMINAL RADIOGRAPHIC EXAMINATIONS	0	74	-74

responsibilities. The 9-skill level and CEM-personnel are almost exclusively involved in management responsibilities and perform very few technical tasks.

ANALYSIS OF AFR 39-1 SPECIALTY DESCRIPTION

Survey data were compared to the AFR 39-1 Specialty Descriptions for Radiologic Specialists, Technicians, and Superintendents (all dated 30 April 1991). The descriptions for all skill levels are accurate in describing the overall jobs and tasks performed by members at each skill level in this career ladder. The 5- and 7-skill level descriptions overlap greatly, with the 7-skill level description adding the performance of special techniques, administrative functions, and enforcing health protective measures.

TRAINING ANALYSIS

Occupational survey data are a source of information which can be used to assist in the development of relevant training programs for entry-level personnel. Factors used to evaluate entry-level Radiographic training include jobs being performed by first-enlistment personnel, overall distribution of first-enlistment personnel across career ladder jobs, percent first-job (1-24 month TAFMS) and first-enlistment (1-48 months TAFMS) members performing specific tasks or using specific equipment items, and TE and TD ratings (previously explained in the SURVEY METHODOLOGY section).

First-Enlistment AFSC 903X0 Personnel

There were 191 first-enlistment Radiologic personnel in the sample (3-skill level's members omitted). The distribution across career ladder jobs is illustrated in Table 4 and in Figure 2. Most perform the General Radiography job, with small percentages working in the specialized Angiography, CT, and MRI jobs. Representative tasks first-enlistment AFSC 903X0 personnel perform are listed in Table 13 and deal almost exclusively with general radiographic procedures. Equipment items used by more than 30 percent of first-enlistment personnel are listed in Table 14.

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 judgments of senior Radiologic career ladder NCOs working in the field, were collected to provide training personnel with a rank-ordering of tasks considered important for individuals being trained (TE), along with a measure of the difficulty of those tasks (TD). When combined with data on the percentages of first-enlistment personnel performing

DISTRIBUTION OF FIRST-ENLISTMENT AFSC 903X0

PERSONNEL ACROSS CAREER LADDER JOBS

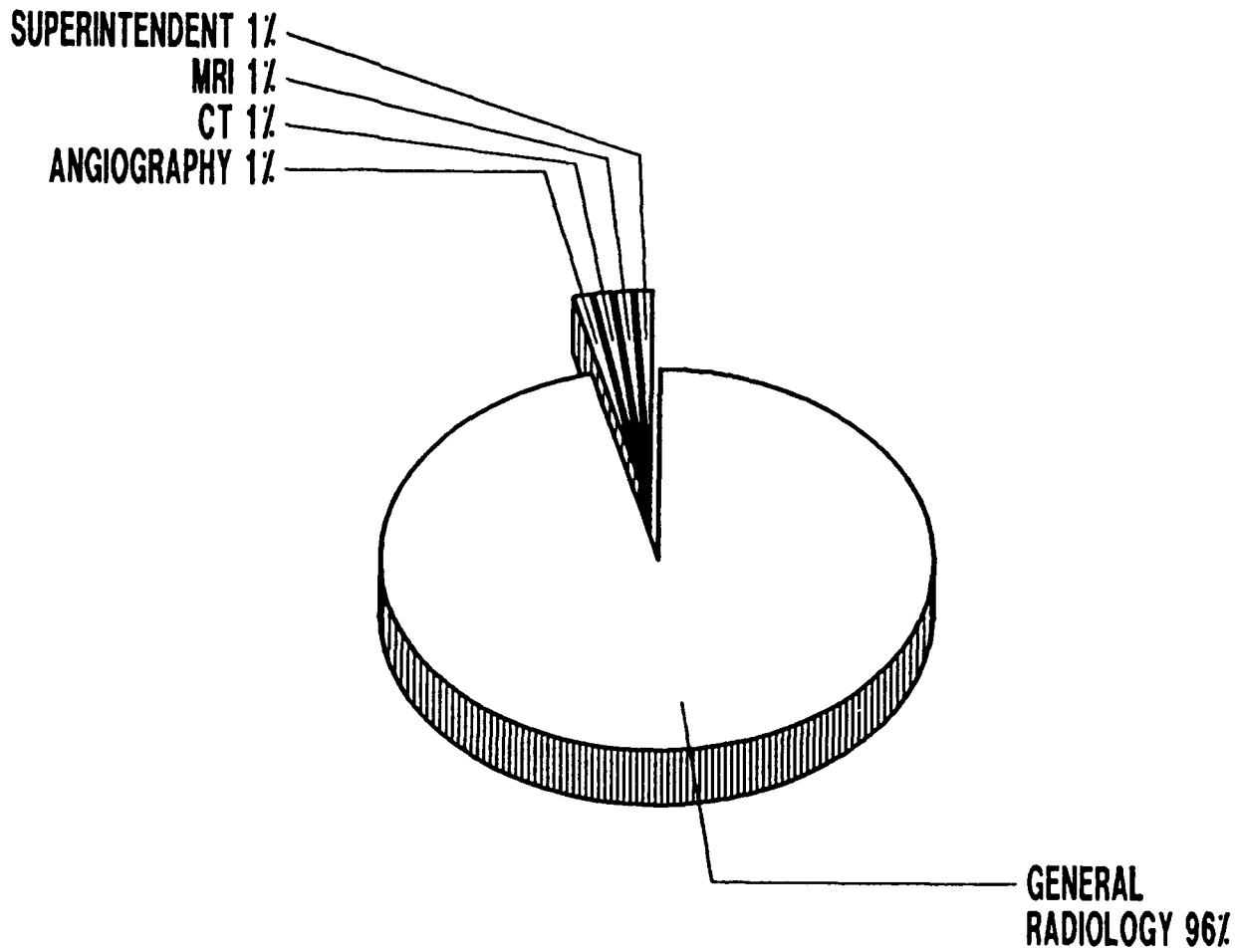


FIGURE 2

TABLE 13
 REPRESENTATIVE TASKS PERFORMED BY
 FIRST-ENLISTMENT AFSC 903X0 PERSONNEL
 (N=191)

<u>TASKS</u>	<u>PERCENT MEMBERS PERFORMING</u>
I304 PERFORM CHEST RADIOGRAPHIC EXAMINATIONS	93
I312 PERFORM FOOT RADIOGRAPHIC EXAMINATIONS	93
I314 PERFORM HAND RADIOGRAPHIC EXAMINATIONS	93
I350 PREPARE AND POSITION PATIENTS FOR STANDARD RADIOGRAPHIC EXAMINATIONS	92
I297 PERFORM ABDOMINAL RADIOGRAPHIC EXAMINATIONS	92
I315 PERFORM HIP RADIOGRAPHIC EXAMINATIONS	92
I299 PERFORM ANKLE RADIOGRAPHIC EXAMINATIONS	92
I348 PERFORM WRIST RADIOGRAPHIC EXAMINATIONS	92
I311 PERFORM FINGER RADIOGRAPHIC EXAMINATIONS	92
I303 PERFORM CERVICAL SPINE RADIOGRAPHIC EXAMINATIONS	92
I321 PERFORM LUMBAR SPINE RADIOGRAPHIC EXAMINATIONS	92
I340 PERFORM SHOULDER RADIOGRAPHIC EXAMINATIONS	92
I313 PERFORM FOREARM RADIOGRAPHIC EXAMINATIONS	92
I347 PERFORM TOE RADIOGRAPHIC EXAMINATIONS	92
I318 PERFORM KNEE RADIOGRAPHIC EXAMINATIONS	91
I351 SET UP EQUIPMENT AND SUPPLIES FOR STANDARD RADIOGRAPHIC EXAMINATIONS	91
I307 PERFORM ELBOW RADIOGRAPHIC EXAMINATIONS	91
I346 PERFORM THORACIC SPINE RADIOGRAPHIC EXAMINATIONS	91
I320 PERFORM LOWER LEG RADIOGRAPHIC EXAMINATIONS	90
I333 PERFORM RADIOGRAPHIC SOFT TISSUE STUDIES	90
I331 PERFORM PELVIC RADIOGRAPHIC EXAMINATIONS	90
I334 PERFORM RIB RADIOGRAPHIC EXAMINATIONS	90
I305 PERFORM CLAVICAL RADIOGRAPHIC EXAMINATIONS	90
I342 PERFORM SKULL RADIOGRAPHIC EXAMINATIONS WITHOUT HEAD UNITS	89
I301 PERFORM CALCANEUS (OS CALCIS) RADIOGRAPHIC EXAMINATIONS	88
I329 PERFORM PARANASAL SINUS RADIOGRAPHIC EXAMINATIONS	88
I309 PERFORM FEMUR RADIOGRAPHIC EXAMINATIONS	88
I308 PERFORM FACIAL BONE RADIOGRAPHIC EXAMINATIONS	88
G263 PROCESS RADIOGRAPHIC FILM AUTOMATICALLY	87
I330 PERFORM PATELLA RADIOGRAPHIC EXAMINATIONS	87

TABLE 14
EQUIPMENT USED BY 30 PERCENT OR MORE OF
FIRST-ENLISTMENT PERSONNEL
(PERCENT RESPONDING)

<u>EQUIPMENT</u>	<u>1ST ENL (N=191)</u>
FILM PROCESSING UNITS, AUTOMATIC	85
GRID CASSETTES	81
UPRIGHT BUCKYS	81
RADIOGRAPHIC FILM COPIERS	68
STATIONARY GRIDS	64
SCANOGRAM RULERS	60
CAMERAS, RADIOGRAPHIC IDENTIFICATION	60
DENSITOMETER	59
PEDIATRIC IMMOBILIZER	59
FIXED FLUROSCOPIC UNITS, IMAGE INTENSIFIER-TV MONITOR	58
SENSITOMETERS	54
HOSPITAL PATIENT BEDS	50
X-RAY UNITS, PORTABLE FIELD	45
DOSIMETRY EQUIPMENT, THERMOLUMINESCENT	38
CAMERAS, 105mm	35
AUTOMATIC CHEST UNITS	32
MAMMOGRAPHIC UNITS	32

tasks, comparisons can be made to determine if training adjustments are necessary. For example, tasks receiving high ratings on both task factors, accompanied by moderate to high percentages of members performing, may warrant formalized resident training. Those tasks receiving high task factor ratings, but low percentages performing, may be more appropriately planned for OJT programs. Low task factor ratings may highlight tasks best omitted from training for first-enlistment personnel, but this decision must be weighed against percentages of personnel performing the tasks, command concerns, and criticality.

To help in this determination an additional factor, the Automated Training Indicator (ATI) was computed for each task in the inventory. This factor assists school personnel in making training decisions. A computer program uses the percent of first-enlistment members performing each task, TE and TD ratings, and the Course Training Decision Table found in Air Training Command Regulation (ATCR) 52-22, Atch 1, to assign an ATI value to each task in the inventory. ATIs range from 1 to 18 and suggest what tasks are most appropriate for training and to what level. The decision table and explanation of the ATIs precede the listing of tasks in descending ATI order in the Training Extract. School personnel will find this table and listing valuable for making decisions about training documents.

A sample of tasks with the highest TE ratings, with accompanying percent first-job (1-24 months TAFMS) and first-enlistment (1-48 months TAFMS) members performing, are listed in Table 15. As expected, tasks with the highest TE ratings deal with performing standard radiographic examinations. These tasks are performed by high percentages of criterion group members, but do not have high TD.

Most tasks with the highest TD ratings, on the other hand, deal with ultrasound, radiation therapy, and advanced modality procedures. These tasks, along with percent first-enlistment and 5- and 7-skill level members performing data, are listed in Table 16. All are performed by very low percentages of criteria group members and most have low TE.

Various listings 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 ratings, refer to Task Factor Administration in the SURVEY ADMINISTRATION section of this report.

STS

To assist specifically in the evaluation of the AFSC 903X0 STS, technical school personnel from Sheppard Training Center matched job inventory tasks to appropriate sections and subsections of the STS. A complete computer listing displaying the STS elements, the matched tasks, the percent members performing tasks, TE and TD ratings, and ATI for each task, has been sent to the technical school for their use in further reviews of training documents. STS paragraphs containing general knowledge information, subject-matter-knowledge-only requirements, or basic supervisory responsibilities were not examined. Task knowledge and performance elements of the STS were compared against the

TABLE 15

SAMPLE OF TASKS WITH HIGHEST TE RATINGS

TASKS	TNG EMPH	PERCENT MEMBERS PERFORMING		TASK DIFF
		1ST JOB N=74	1ST ENL N=191	
I295 DETERMINE EXPOSURE FACTORS USING STANDARDIZED RADIOGRAPHIC TECHNIQUE CHARTS OR AUTOMATIC EXPOSURE SYSTEMS	7.50	78	83	4.34
I332 PERFORM RADIATION PROTECTION PROCEDURES WHEN USING RADIOGRAPHIC EQUIPMENT	7.24	73	83	3.89
I297 PERFORM ABDOMINAL RADIOGRAPHIC EXAMINATIONS	7.15	86	92	3.99
I342 PERFORM SKULL RADIOGRAPHIC EXAMINATIONS WITHOUT HEAD UNITS	7.11	82	89	4.75
I350 PREPARE AND POSITION PATIENTS FOR STANDARD RADIOGRAPHIC EXAMINATIONS	7.11	88	92	4.03
I308 PERFORM FACIAL BONE RADIOGRAPHIC EXAMINATIONS	7.02	84	88	5.07
I303 PERFORM CERVICAL SPINE RADIOGRAPHIC EXAMINATIONS	7.00	88	92	4.92
J356 COMPLETE RADIOGRAPHS IN OPERATING ROOMS	6.98	70	73	5.88
I304 PERFORM CHEST RADIOGRAPHIC EXAMINATIONS	6.93	89	93	3.38
I329 PERFORM PARANASAL SINUS RADIOGRAPHIC EXAMINATIONS	6.89	81	88	4.38
K410 IDENTIFY PATIENTS' REACTIONS TO CONTRAST MEDIA	6.89	39	44	5.49
I299 PERFORM ANKLE RADIOGRAPHIC EXAMINATIONS	6.80	88	92	3.51
F217 IDENTIFY FILM QUALITY PROBLEMS, SUCH AS IMPROPER POSITIONING OR RADIOGRAPHIC TECHNIQUES	6.76	51	52	5.16
I298 PERFORM ACROMIO CLAVICULAR (A-C) JOINT RADIOGRAPHIC EXAMINATIONS	6.76	80	86	4.17
I334 PERFORM RIB RADIOGRAPHIC EXAMINATIONS	6.76	86	90	4.75
K372 COMPLETE RADIOGRAPHS DURING AIR CONTRAST ENEMAS	6.76	61	65	5.34
I322 PERFORM MANDIBLE RADIOGRAPHIC EXAMINATIONS	6.74	68	79	5.05
I346 PERFORM THORACIC SPINE RADIOGRAPHIC EXAMINATIONS	6.74	85	91	4.51
I337 PERFORM SCAPULA RADIOGRAPHIC EXAMINATIONS	6.72	78	85	5.03
J366 PERFORM RADIATION PROTECTION PROCEDURES WHEN USING PORTABLE RADIOGRAPHIC EQUIPMENT	6.67	58	65	4.45

TE Mean = 2.70 S.D. = 1.97

TD Mean = 5.00 S.D. = 1.00

TABLE 16

SAMPLE OF TASKS WITH HIGHEST TD RATINGS

TASKS	TASK DIFF	PERCENT MEMBERS PERFORMING			TNG EMPH
		1ST ENL (N=191)	90350 (N=480)	90370 (N=167)	
3552 PERFORM ULTRASOUND-GUIDED FETAL TRANSFUSIONS	7.04	1	1	1	1.24
M513 PERFORM CRANIAL SHUNT ULTRASONOGRAPHY	6.91	1	1	1	1.59
M553 PERFORM ULTRASOUND-GUIDED NEEDLE BIOPSY OR DRAINAGE, OTHER THAN AMNIOCENTESIS	6.91	1	4	7	1.46
M512 PERFORM COLOR DOPPLER ULTRASONOGRAPHY	6.90	2	4	4	1.63
M526 PERFORM INTRAOPERATIVE ULTRASONOGRAPHY	6.86	1	1	1	1.59
D136 WRITE CAREER DEVELOPMENT COURSE (CDC) MATERIALS	6.85	1	0	2	.35
L436 COMPLETE RADIOGRAPHS DURING CEREBRAL ANGIOGRAPHY	6.82	3	3	2	2.61
L435 COMPLETE RADIOGRAPHS DURING CARDIAC CATHETERIZATIONS	6.78	1	1	1	2.26
M517 PERFORM ECHOCARDIOGRAPHY FOR PERICARDIAL EFFUSION	6.76	1	1	1	1.22
L488 PERFORM THREE-DIMENSIONAL RECONSTRUCTION OF CT SCAN IMAGES	6.74	3	4	4	1.46
M533 PERFORM OPHTHALMIC ULTRASONOGRAPHY FOR RETINAL DETACHMENTS	6.71	1	1	1	1.28
M551 PERFORM ULTRASOUND-GUIDED AMNIOCENTESIS	6.64	1	2	6	1.74
N572 CONDUCT LINEAR ACCELERATOR THERAPY	6.64	1	1	1	.93
M530 PERFORM OBSTETRIC ULTRASONOGRAPHY FOR ECTOPIC PREGNANCIES	6.63	4	9	17	2.17
D108 DEVELOP COURSE CURRICULA, PLANS OF INSTRUCTION (POIS), LESSON PLANS, OR SPECIALTY TRAINING STANDARDS (STSS)	6.59	1	3	15	.39
A22 PLAN QUALITY ASSURANCE PROGRAMS	6.58	7	10	50	2.07

TD Mean = 5.00 S.D. = 1.00

TE Mean = 2.70 S.D. = 1.97

standards set forth in AFR 8-13/ATC Supplement 1 (Attachment 1, paragraph A1-3c(4), and APCR 52-22. Any element with matched tasks performed by 20 percent of first-job (1-24 months TAFMS), first-enlistment (1-48 months TAFMS), 5-skill level, or 7-skill level members is considered to be supported and should be part of the STS.

Survey data support a majority of the paragraphs and subparagraphs in the STS. Specifically, 58 of the 63 paragraphs or subparagraphs matched to survey data had tasks performed by 20 percent or more of criterion group members. The five areas that were not supported should be reviewed to determine if they should be included in the STS. The five unsupported STS elements with survey data are shown in Table 17.

There were 126 technical tasks performed by 20 percent or more of the criterion groups and rated high in TE not matched to any paragraph or subparagraph of the STS. Examples of these not matched STS items are shown in Table 18. These tasks deal with general radiographic procedures and should be reviewed to determine if they suggest topics that need to be included in the STS.

POI

Technical school subject-matter experts also matched tasks to the J3ABR90330-000, Radiologic, POI (dated 16 November 1988). Standards set forth in APCR 52-22, Attachment 1, dated 17 February 1989, were used to evaluate learning objectives with tasks matched. Any objective with matched tasks performed by 30 percent or more of first-job or first-enlistment members is considered to be supported by survey data. Learning objectives which do not meet these criteria should be considered for elimination from the formal course, if not justified on some other acceptable basis.

Even though the POI is basically a theory-centered course, 14 of the 103 learning objectives are not supported by OSR data. A sample of the unsupported learning objectives with survey data are presented in Table 19.

Twenty-six tasks not matched to any block or unit of instruction had at least 30 percent members of the criterion groups performing. A sample of these tasks is presented in Table 20. Several deal with forms and administrative procedures, while others deal with standard radiographic procedures. SMEs should carefully review these tasks to determine if they suggest topics that should be included in structured training.

JOB SATISFACTION

An examination of the job satisfaction indicators for various groups gives career ladder managers a better understanding of some of the factors which may impact on job performance of personnel in the career ladder.

TABLE 17

EXAMPLES OF AFSC 903X0 STS ELEMENTS NOT SUPPORTED BY OSR DATA
(LESS THAN 20 PERCENT MEMBERS PERFORMING)

STS ELEMENT	TNG EMPH	PERCENT MEMBERS PERFORMING				TASK DIFF
		1ST JOB	1ST ENL	5- LVL	7- LVL	
11H. PERFORM FILM REPRODUCTION						
L494 PROCESS IMAGES USING FILM SUBTRACTION TECHNIQUES	1.80	1	4	4	2	5.80
13B(3). RESPIRATORY						
K377 COMPLETE RADIOGRAPHS DURING BRONCHOGRAPHY	3.39	4	5	5	2	5.42
13B(4). CARDIOVASCULAR						
L409 COMPLETE RADIOGRAPHS DURING LYMPHANGIOGRAPHY	1.93	1	1	2	0	6.15
13B(8). ENDOCRINE						
K371 COMPLETE ENDOSCOPICRETROGRADECYSTOPANCREOSCOPY (ERCP) RADIOGRAPHS AND FLUOROSCOPY	2.87	15	18	14	8	5.58
15C(10). OPERATE EQUIPMENT AND ASSIST IN PERFORMING XERORADIOGRAPHY						
I349 PERFORM XEROGRAPHIC SOFT TISSUE STUDIES	3.07	11	13	11	7	4.91
K409 COMPLETE XERORADIOGRAPHIC MAMMOGRAMS	2.61	3	3	4	0	5.63

TE Mean = 2.70 S.D. = 1.97
TD Mean = 5.00 S. D. = 1.00

TABLE 18

EXAMPLES OF TASKS PERFORMED BY 20 PERCENT OR MORE AFSC 903X0
GROUP MEMBERS AND NOT REFERENCED TO THE STS

TASKS	TNG EMPH	PERCENT MEMBERS PERFORMING					TASK DIFF
		1ST JOB	1ST ENL	5- LVL	7- LVL		
H278 DISINFECT RADIOGRAPHIC EQUIPMENT, INSTRUMENTS, OR SUPPLIES	5.07	76	74	69	57	3.34	
H282 MONITOR PATIENTS' CONDITION DURING STANDARD DIAGNOSTIC EXAMINATIONS	5.48	76	75	69	57	4.16	
H285 PERFORM INFECTION CONTROL PROCEDURES	5.80	41	55	58	60	4.09	
I326 PERFORM NONSTANDARD OR ADDITIONAL ORTHOPEDIC PROJECTIONS	5.93	73	77	69	60	5.32	
I327 PERFORM NONSTANDARD RADIOGRAPHIC PROJECTIONS	5.72	51	60	57	50	5.38	
I333 PERFORM RADIOGRAPHIC SOFT TISSUE STUDIES	6.11	84	90	81	69	3.97	
I350 PREPARE AND POSITION PATIENTS FOR STANDARD RADIOGRAPHIC EXAMINATIONS	7.11	88	92	83	73	4.03	
I351 SET UP EQUIPMENT AND SUPPLIES FOR STANDARD RADIOGRAPHIC EXAMINATIONS	6.59	88	91	82	72	3.84	
J365 PERFORM OPERATING ROOM STERILE PROCEDURES	6.39	57	57	50	30	4.95	
K382 COMPLETE RADIOGRAPHS DURING FOREIGN BODY LOCALIZATION STUDIES	5.13	50	52	48	36	4.76	
K414 PARTICIPATE IN TAKING SPOT FILMS DURING FLUOROSCOPIC EXAMINATIONS	4.76	57	57	51	29	4.72	
K419 SET UP EQUIPMENT AND SUPPLIES FOR SPECIAL RADIOGRAPHIC PROCEDURES	5.54	68	72	63	37	5.31	

TE Mean = 2.70 S. D. = 1.97
TD Mean = 5.00 S. D. = 1.00

TABLE 19

EXAMPLES OF UNSUPPORTED ABR90330 POI LEARNING OBJECTIVES

<u>STS ELEMENT</u>	<u>TNG</u>	<u>EMPH</u>	<u>ATI</u>	<u>PERCENT MEMBERS PERFORMING</u>		<u>TASK DIFF</u>
				<u>1ST JOB</u>	<u>1ST ENL</u>	
III 2A. WITHOUT REFERENCE, IDENTIFY CHARACTERISTICS OF RADIOGRAPHIC FILM WITH NO MORE THAN THREE ERRORS.						
G252 IDENTIFY RADIOGRAPHIC FILM TYPES	4.00	7	23	25		4.04
III 4A. WITHOUT REFERENCE, IDENTIFY PRINCIPLES OF FILM PROCESSING, WITH NO MORE THAN THREE ERRORS.						
G272 TROUBLESHOOT AUTOMATIC FILM PROCESSING MACHINES	4.70	11	15	18		5.54
III 11A. WITHOUT REFERENCE, IDENTIFY OPERATING PRINCIPLES OF METERS, TIMERS, AND CONTROLLING COMPONENTS USED IN X-RAY MACHINES, WITH NO MORE THAN THREE ERRORS.						
F202 CONDUCT EXPOSURE TIMER TESTS	3.93	7	4	7		4.80
VIII 5A. WITHOUT REFERENCE, IDENTIFY FUNCTIONAL RELATIONSHIP OF STRUCTURE OF THE RESPIRATORY SYSTEMS, WITH NO MORE THAN THREE ERRORS.						
K377 COMPLETE RADIOGRAPHS DURING BRONCHOGRAPHY	3.39	7	4	5		5.42
VIII 10A. WITHOUT REFERENCE, IDENTIFY FUNCTIONS AND STRUCTURES OF THE NERVOUS SYSTEM, WITH NO MORE THAN THREE ERRORS.						
K389 COMPLETE RADIOGRAPHS DURING MYELOGRAPHY	5.37	11	27	25		5.84

Mean TE = 2.70 S.D. = 1.97
 Mean TD = 5.00 S.D. = 1.00

TABLE 20

EXAMPLES OF TECHNICAL TASKS PERFORMED BY 30 PERCENT OR MORE AFSC 903X0 RESPONDENTS AND NOT MATCHED TO POI OBJECTIVES

TASKS	TNG EMPH	ATI	PERCENT MEMBERS PERFORMING		TASK DIFF
			1ST JOB (N=74)	1ST ENL (N=191)	
E168 LOG PATIENTS' VISIT DATA IN COMPUTERS	4.67	18	73	75	3.57
E193 SCHEDULE PATIENTS FOR DIAGNOSTIC IMAGING PROCEDURES	5.50	18	54	64	4.33
H282 MONITOR PATIENTS' CONDITION DURING STANDARD DIAGNOSTIC EXAMINATIONS	5.48	18	76	75	4.16
I300 PERFORM BONE AGE STUDIES	6.33	18	80	83	3.49
I319 PERFORM LONG BONE STUDIES	6.13	18	68	76	4.49
I333 PERFORM RADIOGRAPHIC SOFT TISSUE STUDIES	6.11	18	84	90	3.97
I343 PERFORM STERNOCLAVICULAR ARTICULATION (S-C JOINTS) RADIOGRAPHIC EXAMINATIONS	6.04	18	57	71	4.69
J367 PRODUCE FLUOROSCOPIC OR RADIOGRAPHIC IMAGES USING PORTABLE C-ARM UNITS	6.22	18	43	52	5.64
K382 COMPLETE RADIOGRAPHS DURING FOREIGN BODY LOCALIZATION STUDIES	5.13	18	50	52	4.76
E179 MATCH RADIOGRAPHIC FILMS TO RADIOGRAPHIC CONSULTATION REQUESTS FOR DOCTORS' REVIEWS	4.46	17	45	52	3.33
E184 READ RADIOLOGY REPORTS TO PHYSICIANS OR MEDICAL PERSONNEL	2.87	17	46	50	3.22
H274 ASSIGN PATIENTS TO RADIOGRAPHIC EXPOSURE ROOMS	2.07	16	57	61	3.52
E149 COMPLETE MONTHLY PERSONAL TIMESHEETS	3.96	15	32	46	3.52
E196 WRITE PATIENTS' PREPARATION INSTRUCTIONS FOR RADIOGRAPHIC EXAMINATIONS	3.04	15	41	38	4.77
G266 PROCESS 35mm, 100mm, OR 105mm FILM	3.96	15	43	41	3.91

Mean TE = 2.70 S.D. = 1.97
 Mean TD = 5.00 S.D. = 1.00

Attitude questions covering job interest, perceived use of talents and training, sense of accomplishment from work, and reenlistment intentions were included in the survey booklet. The information from these questions is discussed in Tables 21, 22, and 23.

Table 21 compares responses from members of various TAFMS groups in the current study with those from members of related medical AFSCs surveyed in 1991. Generally, all indicators are higher for AFSC 903X0 personnel than their counterparts in other medical AFSCs. The exception is in reenlistment intentions. Fewer AFSC 903X0 personnel plan to reenlist than those in the other medical specialties.

Table 22 compares satisfaction indicators for TAFMS groups in the current survey to those of the previous OSR. Respondents to the current study expressed higher job interest and perceived use of talents and training. Reenlistment intentions, however, are also lower for the current study.

Satisfaction indicators for members performing the individual specialty jobs are displayed in Table 23. Members performing all jobs find their jobs interesting, feel their talents and training are used, but have varying reenlistment intentions. This may be influenced by specialized experience gained in the Air Force and employment opportunities in the civilian community.

DISCUSSION

Since the last STS was developed, new procedures and types of equipment have been placed in use with resulting specialization. Additional SEIs or shredouts may be needed for the career ladder to address the specialized procedures and equipment used. AFSC 903X0 progress typically through the career ladder with an increase in complexity of procedures performed, and the addition of supervisory responsibility with experience. Training documents are well supported and the AFR 39-1 Specialty Descriptions are accurate. Job satisfaction has remained high for members of this specialty, while reenlistment intentions have declined, no doubt due to employment opportunities outside the Air Force.

TABLE 21

COMPARISON OF JOB SATISFACTION INDICATORS FOR AFSC 903XO
TAFMS GROUPS IN CURRENT STUDY TO A COMPARATIVE SAMPLE
(PERCENT MEMBERS RESPONDING)

	<u>1-48 MONTHS TAFMS</u>		<u>49-96 MONTHS TAFMS</u>		<u>97+ MONTHS TAFMS</u>	
	<u>903XO</u> <u>(N=191)</u>	<u>COMP SAMPLE</u> <u>(N=1,197)</u>	<u>903XO</u> <u>(N=238)</u>	<u>COMP SAMPLE</u> <u>(N=1,020)</u>	<u>903XO</u> <u>(N=224)</u>	<u>COMP SAMPLE</u> <u>(N=1,196)</u>
<u>EXPRESSED JOB INTEREST:</u>						
INTERESTING	89	79	88	75	79	80
SO-SO	9	13	7	16	11	13
DULL	2	8	5	9	10	7
<u>PERCEIVED USE OF TALENTS:</u>						
FAIRLY WELL TO GOOD	93	81	91	80	81	83
LITTLE OR NOT AT ALL	7	19	9	20	19	17
<u>PERCEIVED USE OF TRAINING:</u>						
FAIRLY WELL TO GOOD	93	85	93	79	85	79
LITTLE OR NOT AT ALL	7	15	7	21	15	21
<u>REENLISTMENT INTENTIONS:</u>						
WILL REENLIST	35	56	47	64	66	70
WILL NOT REENLIST	65	44	53	36	14	10
WILL RETIRE	0	0	0	0	20	20

NOTE: Comparative data are from AFSCs 902X0A/B and 907X0 surveyed in 1991

TABLE 22

COMPARISON OF JOB SATISFACTION INDICATORS FOR AFSC 903X0
TAFMS GROUPS IN CURRENT AND PREVIOUS STUDY
(PERCENT MEMBERS RESPONDING)

	<u>1-48 MONTHS TAFMS</u>		<u>49-96 MONTHS TAFMS</u>		<u>97+ MONTHS TAFMS</u>	
	<u>903X0</u>	<u>COMP SAMPLE</u>	<u>903X0</u>	<u>COMP SAMPLE</u>	<u>903X0</u>	<u>COMP SAMPLE</u>
	<u>(N=191)</u>	<u>(N=352)</u>	<u>(N=238)</u>	<u>(N=152)</u>	<u>(N=224)</u>	<u>(N=187)</u>
<u>EXPRESSED JOB INTEREST:</u>						
INTERESTING	89	81	88	81	79	75
SO-SO	9	13	7	12	11	12
DULL	2	6	5	7	10	13
<u>PERCEIVED USE OF TALENTS:</u>						
FAIRLY WELL TO GOOD	93	86	90	84	81	78
LITTLE OR NOT AT ALL	7	14	10	16	19	22
<u>PERCEIVED USE OF TRAINING:</u>						
FAIRLY WELL TO GOOD	93	91	93	84	84	77
LITTLE OR NOT AT ALL	7	9	7	16	16	23
<u>REENLISTMENT INTENTIONS:</u>						
WILL REENLIST	35	52	47	64	66	69
WILL NOT REENLIST	65	48	53	33	14	10
WILL RETIRE	0	0	0	1	20	21

TABLE 23

COMPARISON OF JOB SATISFACTION INDICATORS
FOR AFSC 903X0 RESPONDENTS ACROSS JOBS
(PERCENT MEMBERS RESPONDING)

	<u>GENERAL RADIOLOGY CLUSTER</u>	<u>ANGIOGRAPHY JOB</u>	<u>COMPUTERIZED TOMOGRAPHY JOB</u>	<u>MAGNETIC RESONANCE IMAGING JOB</u>
<u>EXPRESSED JOB INTEREST:</u>				
INTERESTING	84	100	93	100
SO-SO	10	0	7	0
DULL	6	0	0	0
<u>PERCEIVED USE OF TALENTS:</u>				
FAIRLY WELL TO GOOD	87	100	100	100
LITTLE OR NOT AT ALL	13	0	0	0
<u>PERCEIVED USE OF TRAINING:</u>				
FAIRLY WELL TO GOOD	90	100	100	100
LITTLE TO NOT AT ALL	10	0	0	0
<u>REENLISTMENT INTENTIONS:</u>				
WILL REENLIST	49	38	66	40
WILL NOT REENLIST	47	62	27	60
WILL RETIRE	4	0	7	0

TABLE 23 (CONTINUED)

COMPARISON OF JOB SATISFACTION INDICATORS
FOR AFSC 903X0 RESPONDENTS ACROSS JOBS
(PERCENT MEMBERS RESPONDING)

	<u>ULTRASOUND JOB</u>	<u>RADIOLOGIC THERAPY JOB</u>	<u>INSTRUCTIONS JOB</u>	<u>SUPERINTENDENT JOB</u>
<u>EXPRESSED JOB INTEREST:</u>				
INTERESTING	100	100	84	90
SO-SO	0	0	8	5
DULL	0	0	8	5
<u>PERCEIVED USE OF TALENTS:</u>				
FAIRLY WELL TO GOOD	100	100	92	89
LITTLE OR NOT AT ALL	0	0	8	11
<u>PERCEIVED USE OF TRAINING:</u>				
FAIRLY WELL TO GOOD	93	100	83	95
LITTLE TO NOT AT ALL	7	0	17	5
<u>REENLISTMENT INTENTIONS:</u>				
WILL REENLIST	64	20	66	46
WILL NOT REENLIST	36	80	17	8
WILL RETIRE	0	0	17	46

APPENDIX A
SELECTED REPRESENTATIVE TASKS PERFORMED BY
MEMBERS OF CAREER LADDER JOBS

TABLE A4

MAGNETIC RESONANCE IMAGING (MRI) JOB
STG72

NUMBER IN STAGE: 5

AVERAGE TIME IN JOB: 15 MONTHS

PERCENT OF SAMPLE: 1%

AVERAGE TAFMS: 46 MONTHS

THE FOLLOWING TASKS ARE IN DESCENDING ORDER OF PERCENT MEMBERS PERFORMING:

<u>TASKS</u>	<u>PERCENT MEMBERS PERFORMING</u>
L498 SCREEN PATIENTS FOR METALLIC IMPLANTS PRIOR TO MR SCANS	100
L478 PERFORM MR SCANNER ARCHIVE PROCEDURES	100
L480 PERFORM MR UNENHANCED SCANS OF DESIGNATED ANATOMY	100
L493 PREPARE AND POSITION PATIENTS FOR MR SCAN PROCEDURES	100
L499 SCREEN PERSONNEL ENTERING MR SCAN ROOM FOR METALLIC OBJECTS	100
L452 MONITOR PATIENTS' CONDITION DURING ANGIOGRAPHY, CT SCANS, OR MR SCANS	100
L477 PERFORM MR ROUTINE STARTUP AND SHUTDOWN PROCEDURES	100
L476 PERFORM MR ENHANCED SCANS OF DESIGNATED ANATOMY	100
L424 ADMINISTER IV CONTRAST MEDIA DURING MR SCANS	100
L427 CALCULATE CONTRAST MEDIA DOSAGES FOR MR SCANS	100
L429 COMPLETE DAILY MR PROFILE SCANNER ANALYSES	100
G245 CLEAN AUTOMATIC FILM PROCESSOR CROSSOVERS	100
E193 SCHEDULE PATIENTS FOR DIAGNOSTIC IMAGING PROCEDURES	100
L496 RECORD MR IMAGES ON FILM	80
L447 KEY PATIENTS' BIOGRAPHICAL INFORMATION INTO MR SCANNER COMPUTERS	80
L450 MONITOR MR EQUIPMENT CRYOGEN LEVELS	80
G246 CLEAN AUTOMATIC FILM PROCESSOR DEEP RACKS	80
L462 PERFORM CINE MR SCANS	80
L451 MONITOR MR SCANNER ROOM PATIENTS' OXYGEN SUPPLY LEVELS	80
L422 ADJUST MAGNETIC RESONANCE (MR) DOCKING TABLES	60
E165 LABEL OR UPDATE FILM FILE ENVELOPES OR FOLDERS	60
H282 MONITOR PATIENTS' CONDITION DURING STANDARD DIAGNOSTIC EXAMINATIONS	60
G250 CONDUCT AUTOMATIC FILM PROCESSOR TURN-ON OR TURN-OFF PROCEDURES	60
E154 FILE RADIOGRAPHIC FILMS OR REPORTS	60
E168 LOG PATIENTS' VISIT DATA IN COMPUTERS	60
E139 ADMINISTER PREGNANCY QUESTIONNAIRES	60
E194 UPDATE PATIENTS' NOMINAL INDEX CARD FILES OR COMPUTER FILES	60
H291 SCHEDULE RADIOLOGY SERVICES WITH OTHER DEPARTMENTS OR AWARDS	60
L475 PERFORM MR DYNAMIC SCANS	60
H293 TRANSPORT PATIENTS ON LITTERS OR WHEEL CHAIRS	60

TABLE A5

ULTRASOUND JOB
STG48

NUMBER IN STAGE: 14

AVERAGE TIME IN JOB: 31 MONTHS

PERCENT OF SAMPLE: 2%

AVERAGE TAFMS: 101 MONTHS

THE FOLLOWING TASKS ARE IN DESCENDING ORDER OF PERCENT MEMBERS PERFORMING

TASKS	PERCENT MEMBERS PERFORMING
M504 EXPLAIN ULTRASONOGRAPHY EXAMINATION PREPARATION PROCEDURES TO PATIENTS	100
M508 PERFORM BILIARY SYSTEM ULTRASONOGRAPHY	100
M530 PERFORM OBSTETRIC ULTRASONOGRAPHY FOR ECTOPIC PREGNANCIES	100
M542 PERFORM RENAL ULTRASONOGRAPHY	100
M534 PERFORM PANCREATIC ULTRASONOGRAPHY	100
M531 PERFORM OBSTETRIC ULTRASONOGRAPHY FOR MISCARRIAGES	100
M507 PERFORM AORTIC ULTRASONOGRAPHY	100
M556 RECORD ULTRASONOGRAPHY STUDIES ON FILM	93
M505 MAINTAIN ULTRASOUND PATIENTS' RECORDS	93
M544 PERFORM SPLENIC ULTRASONOGRAPHY	93
M546 PERFORM THYROID ULTRASONOGRAPHY	93
M532 PERFORM OBSTETRIC ULTRASONOGRAPHY, OTHER THAN FOR ECTOPIC PREGNANCIES OR MISCARRIAGES	86
M536 PERFORM PELVIC ULTRASONOGRAPHY	86
M523 PERFORM HEPATIC ULTRASONOGRAPHY	86
M545 PERFORM TESTICULAR SCANS	86
M509 PERFORM BREAST ULTRASONOGRAPHY	86
M519 PERFORM ENDOVAGINAL ULTRASONOGRAPHY	86
M553 PERFORM ULTRASOUND-GUIDED NEEDLE BIOPSY OR DRAINAGE, OTHER THAN AMNIOCENTESIS	86
M514 PERFORM DAILY ULTRASONOGRAPHY EQUIPMENT OPERATIONAL CHECKS	79
M512 PERFORM COLOR DOPPLER ULTRASONOGRAPHY	79
M549 PERFORM TUMOR LOCALIZATION ULTRASONOGRAPHY	79
M503 ADJUST ULTRASONOGRAPHY CAMERAS	79
M543 PERFORM RETROPERITONEAL ULTRASONOGRAPHY	79
G256 LOAD OR UNLOAD FILM CASSETTES OR MAGAZINES	71
G263 PROCESS RADIOGRAPHIC FILM AUTOMATICALLY	71
E154 FILE RADIOGRAPHIC FILMS OR REPORTS	71
M516 PERFORM DOPPLER ULTRASONOGRAPHY	71
M538 PERFORM POPLITEAL ULTRASONOGRAPHY	71
M506 PERFORM ADRENAL ULTRASONOGRAPHY	71
M539 PERFORM PORTABLE ULTRASONOGRAPHY EXAMINATIONS	71

