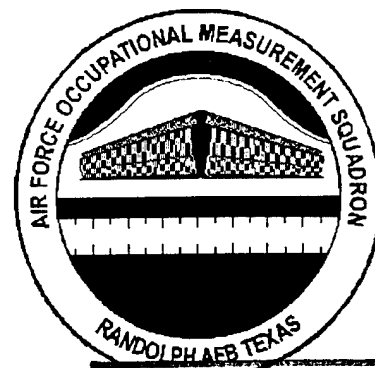
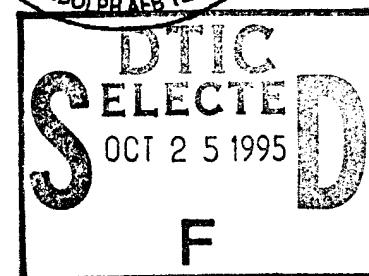


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**UNITED STATES
AIR FORCE**



OCCUPATIONAL SURVEY REPORT

NONDESTRUCTIVE INSPECTION

AFSC 2A7X2

AFPT 90-458-996

AUGUST 1995

**OCCUPATIONAL ANALYSIS PROGRAM
AIR FORCE OCCUPATIONAL MEASUREMENT SQUADRON
AIR EDUCATION and TRAINING COMMAND
RANDOLPH AFB, TEXAS 78150-4449**

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PREFACE

This report presents the results of an occupational survey of the Nondestructive Inspection career ladder, AFSC 2A7X2. Authority for conducting occupational surveys is found in AFI 36-2623. Computer products used in this report are available for use by operations and training officials.

Chief Master Sergeant Jeffrey L. Milligan, Inventory Development Specialist, developed the survey instrument. First Lieutenant Peter M. Berg, Occupational Analyst, analyzed the data, and wrote the final report. Ms. Olga Velez provided programming support, and Ms. Linda McDonald provided administrative support. This report has been reviewed and approved for release by Major Randall C. Agee, Chief, Airman Analysis Section, Occupational Analysis Flight, Air Force Occupational Measurement Squadron (AFOMS).

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

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SUMMARY OF RESULTS

1. Survey Coverage: This report is based on responses from 463 AFSC 2A7X2 respondents, which represents 73 percent of all assigned AFSC 2A7X2 personnel.
2. Specialty Jobs: Structure analysis identified one cluster and two independent jobs: The General Inspection cluster consists of six jobs: Core General Inspection, JOAP Specialist, JOAP Technician, Shop/Assistant NCOIC, Radiographic Inspection, and Supervisor/Analyst. The two independent jobs are the Apprentice job and the Supervisor job.
3. Career Ladder Progression: AFSC 2A7X2 personnel follow a typical skill level progression. Three-skill level personnel primarily perform basic technical tasks, while 5-skill level personnel perform broader jobs. Seven-skill level personnel perform supervisory, administrative, and training tasks which account for 31 percent of their time. Members of all skill levels perform a number of common nondestructive inspection tasks.
4. AFM 36-2108 Specialty Descriptions: The AFMAN 36-2108 *Specialty Description* for the Nondestructive Inspection career ladder was reviewed and found to provide an accurate description of the jobs performed by each skill level.
5. Training: An analysis of the November 1991 STS and the C3ABR45831 POI (dated 29 April 1992) shows that both documents are extremely sound. Only two STS elements, relating to preparation of statements of charges and atomic absorption, were not supported by survey data. Four POI learning objectives were not supported. There were also a few technical tasks not referenced to either document. These unsupported STS elements and POI learning objectives, as well as the unreferenced tasks, should be reviewed by training personnel to ensure that both documents are complete.
6. Job Satisfaction: Overall, AFSC 2A7X2 respondents are satisfied with their jobs. When compared to other mission equipment maintenance specialties surveyed in 1993, AFSC 2A7X2 personnel show relatively higher job satisfaction. When compared to the career ladder reviewed in the 1987 (AFSC 458X1) Occupational Survey Report (OSR), current survey data indicate that job satisfaction has improved across all total active federal military service (TAFMS) groups. A comparison of jobs identified in the current sample reveals members in the General Inspection cluster have the highest level of job satisfaction, while personnel in the Supervisor job group are the least satisfied.
7. Implications: The Nondestructive Inspection (AFSC 2A7X2) career ladder has not changed much since the last survey in 1987. The jobs still involve technical analysis and standard support functions. Career ladder progression is typical and the AFMAN 36-2108 *Specialty Description* is accurate. The technical training program is sound and both the STS and POI are well supported by survey data. Job satisfaction data show the members of the career ladder are generally satisfied with their jobs.

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**OCCUPATIONAL SURVEY REPORT (OSR)
NONDESTRUCTIVE INSPECTION
AFSC 2A7X2**

INTRODUCTION

This is a report of an occupational survey of the Nondestructive Inspection career ladder (AFSC 2A7X2). This survey was conducted to collect current data for use in validating training documents. The last occupational survey for this career ladder was published in January 1987.

Background

As described in the AFMAN 36-2108 *Specialty Description*, AFSC 2A7X2 personnel are responsible for determining test methods, preparing for inspections, and interpreting and evaluating results of test methods conducted to detect discontinuities and flaws in missiles, aircraft, and aerospace ground support equipment. These duties include preparing used engine lubricating oil and other fluid samples for spectrometric oil analysis, performing test methods to identify discontinuities and flaws in component parts and integrity of pressurized systems, and measuring thicknesses of materials. Furthermore, they operate and perform operator maintenance on portable and fixed test equipment, operate and perform operator maintenance on oil analysis spectrometers, and develop exposure charts to compute exposure data for radiographic techniques.

Initial 3-skill level training is provided through a 10-week, 4-day course at NAS Memphis TN. The Apprentice Nondestructive Inspection Specialist course, C3ABR45831-000, includes instruction in principles, development of techniques, and application of nondestructive inspection methods. The course also covers interpreting results from conducting tests on various materials. The course is projected to be moved from NAS Memphis in the near future (NLT FY 96), to an as yet undetermined location.

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SURVEY METHODOLOGY

Inventory Development

Data for this survey were collected using USAF Job Inventory Air Force Personnel Test (AFPT) 90-458-996, dated January 1993. A preliminary task list was prepared after reviewing career ladder documents, tasks from the previous Nondestructive Inspection job inventory (JI), and data from the previous OSR. This preliminary task list was then validated through interviews with 37 subject-matter experts (SMEs) at the following organizations:

<u>BASE</u>	<u>ORGANIZATIONS VISITED</u>
Chanute AFB IL	3330 TCHTW
Dyess AFB TX	96 MS
Little Rock AFB AR	314 MS
Barksdale AFB LA	2 MS
Eglin AFB FL	3246 EMS
Hurlburt FLD FL	834 EMS
Luke AFB AZ	58 EMS
Travis AFB CA	60 EMS

The final JI contains 395 tasks grouped under 16 duty headings with standard background questions asking respondents to indicate pay grade, duty title, time in service, time in present job, time in career field, and job satisfaction. Additional background questions concerning inspections, equipment, and forms usage were asked. Responses to these questions are of use to functional and training personnel.

Survey Administration

From April to October 1993, Military Personnel Flights at operational bases worldwide administered the job inventory to all eligible AFSC 2A7X2 personnel. Members eligible for the survey consisted of the total assigned population of both career fields, excluding the following: (1) hospitalized personnel; (2) personnel in transition for a permanent change of station; (3) personnel retiring within the time the inventories were administered to the field; and (4) personnel in their jobs less than 6 weeks. Participants were selected from a computer-generated mailing list obtained from personnel data tapes maintained by the Air Force Military Personnel Center, Randolph Air Force Base, Texas.

Each individual who filled out an inventory first completed the identification and biographical information section. Next, respondents answered questions in the background portion of the inventory. They were then instructed to go through the booklet and check each task they perform in their current job. Finally, they were asked to go back and rate the relative amount of time spent on each task performed using a 9-point scale. Time-spent ratings range from 1 (indicating a very small amount of time spent) to 9 (indicating a very large amount of time spent).

Computer programs calculated the relative percent time each respondent spent performing tasks by first totaling the respondent's ratings on all tasks marked, dividing the ratings for each task by this total, and multiplying by 100. Percent time spent ratings from all respondents were used along with percent members performing values for various analyses in the study.

Survey Sample

Of the 636 members assigned in April 1993, 537 were eligible to be surveyed. The final sample includes responses from 463 respondents, representing 73 percent of the assigned and 86 percent of eligible members. Tables 1 and 2, comparing the MAJCOM and paygrade distributions, show the sample is quite representative of the assigned population.

Task Factor Administration

Job descriptions alone do not provide sufficient data for making decisions about career ladder documents or training programs. Task factor data were collected by asking selected E-6 and E-7 NCOs to complete either a training emphasis (TE) or task difficulty (TD) booklet. These booklets are processed separately from the job inventories, and the TE and TD data are considered when analyzing other issues in the 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 (FTDs), mobile training teams (MTTs), formal OJT, or any other organized training method. Forty-seven experienced AFSC 2A7X2 respondents rated the tasks in the inventory on a 10-point scale ranging from 0 (extremely low emphasis) to 9 (extremely high emphasis). Interrater agreement for these 47 raters was acceptable. The average TE rating is 3.10, with a standard deviation of 1.91. Any task with a TE rating of 5.01 or greater is considered to have high TE.

TABLE 1
MAJCOM REPRESENTATION IN SAMPLE

<u>COMMAND</u>	<u>PERCENT OF ASSIGNED</u>	<u>PERCENT OF SAMPLE</u>
ACC	53	54
AMC	15	16
AFMC	5	5
USAFE	12	9
PACAF	9	9
Other	7	7

TOTAL ASSIGNED = 636

TOTAL SURVEYED = 537

TOTAL IN SAMPLE = 463

PERCENT OF ASSIGNED IN SAMPLE = 73%

PERCENT OF SURVEYED IN SAMPLE = 86%

TABLE 2
PAYGRADE DISTRIBUTION OF SAMPLE

<u>PAYGRADE</u>	<u>PERCENT OF ASSIGNED</u>	<u>PERCENT OF SAMPLE</u>
E-1 to E-3	24	23
E-4	28	30
E-5	23	23
E-6	15	15
E-7	10	9

Task Difficulty (TD). TD is defined as an estimate of the length of time the average airman takes to learn to perform a task. Fifty-three experienced NCOs rated the difficulty of tasks on a 9-point scale ranging from 1 (extremely low difficulty) to 9 (extremely high difficulty). Interrater agreement was again acceptable. TD ratings are normally adjusted so tasks have an average difficulty 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. TE and TD ratings, when used with percent members performing values, can provide insight into first-enlistment training requirements, help validate the need for structured training, and aid in the evaluation of the POI for the entry-level course.

CAREER LADDER STRUCTURE

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

The basic grouping in the hierarchical clustering process is the *JOB*. When there is a substantial degree of similarity between jobs, they are grouped together and identified as a *CLUSTER*. The structure of the Nondestructive Inspection career ladder is defined in terms of the jobs and cluster of jobs the 463 respondents perform.

Overview

Analysis of the data shows the job structure of AFSC 2A7X2 is organized into one cluster and two independent jobs. Most members in the career ladder perform jobs that fall in the General Inspection cluster. These jobs involve work related to the Joint Oil Analysis Program (JOAP), radiographic inspection procedures, and supervision. The job structure is displayed graphically in Figure 1 and in the outline presented below. The stage (STG) number listed beside each job title is a reference number assigned by CODAP, while the letter "N" refers to the number of respondents performing the job.

AFSC 2A7X2 CAREER LADDER JOBS

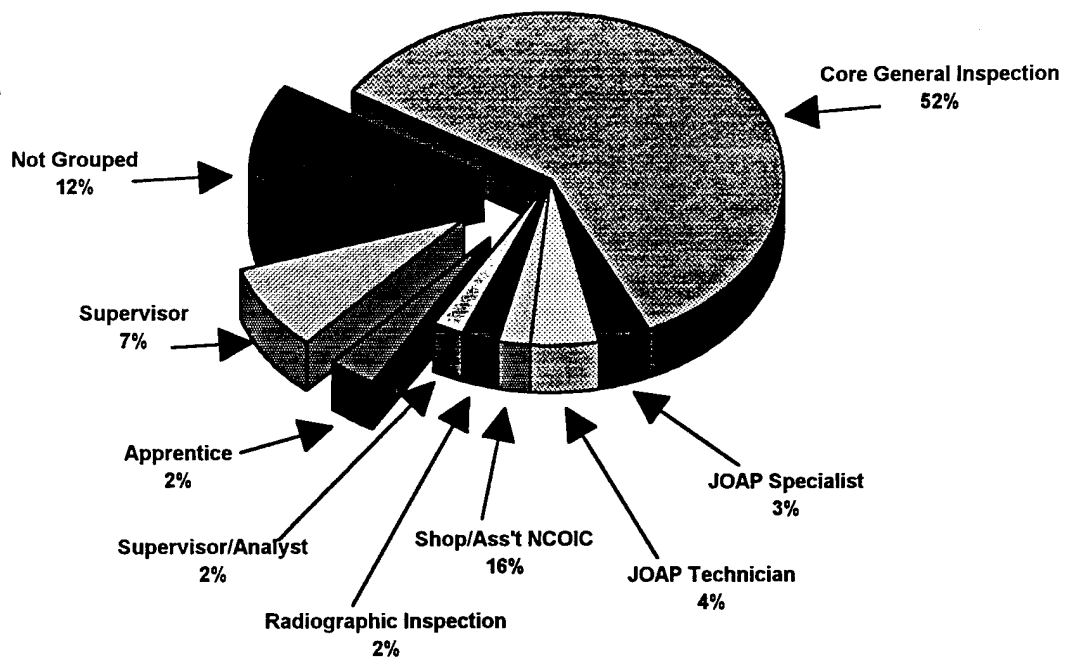


FIGURE 1

AFSC 2A7X2 CAREER LADDER JOBS

I. GENERAL INSPECTION CLUSTER (ST029, N=389)

- A. Core General Inspection Job (STG103, N=239)
- B. JOAP Specialist Job (STG62, N=16)
- C. JOAP Technician Job (GP37, N=21)
- D. Shop/Assistant NCOIC Job (STG83, N=75)
- E. Radiographic Inspection Job (STG76, N=8)
- F. Supervisor Analyst Job (STG51, N=11)

II. APPRENTICE JOB (STG25, N=12)

III. SUPERVISOR JOB (STG19, N=33)

Some respondents did not group into a specific job (12 percent). The patterns of tasks performed by these incumbents were very diverse, and as a result, these incumbents did not fit within the identified jobs, nor were they similar enough to one another to form jobs on their own.

The amount of time members of career ladder jobs spend on duties is presented in Table 3, while selected background data is presented in Table 4. Brief descriptions of each job are presented below, while representative tasks performed are listed in **APPENDIX A**. Table 5 shows a comparison between jobs identified in the current OSR and the 1987 survey.

Included with each job description is also a listing of task modules that represent tasks likely to be co-performed by job members. Each listing displays the number of tasks in the module and the percent of job time members spend performing tasks within the module (PERCENT TIME SPENT). A complete listing of the tasks that comprise each module is presented for reference in **APPENDIX B**.

I. GENERAL INSPECTION CLUSTER (STG029, N=389). The General Inspection cluster members perform a broad range of technical activities associated with conducting the Air Force's nondestructive inspection program. Six distinct jobs were identified within the cluster. Most of these jobs involve a large number of general nondestructive inspection tasks, such as cleaning NDI equipment, interpreting penetrant indications, and locating information by reference to technical data. Each of the six jobs, however, is distinguished by the time members spend on specific tasks.

TABLE 3

AVERAGE PERCENT TIME SPENT ON DUTIES BY CAREER LADDER JOBS

DUTIES	CORE GENERAL INSPECTION (ST103)	JOAP SPECIALIST (ST62)	JOAP TECHNICIAN (GP37)	SHOP/ASST NCOIC (ST83)
A ORGANIZING AND PLANNING	1	1	3	6
B DIRECTING AND IMPLEMENTING	3	1	6	9
C INSPECTING AND EVALUATING	1	1	3	6
D TRAINING	1	*	2	4
E PERFORMING NONDESTRUCTIVE INSPECTION (NDI) ACTIVITIES	5	3	7	8
F PERFORMING CORE AUTOMATED MAINTENANCE SYSTEMS (CAMS) ACTIVITIES	6	5	9	7
G PERFORMING PREINSPECTION OR GENERAL NONDESTRUCTIVE INSPECTION (NDI) ACTIVITIES	13	15	11	8
H PERFORMING BOND OR COMPOSITE TESTING ACTIVITIES	3	7	2	3
I PERFORMING LIQUID PENETRANT INSPECTIONS	11	10	7	6
J PERFORMING RADIOGRAPHIC INSPECTIONS	14	10	12	10
K PERFORMING ULTRASONIC INSPECTIONS	8	10	4	6
L PERFORMING MAGNETIC PARTICLE INSPECTIONS	12	12	9	8
M PERFORMING EDDY CURRENT INSPECTIONS	8	7	7	5
N PERFORMING JOINT OIL ANALYSIS PROGRAM (JOAP) ACTIVITIES	12	16	15	11
O PERFORMING MOBILITY ACTIVITIES	2	2	2	4
P PERFORMING CROSS-UTILIZATION TRAINING (CUT) TASKS	*	*	*	*

* Denotes less than 1 percent

TABLE 3 (CONTINUED)

AVERAGE PERCENT TIME SPENT ON DUTIES BY CAREER LADDER JOBS

DUTIES	RADIOGRAPHIC INSPECTION (ST76)	SUPERVISOR/ ANALYST (ST51)	APPRENTICE (ST25)	SUPERVISOR (STG19)
A ORGANIZING AND PLANNING	3	3	1	15
B DIRECTING AND IMPLEMENTING	5	8	1	23
C INSPECTING AND EVALUATING	3	5	*	17
D TRAINING	2	4	1	7
E PERFORMING NONDESTRUCTIVE INSPECTION (NDI) ACTIVITIES	5	4	6	10
F PERFORMING CORE AUTOMATED MAINTENANCE SYSTEMS (CAMS) ACTIVITIES	10	12	5	9
G PERFORMING PREINSPECTION OR GENERAL NONDESTRUCTIVE INSPECTION (NDI) ACTIVITIES	11	10	19	3
H PERFORMING BOND OR COMPOSITE TESTING ACTIVITIES	1	4	4	*
I PERFORMING LIQUID PENETRANT INSPECTIONS	7	6	18	1
J PERFORMING RADIOGRAPHIC INSPECTIONS	16	15	10	4
K PERFORMING ULTRASONIC INSPECTIONS	4	5	6	1
L PERFORMING MAGNETIC PARTICLE INSPECTIONS	7	9	10	1
M PERFORMING EDDY CURRENT INSPECTIONS	4	8	2	1
N PERFORMING JOINT OIL ANALYSIS PROGRAM (JOAP) ACTIVITIES	17	5	15	3
O PERFORMING MOBILITY ACTIVITIES	2	2	2	3
P PERFORMING CROSS-UTILIZATION TRAINING (CUT) TASKS	*	*	*	*

* Denotes less than 1 percent

TABLE 4

SELECTED BACKGROUND DATA FOR AFSC 2A7X2 CAREER LADDER JOBS

	CORE GENERAL INSPECTION (ST103)	JOAP SPECIALIST (ST062)	JOAP TECHNICIAN (GP037)	SHOP/ASST NCOIC (ST083)
NUMBER IN GROUP	239	16	21	75
PERCENT OF SAMPLE	52%	3%	4%	16%
<u>DAFSC DISTRIBUTION:</u>				
2A732	16%	31%	0%	0%
2A752	67%	56%	52%	24%
2A772	17%	13%	48%	76%
<u>PAYGRADE DISTRIBUTION:</u>				
E-1 to E-3	29%	56%	5%	0%
E-4	41%	19%	33%	11%
E-5	25%	25%	33%	20%
E-6	5%	0%	24%	40%
E-7	0%	0%	5%	29%
E-8	0%	0%	0%	0%
AVERAGE NUMBER OF TASKS PERFORMED	162	96	128	249
AVERAGE MONTHS TAFMS	72	49	118	166
PERCENT IN FIRST ENLISTMENT	45%	70%	19%	4%
PERCENT SUPERVISING	35%	19%	62%	96%

TABLE 4 (CONTINUED)

SELECTED BACKGROUND DATA FOR AFSC 2A7X2 CAREER LADDER JOBS

NUMBER IN GROUP PERCENT OF SAMPLE	RADIOGRAPHIC INSPECTION (ST076)		SUPERVISOR/ ANALYST ST051)		APPRENTICE ST025)		SUPERVISOR (ST019)	
<u>DAFSC DISTRIBUTION:</u>								
2A732	8	2%	11	2%	12	2%	33	7%
2A752	0%		0%		58%		0%	
2A772	63%		45%		34%		3%	
	37%		55%		8%		97%	
<u>PAYGRADE DISTRIBUTION:</u>								
E-1 to E-3	0%		0%		83%		0%	
E-4	12%		37%		17%		0%	
E-5	75%		18%		0%		3%	
E-6	13%		36%		0%		46%	
E-7	0%		9%		0%		48%	
E-8	0%		0%		0%		3%	
<u>AVERAGE NUMBER OF TASKS PERFORMED</u>								
AVERAGE MONTHS TAFMS	124		113		66		107	
PERCENT IN FIRST ENLISTMENT	156		126		19		202	
PERCENT SUPERVISING	0%		9%		91%		0%	
	100%		82%		8%		97%	

TABLE 5

SPECIALTY JOB COMPARISONS BETWEEN CURRENT AND 1987 SURVEYS

CURRENT SURVEY (N=463)	PERCENT OF SAMPLE	458X1 1987 SURVEY (N=690)	PERCENT OF SAMPLE
CORE GENERAL INSPECTION JOB	52	GENERAL INSPECTION PERSONNEL	68
JOAP SPECIALIST JOB	3	JOINT OIL ANALYSIS PROGRAM (JOAP)	3
JOAP TECHNICIAN JOB	4	PERSONNEL	
SHOP/ASSISTANT NCOIC JOB	16	SHOP/LABORATORY NCOICs	3
RADIOGRAPHIC INSPECTION JOB	2	NOT IDENTIFIED	
SUPERVISOR/ANALYST	2	NOT IDENTIFIED	
APPRENTICE JOB	2	APPRENTICE INSPECTION PERSONNEL	4
SUPERVISOR JOB	7	SUPERVISORY NONDESTRUCTIVE INSPECTION (NDI) TECHNICIAN	13
NOT IDENTIFIED		TRAINING PERSONNEL	3

A. Core General Inspection Job (STG103, N=239). The largest group of respondents in the General Inspection cluster (52 percent of the sample) work in this job. Table 3 shows 94 percent of their job time involves general nondestructive inspection activities, while the remainder is spent on directing, organizing, inspecting, and training activities. Members perform an average of 162 tasks, which is the second highest average number of tasks of all the jobs in the specialty. Representative tasks performed include:

- clean NDI equipment
- determine if materials are ferrous or nonferrous
- interpret penetrant indications
- locate information by reference to technical data, such as
 - specific inspection methods or cleaning requirements
- identify penetrant indications
- inspect parts using solvent removable penetrant process (Method D)

The following representative task modules show that, in addition to performing general nondestructive inspection tasks, members of this job spend a great deal of job time working on CAMS, radiographic inspection, and oil analysis.

<u>TM</u>	<u>TITLE</u>	<u>TASKS</u>	<u>PERCENT TIME SPENT</u>
01	CORE GENERAL INSPECTION	74	44
04	CAMS	7	4
02	RADIOGRAPHIC INSPECTION	28	13
03	OIL ANALYSIS	23	11
05	DATA FILE MAINTENANCE	4	2

Forty-five percent of Core General Inspection personnel are in their first enlistment, and 67 percent hold the 5-skill level. Other background data can be found in Table 4. A large percentage of members performing this job are assigned to Air Combat Command (ACC).

B. JOAP Specialist Job (STG62, N=16). Like Core General Inspection incumbents, members of this job perform general nondestructive inspection work, but are distinguished by time spent performing JOAP tasks. JOAP Specialist incumbents perform a relatively small number of tasks compared to the rest of the career field (average of 96 tasks) and are more focused. The tasks which distinguish this job deal with composite testing, JOAP, and preinspection/general NDI activities. The following are representative tasks which distinguish this job:

- calibrate bond testing equipment to known standards
- perform coin-tap or tap hammer tests
- perform ultrasonic bond testing on composite structures using pulse-echo method
- prepare transit JOAP records
- perform JOAP trend analysis
- prepare JOAP samples for atomic emission spectrometers

The representative task modules indicate that, in addition to JOAP and core general inspection tasks, members of this job also spend time testing composite structures, performing eddy current phase analysis, and working with the core automated maintenance system (CAMS).

<u>TM</u>	<u>TITLE</u>	<u>TASKS</u>	<u>PERCENT TIME SPENT</u>
12	COMPOSITES TESTING	6	4
01	CORE GENERAL INSPECTION	74	46
03	OIL ANALYSIS (JOAP)	23	14
04	CAMS	7	4
07	EDDY CURRENT PHASE ANALYSIS	4	2

The members performing the JOAP Specialist job average 49 months TAFMS, suggesting a lower experience level overall. Fifty-six percent of JOAP Specialists hold the 5-skill level, while 31 percent hold the 3-skill level. Only 19 percent supervise, while 70 percent are in their first enlistment. The high percent of incumbents in their first enlistment, plus the relatively low number of tasks performed, plus the moderately low TAFMS, skill level, and percent supervising, all suggest this is an entry-level job.

C. JOAP Technician Job (GP37, N=21). The members of this job perform many of the same tasks as the JOAP Specialists, but are distinguished by the time they spend performing many administrative and supervisory tasks. This job includes emphasis on CAMS, JOAP, general nondestructive inspection work, and supervisory tasks. The supervisory responsibilities of the Technician are shown by the high percent members supervising (62 percent). The following are representative tasks performed by the JOAP Technician:

- access CAMS menus and screens
- open or close CAMS
- clear or closeout completed discrepancies in CAMS
- supervise NDI Specialists in AFSC 2A752
- conduct performance feedback (PFW) evaluation sessions
- write EPRs

The following task modules show the focus on CAMS, JOAP, and core general inspection tasks.

<u>TM</u>	<u>TITLE</u>	<u>TASKS</u>	<u>PERCENT TIME SPENT</u>
04	CAMS	7	6
03	OIL ANALYSIS (JOAP)	23	14
01	CORE GENERAL INSPECTION	74	34
15	SUPERVISE AND TRAIN AFSC 45851	12	5
05	DATA FILE MAINTENANCE	4	2

While JOAP Technicians average 118 months TAFMS, 19 percent are in their first enlistment. Fifty-two percent of the members hold the 5-skill level, while 48 percent hold the 7-skill level. JOAP Technicians perform an average of 128 tasks, 24 percent more tasks than JOAP Specialists perform. These are more experienced members of the specialty, and are responsible for performing more NDI tasks as well as for supervising and training junior personnel.

D. Shop/Assistant NCOIC Job (STG83, N=75). The role of this job is to provide experienced, on-the-floor leadership to run an effective NDI shop. Shop/Assistant NCOICs perform an average of 249 tasks, by far the highest average number of tasks performed by members of any job in the entire NDI career ladder. The tasks on which they spend the greatest amount of time are related to training AFSC 2A752 personnel, JOAP activities, radiographic inspections, and preinspection/general NDI activities. The following tasks distinguish the Shop/Assistant NCOIC job from other jobs:

- supervise NDI Specialists in AFSC 2A752
- counsel personnel on personal or military-related matters
- plan or schedule work assignments
- perform CAMS inquiries for scheduled aircraft or support equipment discrepancies
- prepare oil analysis records for transient aircraft
- determine if materials are ferrous or nonferrous

The representative task modules show the focus on training and supervising AFSC 2A752 personnel, as well as CAMS and core general inspection.

<u>TM</u>	<u>TITLE</u>	<u>TASKS</u>	<u>PERCENT TIME SPENT</u>
15	SUPERVISE AND TRAIN AFSC 2A751	12	6
04	CAMS	7	3
03	OIL ANALYSIS (JOAP)	23	9
01	CORE GENERAL INSPECTION	74	27
05	DATA FILE MAINTENANCE	4	1

Shop/Assistant NCOICs average 166 months TAFMS. Only four percent are in their first enlistment, indicating an experienced group. Seventy-six percent of the members hold the 7-skill level. Ninety-six percent of the Shop/Assistant NCOICs report supervising other AFSC 2A7X2 members.

E. Radiographic Inspection Job (STG76, N=8). Members of this job perform radiographic inspection duties, training, and supervision. Personnel in the Radiographic Inspection job perform an average of 124 tasks, which includes interpreting radiographic indications, developing radiographic film, writing EPRs, and operating CAMS. The high emphasis on radiographic inspection tasks distinguish this job from other NDI jobs. The following are representative tasks performed by members with the Radiographic Inspection job:

- identify radiographic indications
- interpret radiographic indications
- measure radiation exposure levels using radiation survey meters
- assemble or disassemble radiographic exposure equipment
- supervise NDI Specialists in AFSC 2A752
- supervise Apprentice NDI personnel in AFSC 2A732

The representative task modules show that Radiographic Inspection personnel spend most of their job time on CAMS, oil analysis, radiographic inspection, and supervising, and training.

<u>TM</u>	<u>TITLE</u>	<u>TASKS</u>	<u>PERCENT TIME SPENT</u>
04	CAMS	7	5
03	OIL ANALYSIS (JOAP)	23	15
02	RADIOGRAPHIC INSPECTION	28	15
15	SUPERVISE AND TRAIN AFSC 2A752	12	6
16	SUPERVISE AND TRAIN AFSC 2A732	4	2

Radiographic Inspection personnel average 156 months TAFMS, with 63 percent holding a 5-skill level. There are no incumbents in their first enlistment, and all of the members report having supervisory responsibility.

F. Supervisor/Analyst Job (STG51, N=11). Personnel in this job perform a mixture of technical and supervisory tasks. Members train and supervise personnel and perform eddy current phase analysis, radiographic inspections, and CAMS activities. The differences between the Supervisor/Analyst and the Shop/Assistant NCOIC jobs are the number of tasks performed and technical tasks performed. Supervisor/Analysts perform an average of 113 tasks, while Shop/Assistant NCOIC personnel perform an average of 249 tasks. Supervisor/Analysts also have more emphasis on CAMS and eddy current analysis. The following are representative tasks performed by Supervisor/Analysts:

- supervise Apprentice NDI personnel in AFSC 2A732
- supervise NDI Specialists in AFSC 2A752
- interpret eddy current phase analysis indications
- identify eddy current impedance analysis equipment using standards and technical data
- clear or closeout completed discrepancies in CAMS
- access CAMS menus and screens

The representative task modules show members of this job perform CAMS, supervision and eddy current analysis.

<u>TM</u>	<u>TITLE</u>	<u>TASKS</u>	<u>PERCENT TIME SPENT</u>
04	CAMS	7	7
16	SUPERVISE AND TRAIN AFSC 2A732	4	3
15	SUPERVISE AND TRAIN AFSC 2A752	12	8
07	EDDY CURRENT PHASE ANALYSIS	4	3
02	RADIOGRAPHIC INSPECTION	28	14

Supervisor/Analysts average 126 months TAFMS. Eighty-two percent of the members report they have supervisory responsibilities. Fifty-five percent hold the 7-skill level, while 45 percent hold the 5-skill level. Only nine percent are in their first enlistment.

II. APPRENTICE JOB (STG25, N=12). Entry-level members spend the majority of their time learning the tasks of the NDI career ladder by OJT. They perform an average of only 66 tasks, fewer than members of any job in the career ladder perform. Members are involved in preinspection/general NDI activities, various types of inspections, some JOAP activities, and CAMS. The following are representative tasks performed by members with the Apprentice Job:

- interpret penetrant indications
- inspect parts using solvent removable penetrant process (Method C)
- clean NDI equipment
- determine if materials are ferrous or nonferrous
- locate information by reference to technical data, such as specific inspection methods or cleaning requirements
- postclean materials prior to inspections

The associated task modules show members of this job spend most of their time performing JOAP activities, core general inspection tasks, and CAMS tasks.

<u>TM</u>	<u>TITLE</u>	<u>TASKS</u>	<u>PERCENT TIME SPENT</u>
03	OIL ANALYSIS	23	16
01	CORE GENERAL INSPECTION	74	50
04	CAMS	7	4
05	DATA FILE MAINTENANCE	4	2
12	COMPOSITE TESTING	6	2

Members in the Apprentice job average only 19 months TAFMS, which shows they are the newest members of the career ladder. Ninety-one percent of the incumbents report they are in their first enlistment. Fifty-eight percent hold the 3-skill level, while another 34 percent hold the 5-skill level. The low TAFMS, number of tasks performed, absence of supervisory responsibilities, and the preponderance of time spent in general NDI tasks distinguish this job from all other 2A7X2 jobs.

III. SUPERVISOR JOB (STG19, N=33). The role of the Supervisor job is to provide experienced leadership to the 2A7X2 career ladder. The incumbents in this job are the most senior members of the 2A7X2 career ladder. What distinguishes this job from the other supervisory jobs is the time spent on supervisory, directing, and planning tasks versus technical NDI tasks. The focus of the job is clearly shown by the following tasks:

- conduct self-inspections
- interpret policies, directives, or procedures for subordinates
- resolve technical problems for subordinates
- supervise NDI Technicians in AFSC 2A752
- counsel personnel on personal or military-related matters
- write EPRs

The following representative task modules also show the focus on supervisory responsibilities.

<u>TM</u>	<u>TITLE</u>	<u>TASKS</u>	<u>PERCENT TIME SPENT</u>
15	SUPERVISE AND TRAIN AFSC 2A752	12	5
19	SUPERVISORY TASKS	4	4
21	RADIATION SAFETY	7	6
22	PROGRAM PLANNING AND DIRECTING	4	3
17	CHEMICAL/PRECIOUS METALS CONTROL	5	4

Members with the Supervisor job average 202 months TAFMS. Ninety-seven percent hold the 7-skill level.

Comparison of Current Job Descriptions to Previous Study

The results of the specialty job analysis were compared to the previous OSR, dated January 1987. Table 5 compares the jobs identified in the current study to those in the 1987 OSR. Six of the eight current jobs were matched to similar jobs identified in 1987. Only the Radiographic Inspection and the Supervisor/Analyst jobs did not directly match jobs in the last report. The only job from the 1987 OSR not identified in the current study was that of the Training Personnel.

The Nondestructive Inspection career ladder is characterized by a fairly homogenous job structure, with over half of the members in both studies found performing general inspection functions. Several smaller, somewhat more specialized jobs were also identified in both studies. Members in these smaller jobs perform a number of common general inspection tasks, but are distinguished by the time they spend on job-specific tasks. The remainder of the specialty members are in the Apprentice and Supervisor jobs.

ANALYSIS OF DAFSC GROUPS

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

The distribution of skill-level groups across career ladder jobs is displayed in Table 6, while Table 7 displays percent time spent on each duty by members of the skill-level groups. Members of the specialty display a typical pattern of career ladder progression, with 3-skill level personnel spending most of their time on technical tasks and 5-skill level personnel performing a mixture of technical and training and administrative tasks. Seven-skill level personnel perform fewer technical tasks and spend more duty time on administrative, supervisory, and managerial tasks.

Skill-Level Descriptions

DAFSC 2A732. The 61 airmen in the 3-skill level group, representing 13 percent of the survey sample, perform an average of 121 tasks. As shown in Table 6, 62 percent of these airmen are in the Core General Inspection job. They spend approximately 68 percent of their job time on preinspection, JOAP, magnetic particle inspection, liquid penetrant inspection, and radiographic inspection activities. Examples of tasks likely to be performed by 3-skill level personnel include: cleaning NDI equipment, identifying penetrant indications, precleaning materials prior to inspections, and interpreting penetrant indications. Table 8 displays selected representative tasks performed by 3-skill level members.

DAFSC 2A752. The 243 airmen in the 5-skill level group represent 52 percent of the total survey sample and perform an average of 147 tasks. Table 6 shows that 66 percent are in the Core General Inspection job. This table also reflects an increase in the number of personnel found in the JOAP Technician, Shop/Assistant NCOIC, Radiographic Inspection, and Supervisor/Analyst jobs. Table 7 shows that 5-skill level personnel spend 13 percent of their time performing general nondestructive inspection activities and an additional 48 percent of their time on performing liquid penetrant, radiographic, magnetic particle inspections and JOAP activities. In addition to these technical duties, they spend approximately 14 percent of their time performing administrative and supervisory related tasks. Representative tasks performed by 5-skill level incumbents are listed in Table 9.

TABLE 6
DISTRIBUTION OF SKILL-LEVEL MEMBERS
ACROSS CAREER LADDER JOBS
(PERCENT)

JOB	AFSC 2A732 (N=61)	AFSC 2A752 (N=243)	AFSC 2A772 (N=159)
CORE GENERAL INSPECTION JOB	62	66	26
JOAP SPECIALIST JOB	8	4	1
JOAP TECHNICIAN JOB	0	5	6
SHOP/ASSISTANT NCOIC JOB	0	7	36
RADIOGRAPHIC INSPECTION JOB	0	2	2
SUPERVISOR/ANALYST JOB	0	2	4
APPRENTICE JOB	11	2	1
SUPERVISOR	0	*	20
NOT GROUPED	19	12	4

* Denotes less than 1 percent

TABLE 7
TIME SPENT ON DUTIES BY MEMBERS OF SKILL-LEVEL GROUPS
(RELATIVE PERCENT OF JOB TIME)

DUTIES	AFSC 2A732 (N=61)	AFSC 2A752 (N=243)	AFSC 2A772 (N=159)
A ORGANIZING AND PLANNING	*	2	7
B DIRECTING AND IMPLEMENTING	1	3	11
C INSPECTING AND EVALUATING	*	2	8
D TRAINING	*	1	4
E PERFORMING NONDESTRUCTIVE INSPECTION (NDI) ADMINISTRATIVE AND SUPPLY ACTIVITIES	3	6	7
F PERFORMING CORE AUTOMATED MAINTENANCE SYSTEM (CAMS) ACTIVITIES	6	6	7
G PERFORMING PREINSPECTION OR GENERAL NONDESTRUCTIVE INSPECTION (NDI) ACTIVITIES	15	13	8
H PERFORMING BOND OR COMPOSITE TESTING ACTIVITIES	5	3	2
I PERFORMING LIQUID PENETRANT INSPECTIONS	13	10	6
J PERFORMING RADIOGRAPHIC INSPECTIONS	12	13	10
K PERFORMING ULTRASONIC INSPECTIONS	7	7	5
L PERFORMING MAGNETIC PARTICLE INSPECTIONS	15	12	7
M PERFORMING EDDY CURRENT INSPECTIONS	7	7	5
N PERFORMING JOINT OIL ANALYSIS PROGRAM (JOAP) ACTIVITIES	13	13	9
O PERFORMING MOBILITY ACTIVITIES	1	2	3
P PERFORMING CROSS-UTILIZATION TRAINING (CUT) TASKS	*	*	*

* Denotes less than 1 percent

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

TABLE 8
REPRESENTATIVE TASKS PERFORMED BY
AFSC 2A732 PERSONNEL

TASKS	PERCENT MEMBERS PERFORMING (N=61)
G148 CLEAN NDI EQUIPMENT	97
I192 IDENTIFY PENETRANT INDICATIONS	97
G165 PRECLEAN MATERIALS PRIOR TO INSPECTIONS	92
G149 DETERMINE IF MATERIALS ARE FERROUS OR NONFERROUS	95
I197 INTERPRET PENETRANT INDICATIONS	93
G164 POSTCLEAN INSPECTION MATERIALS	92
I193 INSPECT PARTS USING HYDROPHILIC METHOD (METHOD D)	90
G157 LOCATE INFORMATION BY REFERENCE TO TECHNICAL DATA, SUCH AS SPECIFIC INSPECTION METHODS OR CLEANING REQUIREMENTS	90
L269 DEMAGNETIZE MATERIALS	89
I195 INSPECT PARTS USING SOLVENT REMOVABLE PENETRANT PROCESS (METHOD C)	87
L285 PERFORM WET CONTINUOUS MAGNETIC PARTICLE INSPECTIONS USING STATIONARY EQUIPMENT	85
L271 IDENTIFY MAGNETIC PARTICLE INDICATIONS	85
I207 SELECT PENETRANT DWELL TIMES BY REFERENCE TO TECHNICAL DATA	84
N345 SHARPEN OR POLISH ROD ELECTRODES	82
I208 SELECT PENETRANT METHODS	82
G171 VERIFY CLEANLINESS OF MATERIALS FOR INSPECTIONS	82
L287 PERFORM WET RESIDUAL MAGNETIC PARTICLE INSPECTIONS USING STATIONARY EQUIPMENT	80
F120 ACCESS CAMS MENUS AND SCREENS	79
L291 SELECT TYPES OF MAGNETISM TO USE FOR INSPECTIONS	79
F134 OPEN OR CLOSE CAMS	74
N318 ENTER OIL ANALYSIS RESULTS INTO DATA BASES AUTOMATICALLY	74
I201 PERFORM PROCESS CONTROL OF DEVELOPERS	74
J222 DEVELOP RADIOGRAPHIC FILM AUTOMATICALLY	72
G162 PERFORM PROCESS CONTROL OF BLACK LIGHTS	66
F126 CLEAR OR CLOSE OUT COMPLETED DISCREPANCIES IN CAMS	66

TABLE 9
REPRESENTATIVE TASKS PERFORMED BY
AFSC 2A752 PERSONNEL

TASKS	PERCENT MEMBERS PERFORMING (N=243)
G148 CLEAN NDI EQUIPMENT	96
I192 IDENTIFY PENETRANT INDICATIONS	93
G157 LOCATE INFORMATION BY REFERENCE TO TECHNICAL DATA, SUCH AS SPECIFIC INSPECTION METHODS OR CLEANING REQUIREMENTS	91
I197 INTERPRET PENETRANT INDICATIONS	91
L269 DEMAGNETIZE MATERIALS	91
I195 INSPECT PARTS USING SOLVENT REMOVABLE PENETRANT PROCESS (METHOD C)	90
F120 ACCESS CAMS MENUS AND SCREENS	89
G171 VERIFY CLEANLINESS OF MATERIALS FOR INSPECTIONS	89
L271 IDENTIFY MAGNETIC PARTICLE INDICATIONS	89
G164 POSTCLEAN INSPECTION MATERIALS	89
G149 DETERMINE IF MATERIALS ARE FERROUS OR NONFERROUS	88
G153 IDENTIFY DISCREPANCIES USING OPTICAL AIDS	88
I208 SELECT PENETRANT METHODS	87
L285 PERFORM WET CONTINUOUS MAGNETIC PARTICLE INSPECTIONS USING STATIONARY EQUIPMENT	86
M309 SELECT EDDY CURRENT PROBES AND EQUIPMENT	86
M295 CHECK EDDY CURRENT EQUIPMENT SENSITIVITIES USING STANDARDS	86
L272 INTERPRET MAGNETIC PARTICLE INDICATIONS	85
G165 PRECLEAN MATERIALS PRIOR TO INSPECTIONS	84
G162 PERFORM PROCESS CONTROL OF BLACK LIGHTS	84
I193 INSPECT PARTS USING HYDROPHILIC METHOD (METHOD D)	82
F134 OPEN OR CLOSE CAMS	81
J209 ASSEMBLE OR DISASSEMBLE RADIOGRAPHIC EXPOSURE EQUIPMENT	78
F126 CLEAR OR CLOSE OUT COMPLETED DISCREPANCIES IN CAMS	77
N345 SHARPEN OR POLISH ROD ELECTRODES	76
N326 PERFORM JOAP TREND ANALYSIS	72

Table 10 gives examples of tasks that best differentiate the 5-skill level personnel from their junior counterparts. As shown in the table, most tasks reflect higher percentages of 5-skill level personnel performing supervisory types of tasks. This is in line with trends noted in Table 6.

DAFSC 2A772. Seven-skill level personnel represent 34 percent of the survey sample and perform an average of 175 tasks. A shift in job utilization clearly occurs as personnel move from the 5-skill level to the 7-level. This shift can be clearly seen in Table 6. Personnel working in the Core General Inspection job drops dramatically (from 66 percent at the 5-skill level to 26 percent at the 7-level), while there is a major increase in the percentage of 7-skill levels working in the Shop/Assistant NCOIC (36 percent) and Supervisor (20 percent) jobs. Thirty-seven percent of their relative job time is spent on tasks in supervisory, training, and administrative duties, compared to 14 percent at the 5-skill level. However, despite this increase in supervisory responsibilities, the major percentage of their time is still involved with technical duties (see Table 7). Table 11 lists representative tasks performed by these incumbents.

Tasks that best distinguish 7-skill level personnel from their junior counterparts are presented in Table 12. As expected, the difference is a much greater emphasis on managerial functions.

Summary

Members within the AFSC 2A7X2 career ladder progress typically through the career ladder. Three-skill level personnel spend their job time performing only technical tasks. Five-skill level members spend more than 83 percent of their duty time performing technical functions, but have some limited supervisory responsibilities. Seven-skill level personnel perform a mixture of technical and supervisory and managerial tasks.

ANALYSIS OF AFMAN 36-2108 *SPECIALTY DESCRIPTION*

Survey data were compared to the AFMAN 36-2108 *Specialty Description* for Nondestructive Inspection, dated 31 October 1994, effective 31 October 1993. The description is generally accurate, depicting the highly technical aspects of the job.

TABLE 10
TASKS WHICH BEST DIFFERENTIATE BETWEEN
AFSC 2A732 AND AFSC 2A752 PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS	2A732 (N=61)	2A752 (N=243)	DIFFERENCE
D72 CONDUCT OJT	3	50	-47
B43 RESOLVE TECHNICAL PROBLEMS FOR SUBORDINATES	3	38	-35
E107 MAINTAIN RADIOGRAPHIC FILM LIBRARIES	23	58	-35
B47 SUPERVISE NDI SPECIALISTS IN AFSC 45851	3	34	-31
B26 COUNSEL PERSONNEL ON PERSONAL OR MILITARY-RELATED MATTERS	3	32	-29
C49 CONDUCT PERFORMANCE FEEDBACK (PFW) EVALUATION SESSIONS	2	30	-28
E110 MAINTAIN TECHNICAL LIBRARY FILES, SUCH AS TECHNICAL ORDERS (TOs) OR AIR FORCE REGULATIONS (AFRs)	15	42	-27
A9 ESTABLISH WORK METHODS, PRODUCTION CONTROLS, OR INSPECTION PROCEDURES	18	45	-27
B44 SUPERVISE APPRENTICE NONDESTRUCTIVE INSPECTION (NDI) PERSONNEL IN AIR FORCE SPECIALTY CODE (AFSC) 45831	8	35	-27
B27 DEVELOP OR IMPROVE WORK METHODS OR PROCEDURES	18	44	-26
C69 WRITE EPRs	2	28	-26
E100 MAINTAIN EQUIPMENT WITHIN AFOSH STANDARDS, SUCH AS EYEWASH CHECKS AND CONTINUITY CHECKS	38	63	-25
A10 ESTABLISH WORK ORDER PRIORITIES	13	38	-25

TABLE 11
REPRESENTATIVE TASKS PERFORMED BY
AFSC 2A772 PERSONNEL

TASKS	PERCENT MEMBERS PERFORMING (N=159)
B43 RESOLVE TECHNICAL PROBLEMS FOR SUBORDINATES	86
C49 CONDUCT PERFORMANCE FEEDBACK (PFW) EVALUATION SESSIONS	86
B47 SUPERVISE NDI SPECIALISTS IN AFSC 45851	85
C69 WRITE EPRs	85
F120 ACCESS CAMS MENUS AND SCREENS	84
I197 INTERPRET PENETRANT INDICATIONS	84
B41 INVENTORY EQUIPMENT, TOOLS, OR SUPPLIES	83
G157 LOCATE INFORMATION BY REFERENCE TO TECHNICAL DATA, SUCH AS SPECIFIC INSPECTION METHODS OR CLEANING REQUIREMENTS	83
G171 VERIFY CLEANLINESS OF MATERIALS FOR INSPECTIONS	82
F134 OPEN OR CLOSE CAMS	82
B26 COUNSEL PERSONNEL ON PERSONAL OR MILITARY-RELATED MATTERS	80
A10 ESTABLISH WORK ORDER PRIORITIES	79
A13 PLAN OR SCHEDULE WORK ASSIGNMENTS	79
B27 DEVELOP OR IMPROVE WORK METHODS OR PROCEDURES	79
I193 INSPECT PARTS USING HYDROPHILIC METHOD (METHOD D)	78
C50 CONDUCT SELF-INSPECTIONS	74
C55 EVALUATE INSPECTION TECHNIQUES OF SUBORDINATES	73
B40 INTERPRET POLICIES, DIRECTIVES, OR PROCEDURES FOR SUBORDINATES	71
C59 EVALUATE NEW INSPECTION TECHNIQUE PROCEDURES	70
A8 ESTABLISH PERFORMANCE STANDARDS FOR SUBORDINATES	68
C61 EVALUATE PROCESS CONTROL PROGRAMS	66
C57 EVALUATE MAINTENANCE OR USE OF WORKSPACE, EQUIPMENT, OR SUPPLIES	59
B48 SUPERVISE NDI TECHNICIANS IN AFSC 45871	53
A7 ESTABLISH ORGANIZATIONAL POLICIES, OFFICE INSTRUCTIONS (OIs), OR STANDARD OPERATING PROCEDURES (SOPs)	53
A12 PLAN OR PREPARE BRIEFINGS	50

TABLE 12

TASKS WHICH BEST DIFFERENTIATE BETWEEN
AFSC 2A752 AND AFSC 2A772 PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS	2A752 (N=243)	2A772 (N=159)	DIFFERENCE
B25 COORDINATE PERIODIC PHYSICAL EXAMINATIONS WITH MEDICAL FACILITIES	4	33	-29
C52 EVALUATE BUDGETING REQUIREMENTS	3	31	-28
D355 DETERMINE PERSONNEL OR EQUIPMENT REQUIREMENTS FOR DEPLOYMENTS	9	36	-27
F128 COORDINATE CAMS PROBLEMS WITH DATA BASE MANAGERS	30	57	-27
C65 EVALUATE SUGGESTIONS	6	33	-27
C67 INVESTIGATE ACCIDENTS OR INCIDENTS	2	28	-26
B29 DIRECT DEVELOPMENT OR MAINTENANCE OF STATUS BOARDS, GRAPHS, OR CHARTS	16	42	-26
C70 WRITE STAFF STUDIES, SURVEYS, OR SPECIAL REPORTS, OTHER THAN TRAINING REPORTS	3	29	-26
B28 DIRECT COMPUTER SECURITY PROGRAMS	9	35	-26
E104 MAINTAIN MATERIAL CONTROL FUNCTIONS, SUCH AS BENCHSTOCK OR SHOP STOCK	30	56	-26
A5 DRAFT BUDGET REQUIREMENTS	5	31	-26

TRAINING ANALYSIS

Occupational survey data are sources of information that can be used to assist in the development of relevant training programs for entry-level personnel. Factors used to evaluate entry-level Nondestructive Inspection training include jobs performed by first-enlistment (1-48 months TAFMS) personnel, overall distribution of first-enlistment personnel across career ladder jobs, percent first-enlistment members performing specific tasks or using specific equipment items, ratings of how much training emphasis (TE) tasks should receive in formal training, and ratings of relative task difficulty (TD).

First-Enlistment Personnel

The survey data captured the responses of 163 first-enlistment personnel, representing 35 percent of the survey sample. As displayed in Table 13, the majority of their duty time is devoted to technical or administrative task performance, the majority of which is contained in five duties: Performing preinspection or general nondestructive inspection (NDI) activities (14 percent); Performing JOAP activities (14 percent); Performing magnetic particle inspections (13 percent); Performing radiographic inspections (13 percent); and Performing liquid penetrant inspections (12 percent). Table 14 displays the more common tasks performed by first-enlistment personnel. Tables 15 through 18 display the equipment used by first-enlistment personnel. Types of equipment covered in these tables include x-ray, penetrant, magnetic particle, ultrasound, eddy current, bond testing, optical, and oil analysis equipment.

In terms of job utilization, first-enlistment personnel were present in all of the jobs identified in the **SPECIALTY JOBS** section of this report, except the Shop/Assistant NCOIC and Supervisor jobs. Figure 2 shows that 65 percent of all first-term members are in the Core General Inspection job.

TABLE 13

RELATIVE PERCENT OF TIME SPENT ACROSS DUTIES BY
FIRST ENLISTMENT (1-48 MONTHS TAFMS) AFSC 2A7X2 PERSONNEL**

DUTIES	AVERAGE PERCENT TIME SPENT
A ORGANIZING AND PLANNING	*
B DIRECTING AND IMPLEMENTING	1
C INSPECTING AND EVALUATING	*
D TRAINING	*
E PERFORMING NONDESTRUCTIVE INSPECTION (NDI) ADMINISTRATIVE AND SUPPLY ACTIVITIES	4
F PERFORMING CORE AUTOMATED MAINTENANCE SYSTEM (CAMS) ACTIVITIES	6
G PERFORMING PREINSPECTION OR GENERAL NONDESTRUCTIVE INSPECTION (NDI) ACTIVITIES	14
H PERFORMING BOND OR COMPOSITE TESTING ACTIVITIES	4
I PERFORMING LIQUID PENETRANT INSPECTIONS	12
J PERFORMING RADIOGRAPHIC INSPECTIONS	13
K PERFORMING ULTRASONIC INSPECTIONS	7
L PERFORMING MAGNETIC PARTICLE INSPECTIONS	13
M PERFORMING EDDY CURRENT INSPECTIONS	7
N PERFORMING JOINT OIL ANALYSIS PROGRAM (JOAP) ACTIVITIES	14
O PERFORMING MOBILITY ACTIVITIES	2
P PERFORMING CROSS-UTILIZATION TRAINING (CUT) TASKS	*

* Denotes less than 1 percent

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

TABLE 14

REPRESENTATIVE TASKS PERFORMED BY
FIRST-ENLISTMENT AFSC 2A7X2 PERSONNEL

TASKS	PERCENT MEMBERS PERFORMING (N=163)
G148 CLEAN NDI EQUIPMENT	98
I197 INTERPRET PENETRANT INDICATIONS	94
G149 DETERMINE IF MATERIALS ARE FERROUS OR NONFERROUS	94
I192 IDENTIFY PENETRANT INDICATIONS	93
G164 POSTCLEAN INSPECTION MATERIALS	91
G165 PRECLEAN MATERIALS PRIOR TO INSPECTIONS	88
G157 LOCATE INFORMATION BY REFERENCE TO TECHNICAL DATA, SUCH AS SPECIFIC INSPECTION METHODS OR CLEANING REQUIREMENTS	88
I195 INSPECT PARTS USING SOLVENT REMOVABLE PENETRANT PROCESS	87
I193 INSPECT PARTS USING HYDROPHILIC METHODS (METHOD D) (METHOD C)	85
L269 DEMAGNETIZE MATERIALS	88
G162 PERFORM PROCESS CONTROL OF BLACK LIGHTS	87
L271 IDENTIFY MAGNETIC PARTICLE INDICATIONS	86
G153 IDENTIFY DISCREPANCIES USING OPTICAL AIDS	86
G171 VERIFY CLEANLINESS OF MATERIALS FOR INSPECTIONS	85
L285 PERFORM WET CONTINUOUS MAGNETIC PARTICLE INSPECTIONS USING STATIONARY EQUIPMENT	84
I208 SELECT PENETRANT METHODS	83
L291 SELECT TYPES OF MAGNETISM TO USE FOR INSPECTIONS	82
F120 ACCESS CAMS MENUS AND SCREENS	82
N345 SHARPEN OR POLISH ROD ELECTRODES	80
L272 INTERPRET MAGNETIC PARTICLE INDICATIONS	80
F134 OPEN OR CLOSE CAMS	76
N344 REVIEW DD FORMS 2026 (OIL ANALYSIS REQUEST) FOR ACCURACY	74
J222 DEVELOP RADIOGRAPHIC FILM AUTOMATICALLY	73
F125 CLEAR OR CLOSE OUT COMPLETED DISCREPANCIES IN CAMS	72
N318 ENTER OIL ANALYSIS RESULTS INTO DATA BASES AUTOMATICALLY	71

TABLE 15

X-RAY EQUIPMENT USED BY 10 PERCENT OR MORE
OF FIRST-ENLISTMENT PERSONNEL
(1-48 MONTHS TAFMS)

<u>EQUIPMENT USED</u>	PERCENT MEMBERS RESPONDING (N=163)
<u>X-RAY</u>	
X-RAY WARNING LIGHTS	84
FILM VIEWERS	80
SM 400 SURVEY METERS	80
DOSIMETERS, DIGITAL ALARM	76
SPERRY KV160 UNITS	63
PORTABLE X-RAY INTERLOCKS	61
DENSITOMETERS	58
MAGNAFLUX KV150 UNITS	48
CANISTER SILVER RECOVERY UNITS	42
KODAK AUTOMATIC PROCESSING UNITS	35
SPERRY KV300 UNITS	34
DOSIMETERS, OTHER THAN DIGITAL ALARM	31
MANUAL FILM PROCESSORS	29
ELECTROLYTIC SILVER RECOVERY UNITS	27
MANUAL FILM DRYERS	26
WATER CHILLERS	25
RIDGE CORP TUBESTANDS	21
LITTON AUTOMATIC PROCESSING UNITS	20
PORTABLE GENERATORS	18
KODAK P1 PAPER PROCESSORS	12

TABLE 16

PENETRANT AND MAGNETIC PARTICLE EQUIPMENT USED
BY 10 PERCENT OR MORE OF FIRST-ENLISTMENT PERSONNEL
(1-48 MONTHS TAFMS)

<u>EQUIPMENT USED</u>	<u>PERCENT MEMBERS RESPONDING (N=163)</u>
<u>PENETRANT</u>	
BLACK LIGHTS	99
PORTABLE PENETRANT KITS	98
BLACK LIGHT INTENSITY METERS	91
PROCESS CONTROL KITS	91
HYDROPHILIC MATERIALS	82
MA2 PENETRANT LINES	55
SUPER BLACK LIGHTS	31
LIPOPHILIC MATERIALS	18
MA1 PENETRANT LINES	12
MA3 PENETRANT LINES	11
<u>MAGNETIC PARTICLE</u>	
FIELD INDICATORS	99
BLACK LIGHTS	98
DA200 PARKER PROBES	98
KETOS RINGS	93
CENTRIFUGE TUBES	90
DEAD WEIGHTS	89
QUICK-BREAK TESTERS	82
SHUNT METERS	74
MAGNAFLUX STATIONARY UNITS	50
HORSESHOE MAGNETS	28
GRANIER STATIONARY UNITS	26
MAGNAFLUX KHO7s	18
URESCO STATIONARY UNITS	15
BARDALL STATIONARY MAGNETIC UNITS	12

TABLE 17

ULTRASOUND AND EDDY CURRENT EQUIPMENT USED
BY 10 PERCENT OR MORE OF FIRST-ENLISTMENT PERSONNEL
(1-48 MONTHS TAFMS)

<u>EQUIPMENT USED</u>	PERCENT MEMBERS RESPONDING (N=163)
<u>ULTRASOUND</u>	
SONICS MARK 4s	88
SONICS MARK 1s	35
NDT 131s	28
LEAK DETECTOR 235s	20
NDT 127s	17
EPOCHS PANAMETRICS	15
DELCON 118 LEAK DETECTORS	13
USL-48 KRAUTKRAMER BRANSONS	10
ROTO SCANS	10
<u>EDDY CURRENT</u>	
HOCKING UHBs	96
ED 520s	65
MIZ 20s	25
NDT 19s	24
GRANDIA 92836s	17
GULTON FD 100s	15
FM 150s	15
FM 120s	10

TABLE 18

BOND TESTING, OPTICAL, AND OIL ANALYSIS EQUIPMENT USED
BY 10 PERCENT OR MORE OF FIRST-ENLISTMENT PERSONNEL
(1-48 MONTHS TAFMS)

<u>EQUIPMENT USED</u>	PERCENT MEMBERS RESPONDING (N=163)
<u>BOND TESTING</u>	
US 5200	28
210 BOND TESTERS	23
MARK 2B HARMONIC BOND TESTERS	17
S2B SONDICATORS	12
<u>OIL ANALYSIS</u>	
BAIRD ATOMIC AE35U-3S	72
SPECTROIL JRs	37
<u>OPTICAL INSPECTION</u>	
STEREO-ZOOM MICROSCOPES	92
MAGNIFIER/COMPARATORS	62
BORESCOPIES	50

AFSC 2A7X2 FIRST-ENLISTMENT JOB STRUCTURE

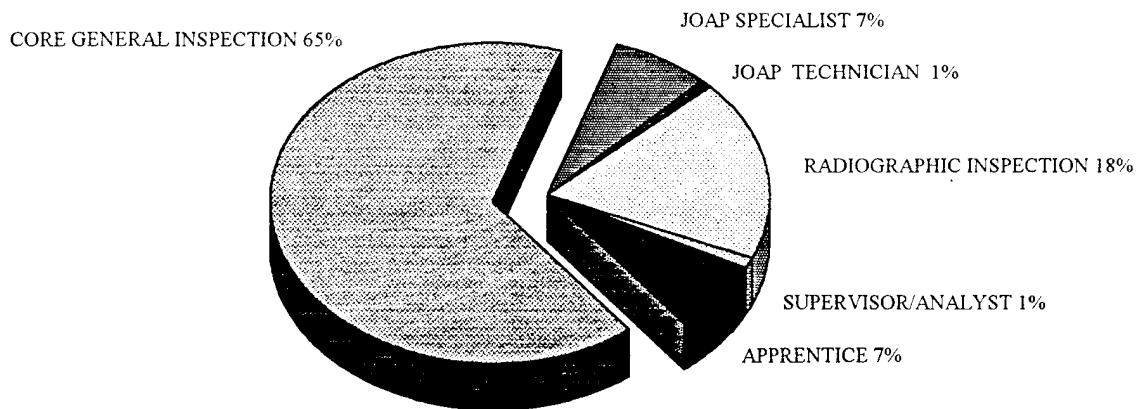


FIGURE 2

TE and TD Data

TE and TD data are secondary factors that can help technical training personnel decide which entry-level training tasks to emphasize. These ratings, based on the judgments of senior career ladder NCOs at operational units, provide training personnel with a rank-ordering of those tasks considered important for first-term airmen training (TE) and a measure of the difficulty of those tasks (TD). When combined with data on the percentages of first-enlistment personnel performing tasks, comparisons can be made to determine if training adjustments are necessary. For example, tasks receiving high ratings on both task factors (TE and TD) accompanied by moderate to high percentages of performance may warrant resident training. Those tasks receiving high task factor ratings but low percentages of performance may be more appropriately planned for OJT. Low task factor ratings may highlight tasks that should be omitted from entry-level training; however, this decision must be weighed against percentages of personnel performing tasks, command concerns, and criticality of tasks.

To assist training development personnel, AFOMS 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 corresponds to training decisions listed and defined in the Training Decision Logic Table found in Attachment 1, AETCR 52-22. ATI allows training developers to quickly focus attention on those tasks that are most likely to qualify for ABR course consideration.

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

Tasks having the highest TE ratings are listed in Table 19. Included for each task are the percentage of first-job and first-enlistment personnel performing and TD rating. As illustrated in the table, most of these tasks relate to performing and interpreting NDI tests and also identifying test indications. Furthermore, many of them are performed by a high percentage and have a high TD rating.

Table 20 lists the tasks having the highest TD ratings. The percentage of first-enlistment, 5-, and 7-skill level personnel performing, and TE ratings are also included. These tasks are primarily administrative and supervisory in nature. The majority of tasks exhibit low TE and are performed by relatively low percentages of 5- and 7-skill level members.

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 ratings, see Task Factor Administration in the **SURVEY METHODOLOGY** section of this report.

Specialty Training Standard (STS)

Nondestructive Inspection personnel from the Randolph AFB NDI shop matched JI tasks to sections and subsections of the Nondestructive Inspection STS. A listing of the STS was then produced, showing tasks matched, percent members performing the tasks, and TE and TD ratings for each task. These listings are included in the Training Extract. Any element with matched tasks performed by 20 percent or more first-job, first-enlistment, 5-, or 7-skill level members is considered to be supported and should be part of the STS.

AFSC 2A7X2 STS

Paragraphs 1 through 8 deal with general topics of safety, supervision, training, technical publications, maintenance management, and inspection. Paragraphs 9 through 20 cover the common aspects of the career ladder. These paragraphs include over 200 individual entries, the majority of which have tasks matched.

The AFSC 2A7X2 STS is generally supported by the survey data. Only two items are not supported by survey data. These items deal with preparing statements of charges (paragraph 5c) and atomic absorption (paragraph 20b(2)). While tasks matched to these items have low TE

TABLE 19

TASKS WITH HIGHEST TRAINING EMPHASIS RATINGS

TASKS	PERCENT MEMBERS PERFORMING			
	TNG	1ST	1ST	TSK
	EMPH	JOB	ENL	DIFF
N326	6.72	68	67	5.99
I197	6.47	84	91	5.59
L272	6.36	77	73	5.67
G157	6.30	83	87	4.63
SPECIFIC INSPECTION METHODS OR CLEANING REQUIREMENTS				
K252	6.28	69	65	6.46
J225	6.23	70	63	7.08
K266	6.23	68	59	6.01
PERFORM PROCESS CONTROL OF ULTRASONIC UNITS, SUCH AS LINEARITY CHECKS				
J224	6.21	71	61	6.31
L271	6.19	76	81	5.24
L285	6.15	73	81	5.00
PERFORM WET CONTINUOUS MAGNETIC PARTICLE INSPECTIONS USING STATIONARY EQUIPMENT				
L283	6.13	62	72	5.03
PERFORM PROCESS CONTROL OF STATIONARY MAGNETIC PARTICLE EQUIPMENT, SUCH AS QUICK-BREAK CHECKS OR SHUNT METER CHECKS				
N324	6.11	56	52	6.66
PERFORM COMPLETE CALIBRATION VERIFICATION CHECKS ON ATOMIC EMISSION SPECTROMETERS				
K265	6.11	65	57	6.02
PERFORM PROCESS CONTROL OF ULTRASONIC TRANSDUCERS, SUCH AS ANGLES OF INCIDENCE OR SKEW ANGLES				
I192	6.11	79	92	5.25
I193	6.09	78	83	5.09
L282	6.09	58	77	4.87
INSPECT PARTS USING HYDROPHILLIC METHOD (METHOD D)				
PERFORM PROCESS CONTROL OF STATIONARY MAGNETIC PARTICLE BATHS				

TABLE 19 (CONTINUED)

TASKS WITH HIGHEST TRAINING EMPHASIS RATINGS

TASKS	PERCENT MEMBERS PERFORMING				TSK DIFF
	TNG	1ST JOB	1ST ENL		
	EMPH				
K254	6.09	65	61	5.77	
K247	6.00	74	71	5.48	
K258	5.96	74	59	6.93	
H295	5.94	78	76	4.83	
I195	5.91	80	85	4.97	
(METHOD C)					
J226	5.91	66	64	4.38	
I204	5.91	62	77	5.19	
I201	5.89	62	81	4.84	
L291	5.85	73	73	4.58	
M293	5.85	73	71	5.40	
STANDARDS AND TECHNICAL DATA					

TABLE 20

TASKS WITH HIGHEST TASK DIFFICULTY RATINGS

TASKS	TSK DIFF	PERCENT MEMBERS PERFORMING						TNG EMPH
		1ST JOB	1ST ENL	AFSC 2A752	AFSC 2A772			
A6	7.56	48	1	28	5		1.85	
C68	7.51	13	1	6	2		.70	
APPRAISALS								
C69	7.15	85	0	44	2		2.09	
B45	7.10	23	0	13	0		1.06	
J225	7.08	70	63	73	59		6.23	
N312	7.05	19	5	18	8		2.51	
SPECTROMETERS								
A7	7.03	53	1	25	3		1.43	
ESTABLISH ORGANIZATIONAL POLICIES, OFFICE INSTRUCTIONS (OIs), OR STANDARD OPERATING PROCEDURES (SOPs)								
H174	7.01	13	7	10	11		2.00	
DESIGN BONDED STRUCTURE STANDARDS, SUCH AS SKIN-TO-CORE OR METAL-TO-METAL								
H176	7.01	16	12	12	18		1.98	
DEVELOP OR IMPROVE COMPOSITE TESTING INSPECTION TECHNIQUES								
A5	6.96	31	1	14	3		.85	
K258	6.93	74	59	74	57		5.96	
E116	6.90	21	0	10	0		2.00	
B32	6.90	52	1	30	5		1.85	
K249	6.90	43	13	33	21		4.28	
C70	6.88	29	1	12	2		.26	
WRITE STAFF STUDIES, SURVEYS, OR SPECIAL REPORTS, OTHER THAN TRAINING REPORTS								
H175	6.86	21	11	14	16		1.98	
C67	6.67	28	1	11	2		.43	
DEVELOP OR IMPROVE BOND TESTING INSPECTION TECHNIQUES								
INVESTIGATE ACCIDENTS OR INCIDENTS								

TABLE 20 (CONTINUED)

TASKS WITH HIGHEST TASK DIFFICULTY RATINGS

TASKS	TSK DIFF	PERCENT MEMBERS PERFORMING						TNG EMPH
		1ST JOB	1ST ENL	AFSC 2A752	AFSC 2A772			
N324	6.66	56	52	60	52	6.11		
PERFORM COMPLETE CALIBRATION VERIFICATION CHECKS ON ATOMIC EMISSION SPECTROMETERS								
C52	6.66	31	0	12	0	.66		
D79	6.65	6	1	4	2	.21		
DEVELOP CURRICULUM MATERIALS, OTHER THAN RESIDENT COURSE								
D80	6.64	4	1	2	2	.19		
E117	6.60	22	0	10	0	.70		
N325	6.59	43	32	44	34	4.79		
PERFORM DIAGNOSTIC CHECKS OF SPECTROMETERS, OTHER THAN REPEATABILITY AND ACCURACY CALCULATIONS								
B46	6.58	13	1	7	2	.60		
SUPERVISE MILITARY PERSONNEL WITH AFSCs OTHER THAN 458X1								
N320	6.57	13	13	14	15	2.30		
PERFORM ACCURACY AND REPEATABILITY CALCULATIONS ON ATOMIC ABSORPTION SPECTROMETERS								

ratings and low percent members performing, they do have high TD ratings (see Table 21). Career field managers and training personnel should review these items closely to ensure they are appropriate for inclusion in future editions of the STS.

Many technical tasks performed by 20 percent or more of at least one of the criterion groups mentioned above are not matched to STS elements (see Table 22). Training personnel should review the complete list of unmatched tasks presented in the Training Extract to ensure the STS is complete.

Plan of Instruction (POI)

Job inventory tasks were also matched by Randolph AFB NDI personnel to related learning objectives in POI C3ABR45831, dated 29 April 1992. The match was validated by the Air Force NDI Training Manager. The method employed was similar to that of the STS analysis. The data examined included percent members performing data by first-job (1-24 months TAFMS) and first-enlistment (1-48 months TAFMS) personnel, as well as TE, TD, and ATI ratings.

POI blocks, units of instruction, and learning objectives were compared to the standards set forth in Attachment 1, AETCR 52-22, dated 17 February 1989 (30 percent or more of the criterion members performing tasks). By this guidance, learning objectives that do not meet these criteria should be considered for elimination from the formal course unless justified on some other acceptable basis.

Review of the tasks matched to the POI reveals that, out of the over 150 matched learning objectives, only four are not supported by OSR data. These four objectives are listed in Table 23. All are in Block VII of the course. On the whole, these objectives exhibit low percent members performing and low ATI, but have above average TD. Training personnel should closely review these areas for appropriateness in keeping these areas in the basic course.

Many technical tasks performed by more than 30 percent of AFSC 2A7X2 are not matched to POI objectives (see Table 24). Some of these tasks exhibit high ATI ratings. Training personnel should review the list of unmatched tasks presented in the Training Extract to ensure the POI is complete.

TABLE 21

AFSC 2A7X2 STS ELEMENTS NOT SUPPORTED BY SURVEY DATA

TASKS	TE	PERCENT PERFORMING						TD
		1ST	1ST	5-	7-	LVL	LVL	
		JOB	ENL	LVL	LVL			
0032	5c. PREPARE STATEMENT OF CHARGES							
E118	PREPARE STATEMENTS OF CHARGES	.47	0	1	1	13		6.36
0193	20b(2). ATOMIC ABSORPTION (AA)							
N312	ASSEMBLE OR DISASSEMBLE ATOMIC ABSORPTION SPECTROMETERS	2.51	5	13	19	19		7.05
N320	PERFORM ACCURACY AND REPEATABILITY CALCULATIONS ON ATOMIC ABSORPTION SPECTROMETERS	2.30	13	14	15	13		6.57
N322	PERFORM ACCURACY AND REPEATABILITY VERIFICATION CHECKS ON ATOMIC ABSORPTION SPECTROMETERS	2.40	11	13	14	9		6.53
N335	PREPARE JOAP SAMPLES FOR ATOMIC ABSORPTION SPECTROMETERS	2.47	11	14	17	12		5.56
N338	PREPARE STANDARDS FOR ATOMIC ABSORPTION SPECTROMETERS	2.47	9	14	15	11		5.40
N340	PROCESS OIL SAMPLES USING ATOMIC ABSORPTION SPECTROMETERS, EXCEPT PWMA _s	1.89	5	8	12	9		5.49
N346	STANDARDIZE ATOMIC ABSORPTION SPECTROMETERS, EXCEPT PWMA _s	2.72	3	7	10	6		6.11

* For an STS Element to be considered unsupported by the survey data, all skill levels and TAFMS groups represented must have percent members performing less than 20 percent

TABLE 22

EXAMPLES OF TECHNICAL TASKS PERFORMED BY 20 PERCENT OR MORE AFSC
2A7X2 GROUP MEMBERS AND NOT REFERENCED TO THE STS

TASKS	PERCENT MEMBERS PERFORMING					TNG EMPH*	TASK DIFF**
	1ST ENL (N=163)	DAFSC		DAFSC			
		2A752 (N=243)	2A772 (N=159)				
G156	83	86	77		5.11	4.45	
G157	88	91	83		6.30	4.63	
H186	34	34	54		4.04	4.17	
N331	52	57	54		5.15	5.27	
N337	64	67	64		5.19	3.82	
O357	29	39	42		2.28	4.13	
O359	24	35	39		1.68	4.08	
O362	42	47	47		1.66	2.78	
O364	29	35	33		1.45	3.79	
O377	33	38	33		1.47	3.53	
P389	22	26	27		1.57	2.82	

* Training Emphasis has an average of 3.10 and a standard deviation of 1.91 (High TE=5.01)

** Average TD rating is 5.00, and the standard deviation is 1.00

TABLE 23

AFSC 2A7X2 POI OBJECTIVES NOT SUPPORTED BY SURVEY DATA

TASKS	TE	ATI	PERCENT MEMBERS PERFORMING			TD
			1ST	JOB	1ST ENL	
0081 V 1c. GIVEN TEN INCOMPLETE STATEMENTS PERTAINING TO THE PRINCIPLES OF SILVER RECOVERY AND A LIST OF RESPONSES, SELECT THE RESPONSE THAT BEST COMPLETES EACH STATEMENT.						
J213 COLLECT SILVER USING CANISTER METHOD	4.02	3	25	29		3.96
J214 COLLECT SILVER USING CHEMICAL PRECIPITATION METHOD	2.85	2	5	10		4.55
J215 COLLECT SILVER USING ELECTROLYTIC METHOD	3.66	7	9	14		4.27
J217 DETERMINE EFFICIENCY OF SILVER RECOVERY SYSTEMS	3.74	7	17	20		4.76
0112 VII 2c. GIVEN A SELECTED BONDED STRUCTURE, APPLICABLE STANDARDS, EDDY-SONIC EQUIPMENT, AND NECESSARY TECHNICAL DATA, INSPECT THE STRUCTURE USING THE EDDY-SONIC METHOD.						
H183 PERFORM EDDY-SONIC TESTING ON METALLIC STRUCTURES	3.87	7	29	26		5.71
0114 VII 3. FUNDAMENTALS OF COMPOSITE INSPECTIONS						
H173 CALIBRATE COMPOSITE TESTING EQUIPMENT TO KNOWN STANDARDS	4.53	7	29	28		5.50
H176 DEVELOP OR IMPROVE COMPOSITE TESTING INSPECTION TECHNIQUES	1.98	2	12	11		7.01

* For a POI objective to be considered unsupported by the survey data, both first-job and first-enlistment categories surveyed must have percent members performing less than 30 percent

TABLE 23 (CONTINUED)

AFSC 2A7X2 POI OBJECTIVES NOT SUPPORTED BY SURVEY DATA

TASKS	TE	ATI	PERCENT MEMBERS PERFORMING				TD
			1ST		1ST		
			JOB	ENL	JOB	ENL	
0115 VII 3a. GIVEN TEN INCOMPLETE STATEMENTS PERTAINING TO THE FUNDAMENTALS OF COMPOSITE STRUCTURES AND A LIST OF RESPONSES, SELECT THE RESPONSE THAT BEST COMPLETES EACH STATEMENT.							
H173 CALIBRATE COMPOSITE TESTING EQUIPMENT TO KNOWN STANDARDS	4.53	7	29	28			5:50

* For a POI objective to be considered unsupported by the survey data, both first-job and first-enlistment categories surveyed must have percent members performing less than 30 percent

TABLE 24

EXAMPLES OF TECHNICAL TASKS PERFORMED BY 30 PERCENT OR MORE AFSC
2A7X2 GROUP MEMBERS AND NOT REFERENCED TO THE POI

TASKS	TE	ATI	1ST JOB	1ST ENL	TD
E107 MAINTAIN RADIOGRAPHIC FILM LIBRARIES	3.30	15	28	43	4.26
G159 PERFORM OPERATOR MAINTENANCE ON OPTICAL AID EQUIPMENT	4.32	8	67	69	3.04
L277 PERFORM OPERATOR MAINTENANCE ON MAGNETIC PARTICLE EQUIPMENT	5.17	18	69	72	4.79
N318 ENTER OIL ANALYSIS RESULTS INTO DATA BASES AUTOMATICALLY	4.32	17	72	71	4.28
N319 ENTER OIL ANALYSIS RESULTS INTO DATA BASES MANUALLY	5.00	17	69	68	4.73
N321 PERFORM ACCURACY AND REPEATABILITY CALCULATIONS ON ATOMIC EMISSION SPECTROMETERS	4.94	17	45	57	6.39
N323 PERFORM ACCURACY AND REPEATABILITY VERIFICATION CHECKS ON ATOMIC EMISSION SPECTROMETERS	5.11	18	48	58	6.45
N325 REPEATABILITY AND ACCURACY CALCULATIONS	4.79	15	32	42	6.59
N326 PERFORM JOAP TREND ANALYSIS	6.72	18	67	71	5.99
N328 PERFORM OPERATOR MAINTENANCE ON ATOMIC EMISSION SPECTROMETERS	5.34	18	48	58	5.41
N331 PERFORM PERIODIC OPERATIONAL INSPECTIONS OF ATOMIC EMISSION SPECTROMETERS	5.15	18	43	52	5.27
N333 PERFORM PREOPERATIONAL INSPECTIONS AND DAILY STANDARDIZATION OF JOAP EQUIPMENT	5.60	18	61	65	5.47
N334 PREPARE CORRELATION RESULTS FORM LETTERS	3.94	15	20	33	4.49
N336 PREPARE JOAP SAMPLES FOR ATOMIC EMISSION SPECTROMETERS	5.34	13	57	66	3.64
N337 PREPARE OIL ANALYSIS RECORDS FOR TRANSIENT AIRCRAFT	5.19	13	59	64	3.82
N339 PREPARE STANDARDS FOR ATOMIC EMISSION SPECTROMETERS	4.91	8	49	58	3.19
N341 PROCESS OIL SAMPLES USING ATOMIC EMISSION SPECTROMETERS	5.66	18	68	71	4.26
N343 PRODUCE BACK-UP DATA FOR JOAP INSPECTIONS	3.21	15	25	35	4.39
N345 SHARPEN OR POLISH ROD ELECTRODES	5.28	13	79	80	2.43
N347 STANDARDIZE ATOMIC EMISSION SPECTROMETERS	5.62	18	49	57	6.07
N349 TRANSFER OR RECEIVE JOAP DATA TO HOST COMPUTERS	3.51	15	32	35	4.74
N350 UPDATE AIRCRAFT JOAP RECORDS IN DATA BASES	3.91	17	47	55	4.92

JOB SATISFACTION ANALYSIS

An examination of job satisfaction indicators can give career ladder managers a better understanding of factors that may affect job performance of career ladder airmen. Therefore, the survey booklet included questions covering job interest, perceived utilization of talents and training, sense of accomplishment from work, and reenlistment intentions. The responses of the current survey sample were then analyzed by making several comparisons: (1) among AFSC 2A7X2 TAFMS groups and a comparative sample of personnel from other Mission Equipment Maintenance career ladders surveyed in 1993 (AFSCs 2E2X1, 2A1X2, 2A6X3, 2E7X1, 2E1X3, 2A6X5, 2A1X4, 2A1X3, 2A4X2, 2A7X1, 2M0X2A, 2M0X1B, and 2A7X3), (2) between current and previous survey TAFMS groups, and (3) across specialty groups identified in the **SPECIALTY JOBS** section of this report.

Table 25 compares first-enlistment (1-48 months TAFMS), second-enlistment (49-96 months TAFMS), and career (97+ months TAFMS) group data to corresponding enlistment groups from other Mission Equipment Maintenance AFSCs surveyed in 1993. These data give a relative measure of how the job satisfaction of AFSC 2A7X2 personnel compares with similar Air Force specialties. Nondestructive Inspection personnel reported generally higher job satisfaction than members of the comparative sample. Although Nondestructive Inspection first-enlistment incumbents expressed less interest in their jobs and did not have a high sense of accomplishment as did members of the comparative sample, they did feel their talents and training were being well used. Second-enlistment personnel had higher overall satisfaction than the comparative sample. The responses of the career group were also higher than those of their counterparts. The area of perceived use of training was an area of difference between the two groups. Ninety-five percent of the Nondestructive Inspection respondents indicated a positive regard towards the training program, with 80 percent of the comparative sample responding positively.

An indication of changes in job satisfaction perceptions within the career ladder is provided in Table 26, which presents TAFMS group data for 1993 respondents and data from the last OSR. Generally, perceptions associated with job satisfaction have improved for all TAFMS groups. Members in the first-enlistment group report higher job interest, and perceived use of training is higher across all TAFMS groups. Sense of accomplishment is lower in both the first-enlistment and career groups.

Table 27 presents job satisfaction data for the jobs identified in the career ladder structure. An examination of these data can reveal the influences of performing certain jobs on overall job satisfaction. Members in all the jobs generally find their jobs interesting. More than any group, the JOAP Specialist personnel found their job to be extremely interesting. Ninety-four percent of the incumbents responded positively when questioned about expressed job interest. The Radiographic Inspection personnel found their job to be the least interesting, but did not respond in an extremely negative fashion. Seventy-five percent of the incumbents found the job interesting. The personnel in the JOAP Technician job felt their talents were used to the greatest degree out of all of the respondents. While the personnel in the JOAP Specialist job were the least convinced that their job utilized their talents, they did feel that the job made good use of their

TABLE 25

COMPARISON OF JOB SATISFACTION INDICATORS FOR AFSC 2A7X2
TAFMS GROUPS IN CURRENT STUDY TO A COMPARATIVE SAMPLE
(PERCENT MEMBERS RESPONDING)**

	1-48 MONTHS TAFMS		49-96 MONTHS TAFMS		97+ MONTHS TAFMS	
	MISSION EQUIPMENT		MISSION EQUIPMENT		MISSION EQUIPMENT	
	2A7X2 (N=163)	MAINTENANCE (N=4,657)	2A7X2 (N=97)	MAINTENANCE (N=3,813)	2A7X2 (N=203)	MAINTENANCE (N=8,073)
<u>EXPRESSED JOB INTEREST</u>						
DULL	4	3	2	10	6	9
SO-SO	13	6	12	15	10	14
INTERESTING	83	91	86	75	84	77
<u>PERCEIVED USE OF TALENTS</u>						
NONE TO VERY LITTLE	23	16	14	19	10	18
FAIRLY WELL TO PERFECT	77	74	85	81	90	82
<u>PERCEIVED USE OF TRAINING</u>						
NONE TO VERY LITTLE	1	14	5	20	7	23
FAIRLY WELL TO PERFECT	98	87	95	80	93	77
<u>SENSE OF ACCOMPLISHMENT FROM JOB</u>						
DISSATISFIED	9	10	11	16	11	17
NEUTRAL	17	11	6	10	11	10
SATISFIED	75	79	82	73	78	73
<u>REENLISTMENT INTENTIONS</u>						
WILL RETIRE	0	0	0	0	24	17
NO OR PROBABLY NO	41	36	19	25	5	9
YES OR PROBABLY YES	58	64	80	75	70	73

* Denotes less than 1 percent

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

-- Comparative data are from AFSCs 2EXXX, 2POX1, 2MXXX, 2WXXX, and 2AXXX (1993)

TABLE 26

COMPARISON OF JOB SATISFACTION INDICATORS FOR AFSC 2A7X2
TAFMS GROUPS IN CURRENT STUDY TO PREVIOUS STUDY**
(PERCENT MEMBERS RESPONDING)

	1-48 MOS TAFMS		49-96 MOS TAFMS		97+ MOS TAFMS	
	2A7X2 (N=163)	458X1 (N=294)	2A7X2 (N=97)	458X1 (N=160)	2A7X2 (N=203)	458X1 (N=236)
<u>EXPRESSED JOB INTEREST</u>						
DULL	4	11	2	16	6	11
SO-SO TO INTERESTING	96	89	99	84	94	89
<u>PERCEIVED USE OF TALENTS</u>						
NONE TO VERY LITTLE	23	12	14	18	10	14
FAIRLY WELL TO PERFECT	77	88	85	82	90	86
<u>PERCEIVED USE OF TRAINING</u>						
NONE TO VERY LITTLE	1	8	5	14	7	12
FAIRLY WELL TO PERFECT	98	92	95	86	93	88
<u>SENSE OF ACCOMPLISHMENT FROM JOB</u>						
DISSATISFIED	9	8	11	16	11	13
NEUTRAL	17	9	6	11	11	8
SATISFIED	75	83	82	73	78	79
<u>REENLISTMENT INTENTIONS</u>						
WILL RETIRE	0	*	0	1	24	18
NO OR PROBABLY NO	41	45	19	38	5	12
YES OR PROBABLY YES	58	54	80	61	70	70

* Denotes less than 1 percent

** Data from previous study collected in 1987

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

TABLE 27

JOB SATISFACTION INDICATORS FOR AFSC 2A7X2 JOBS
(PERCENT MEMBERS RESPONDING)

	CORE			
	GENERAL INSPECTION (ST0103)	JOAP SPECIALIST (ST0062)	JOAP TECHNICIAN (GRP0037)	ASSISTANT NCOIC (ST0083)
<u>EXPRESSED JOB INTEREST</u>				
DULL	5	6	0	1
SO-SO	11	0	19	8
INTERESTING	85	94	81	91
<u>PERCEIVED USE OF TALENTS</u>				
NONE TO VERY LITTLE	15	19	24	8
FAIRLY TO VERY WELL	73	75	62	71
EXCELLENT TO PERFECT	12	6	14	21
<u>PERCEIVED USE OF TRAINING</u>				
NONE TO VERY LITTLE	3	0	10	3
FAIRLY TO VERY WELL	73	56	71	73
EXCELLENT TO PERFECT	24	44	19	24
<u>SENSE OF ACCOMPLISHMENT FROM JOB</u>				
DISSATISFIED	13	0	5	13
NEUTRAL	12	19	14	12
SATISFIED	75	81	81	75
<u>REENLISTMENT INTENTIONS</u>				
WILL RETIRE	3	0	5	3
NO OR PROBABLY NO	24	25	24	24
YES OR PROBABLY YES	72	75	71	72

TABLE 27 (CONTINUED)

JOB SATISFACTION INDICATORS FOR AFSC 2A7X2 JOBS
(PERCENT MEMBERS RESPONDING)

	RADIOGRAPHIC INSPECTION (ST0076)	SUPERVISOR/ ANALYST (ST0051)	APPRENTICE (ST0025)	SUPERVISOR (ST0019)
<u>EXPRESSED JOB INTEREST</u>				
DULL	0	0	8	6
SO-SO	25	18	8	12
INTERESTING	75	82	83	82
<u>PERCEIVED USE OF TALENTS</u>				
NONE TO VERY LITTLE	0	9	17	15
FAIRLY TO VERY WELL	88	82	67	61
EXCELLENT TO PERFECT	13	9	17	24
<u>PERCEIVED USE OF TRAINING</u>				
NONE TO VERY LITTLE	0	10	8	18
FAIRLY TO VERY WELL	56	70	58	64
EXCELLENT TO PERFECT	44	20	33	18
<u>SENSE OF ACCOMPLISHMENT FROM JOB</u>				
DISSATISFIED	0	0	8	45
NEUTRAL	19	10	25	6
SATISFIED	81	90	67	48
<u>REENLISTMENT INTENTIONS</u>				
WILL RETIRE	0	10	0	45
NO OR PROBABLY NO	25	30	50	6
YES OR PROBABLY YES	75	60	50	48

training. The respondents in the Radiographic Inspection job also reported the same training satisfaction that the JOAP Specialists did (44 percent responded that their perceived use of training was excellent to perfect - see Table 27). JOAP Technician personnel and Supervisor/Analyst personnel reported the highest perceived levels of accomplishment from the job, while NDI Apprentice personnel reported the lowest - most likely due to the low average number of tasks performed by this group and the nature of the tasks they perform (shop clean up and equipment maintenance, for example). Finally, the JOAP Technician personnel reported themselves to be the most likely to reenlist, while the Supervisor incumbents were the least likely to re-up. Reenlistment intentions are high in all of the other jobs.

IMPLICATIONS

The Nondestructive Inspection (AFSC 2A7X2) career ladder has not changed much since the last survey in 1987. The jobs still involve oil analysis and various types of inspection. The advancement of CAMS technology has added new responsibilities centering on CAMS related functions.

Career ladder progression is typical, with 3- and 5-skill level technicians primarily performing technical functions. The 7-skill level personnel, due to the technical nature of the career ladder, also perform many technical functions, along with a great deal of supervisory duties.

The AFMAN 36-2108 *Specialty Description* is accurate, and the technical training program is sound, as both the STS and POI are supported by survey data. Job satisfaction data shows that members of the career field are generally satisfied with their jobs.

The Air Force is projected to change the location of the technical training course NLT FY 96. Apart from this change, the career ladder should remain stable in the coming years.

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APPENDIX A

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TABLE A1
CORE GENERAL INSPECTION JOB
(STG103)

TASKS	PERCENT MEMBERS PERFORMING
I197 INTERPRET PENETRANT INDICATIONS	99
G148 CLEAN NDI EQUIPMENT	98
G149 DETERMINE IF MATERIALS ARE FERROUS OR NONFERROUS	98
I192 IDENTIFY PENETRANT INDICATIONS	98
G157 LOCATE INFORMATION BY REFERENCE TO TECHNICAL DATA, SUCH AS SPECIFIC INSPECTION METHODS OR CLEANING REQUIREMENTS	97
G164 POSTCLEAN INSPECTION MATERIALS	97
L271 IDENTIFY MAGNETIC PARTICLE INDICATIONS	97
M295 CHECK EDDY CURRENT EQUIPMENT SENSITIVITIES USING STANDARDS	97
L269 DEMAGNETIZE MATERIALS	96
G162 PERFORM PROCESS CONTROL OF BLACK LIGHTS	96
G171 VERIFY CLEANLINESS OF MATERIALS FOR INSPECTIONS	96
I207 SELECT PENETRANT DWELL TIMES BY REFERENCE TO TECHNICAL DATA	96
L291 SELECT TYPES OF MAGNETISM TO USE FOR INSPECTIONS	96
I198 PERFORM OPERATOR MAINTENANCE ON PENETRANT EQUIPMENT	95
M309 SELECT EDDY CURRENT PROBES AND EQUIPMENT	95
I204 PERFORM PROCESS CONTROL OF PENETRANTS	95
I195 INSPECT PARTS USING SOLVENT REMOVABLE PENETRANT PROCESS (METHOD C)	95
L285 PERFORM WET CONTINUOUS MAGNETIC PARTICLE INSPECTIONS USING STATIONARY EQUIPMENT	95
L290 SELECT TYPES OF CURRENTS TO USE FOR DEMAGNETIZATION	95
I208 SELECT PENETRANT METHODS	94
G153 IDENTIFY DISCREPANCIES USING OPTICAL AIDS	94
I199 PERFORM PERIODIC OPERATIONAL INSPECTIONS OF PENETRANT EQUIPMENT	93
G156 INTERPRET DISCREPANCIES USING OPTICAL AIDS	93
I193 INSPECT PARTS USING HYDROPHILIC METHOD (METHOD D)	93
G165 PRECLEAN MATERIALS PRIOR TO INSPECTIONS	93

TABLE A2
JOAP SPECIALIST JOB
(STG62)

TASKS	PERCENT MEMBERS PERFORMING
G157 LOCATE INFORMATION BY REFERENCE TO TECHNICAL DATA, . SUCH AS SPECIFIC INSPECTION METHODS OR CLEANING REQUIREMENTS	100
G148 CLEAN NDI EQUIPMENT	100
I192 IDENTIFY PENETRANT INDICATIONS	100
L269 DEMAGNETIZE MATERIALS	100
I197 INTERPRET PENETRANT INDICATIONS	100
I195 INSPECT PARTS USING SOLVENT REMOVABLE PENETRANT PROCESS (METHOD C)	100
G156 INTERPRET DISCREPANCIES USING OPTICAL AIDS	100
G164 POSTCLEAN INSPECTION MATERIALS	94
I193 INSPECT PARTS USING HYDROPHILIC METHOD (METHOD D)	94
L271 IDENTIFY MAGNETIC PARTICLE INDICATIONS	94
K254 INSPECT PARTS WITH LONGITUDINAL WAVES USING PULSE ECHO METHOD	94
K247 CALIBRATE ULTRASONIC FLAW DETECTION EQUIPMENT	94
I208 SELECT PENETRANT METHODS	94
G165 PRECLEAN MATERIALS PRIOR TO INSPECTIONS	88
L285 PERFORM WET CONTINUOUS MAGNETIC PARTICLE INSPECTIONS USING STATIONARY EQUIPMENT	88
N345 SHARPEN OR POLISH ROD ELECTRODES	88
G149 DETERMINE IF MATERIALS ARE FERROUS OR NONFERROUS	88
H172 CALIBRATE BOND TESTING EQUIPMENT TO KNOWN STANDARDS	88
I272 INTERPRET MAGNETIC PARTICLE INDICATIONS	88
N326 PERFORM JOAP TREND ANALYSIS	88
K256 INSPECT PARTS WITH SHEAR WAVES	88
G153 IDENTIFY DISCREPANCIES USING OPTICAL AIDS	88
J222 DEVELOP RADIOGRAPHIC FILM AUTOMATICALLY	81
F120 ACCESS CAMS MENUS AND SCREENS	81
N336 PREPARE JOAP SAMPLES FOR ATOMIC EMISSION SPECTROMETERS	81

TABLE A3
JOAP TECHNICIAN JOB
(GRP37)

TASKS	PERCENT MEMBERS PERFORMING
G149 DETERMINE IF MATERIALS ARE FERROUS OR NONFERROUS	100
F120 ACCESS CAMS MENUS AND SCREENS	100
F134 OPEN OR CLOSE CAMS	100
I195 INSPECT PARTS USING SOLVENT REMOVABLE PENETRANT PROCESS (METHOD C)	95
L269 DEMAGNETIZE MATERIALS	95
L272 INTERPRET MAGNETIC PARTICLE INDICATIONS	95
L271 IDENTIFY MAGNETIC PARTICLE INDICATIONS	95
L269 DEMAGNETIZE MATERIALS	95
G157 LOCATE INFORMATION BY REFERENCE TO TECHNICAL DATA, SUCH AS SPECIFIC INSPECTION METHODS OR CLEANING REQUIREMENTS	91
J225 INTERPRET RADIOGRAPHIC INDICATIONS	90
J224 IDENTIFY RADIOGRAPHIC INDICATIONS	90
J222 DEVELOP RADIOGRAPHIC FILM AUTOMATICALLY	90
I192 IDENTIFY PENETRANT INDICATIONS	90
I197 INTERPRET PENETRANT INDICATIONS	90
M295 CHECK EDDY CURRENT EQUIPMENT SENSITIVITIES USING STANDARDS	90
F126 CLEAR OR CLOSEOUT COMPLETED DISCREPANCIES IN CAMS	86
G171 VERIFY CLEANLINESS OF MATERIALS FOR INSPECTIONS	86
I193 INSPECT PARTS USING HYDROPHILIC METHOD (METHOD D)	81
G170 SELECT GENERAL INSPECTION METHODS TO BE USED WHEN SPECIFIC TECHNICAL GUIDANCE IS NOT AVAILABLE	81
N326 PERFORM JOAP TREND ANALYSIS	81
G148 CLEAN NDI EQUIPMENT	81
G164 POSTCLEAN INSPECTION MATERIALS	81
N316 DETERMINE SOURCES OF WEAR METALS OR CONTAMINATION	81
B41 INVENTORY EQUIPMENT, TOOLS, OR SUPPLIES	81
N336 PREPARE JOAP SAMPLES FOR ATOMIC EMISSION SPECTROMETERS	71
N341 PROCESS OIL SAMPLES USING ATOMIC EMISSION SPECTROMETERS	67

TABLE A4
SHOP/ASSISTANT NCOIC JOB
(STG83)

TASKS	PERCENT MEMBERS PERFORMING
I197 INTERPRET PENETRANT INDICATIONS	100
B41 INVENTORY EQUIPMENT, TOOLS, OR SUPPLIES	99
G157 LOCATE INFORMATION BY REFERENCE TO TECHNICAL DATA, SUCH AS SPECIFIC INSPECTION METHODS OR CLEANING REQUIREMENTS	99
G148 CLEAN NDI EQUIPMENT	99
G149 DETERMINE IF MATERIALS ARE FERROUS OR NONFERROUS	99
B27 DEVELOP OR IMPROVE WORK METHODS OR PROCEDURES	97
B26 COUNSEL PERSONNEL ON PERSONAL OR MILITARY-RELATED MATTERS	97
I195 INSPECT PARTS USING SOLVENT REMOVABLE PENETRANT PROCESS (METHOD C)	97
I192 IDENTIFY PENETRANT INDICATIONS	97
G171 VERIFY CLEANLINESS OF MATERIALS FOR INSPECTIONS	97
K263 PERFORM PERIODIC OPERATIONAL INSPECTIONS OF ULTRASONIC EQUIPMENT	97
I208 SELECT PENETRANT METHODS	97
A10 ESTABLISH WORK ORDER PRIORITIES	96
F120 ACCESS CAMS MENUS AND SCREENS	96
L281 PERFORM PROCESS CONTROL OF PORTABLE MAGNETIC PARTICLE UNITS OR MATERIALS, SUCH AS DEAD WEIGHTS OR SPRAY CANS	96
B43 RESOLVE TECHNICAL PROBLEMS FOR SUBORDINATES	95
F134 OPEN OR CLOSE CAMS	95
I193 INSPECT PARTS USING HYDROPHILIC METHOD (METHOD D)	95
L271 IDENTIFY MAGNETIC PARTICLE INDICATIONS	95
L269 DEMAGNETIZE MATERIALS	95
K258 INTERPRET ULTRASONIC FLAW DETECTION INDICATIONS	95
K252 IDENTIFY ULTRASONIC FLAW DETECTION INDICATIONS	95
L278 PERFORM PERIODIC OPERATIONAL INSPECTIONS OF MAGNETIC PARTICLE EQUIPMENT	95
K262 PERFORM OPERATOR MAINTENANCE ON ULTRASONIC EQUIPMENT	95

TABLE A5
RADIOGRAPHIC INSPECTION JOB
(STG76)

TASKS	PERCENT MEMBERS PERFORMING
F134 OPEN OR CLOSE CAMS	100
N318 ENTER OIL ANALYSIS RESULTS INTO DATA BASES AUTOMATICALLY	100
J224 IDENTIFY RADIOGRAPHIC INDICATIONS	100
N341 PROCESS OIL SAMPLES USING ATOMIC EMISSION SPECTROMETERS	100
G171 VERIFY CLEANLINESS OF MATERIALS FOR INSPECTIONS	100
F126 CLEAR OR CLOSEOUT COMPLETED DISCREPANCIES IN CAMS	100
J241 SELECT FILM TYPES FOR RADIOGRAPHIC INSPECTIONS	100
G157 LOCATE INFORMATION BY REFERENCE TO TECHNICAL DATA, SUCH AS SPECIFIC INSPECTION METHODS OR CLEANING REQUIREMENTS	100
J222 DEVELOP RADIOGRAPHIC FILM AUTOMATICALLY	100
I197 INTERPRET PENETRANT INDICATIONS	100
I192 IDENTIFY PENETRANT INDICATIONS	100
J211 CLEAR BARRIER AREAS OF UNAUTHORIZED PERSONNEL	100
G148 CLEAN NDI EQUIPMENT	100
J220 DETERMINE PLACEMENTS AND POSITIONS OF RADIATION WARNING EQUIPMENT	100
I195 INSPECT PARTS USING SOLVENT REMOVABLE PENETRANT PROCESS (METHOD C)	100
B47 SUPERVISE NDI SPECIALISTS IN AFSC 45851	100
A10 ESTABLISH WORK ORDER PRIORITIES	100
N319 ENTER OIL ANALYSIS RESULTS INTO DATA BASES MANUALLY	100
C69 WRITE EPRs	100
G170 SELECT GENERAL INSPECTION METHODS TO BE USED WHEN SPECIFIC TECHNICAL GUIDANCE IS NOT AVAILABLE	100
N345 SHARPEN OR POLISH ROD ELECTRODES	88
N344 REVIEW DD FORMS 2026 (OIL ANALYSIS REQUEST) FOR ACCURACY	88
F120 ACCESS CAMS MENUS AND SCREENS	88
I193 INSPECT PARTS USING HYDROPHILIC METHOD (METHOD D)	88
J225 INTERPRET RADIOGRAPHIC INDICATIONS	88

TABLE A6
SUPERVISOR/ANALYST JOB
(STG51)

TASKS	PERCENT MEMBERS PERFORMING
F126 CLEAR OR CLOSEOUT COMPLETED DISCREPANCIES IN CAMS	100
F120 ACCESS CAMS MENUS AND SCREENS	100
F134 OPEN OR CLOSE CAMS	100
J222 DEVELOP RADIOGRAPHIC FILM AUTOMATICALLY	100
J225 INTERPRET RADIOGRAPHIC INDICATIONS	100
J224 IDENTIFY RADIOGRAPHIC INDICATIONS	100
L272 INTERPRET MAGNETIC PARTICLE INDICATIONS	100
G149 DETERMINE IF MATERIALS ARE FERROUS OR NONFERROUS	100
M299 INTERPRET EDDY CURRENT IMPEDANCE ANALYSIS METER INDICATIONS	100
J211 CLEAR BARRIER AREAS OF UNAUTHORIZED PERSONNEL	100
L271 IDENTIFY MAGNETIC PARTICLE INDICATIONS	100
M295 CHECK EDDY CURRENT EQUIPMENT SENSITIVITIES USING STANDARDS	100
B41 INVENTORY EQUIPMENT, TOOLS, OR SUPPLIES	91
B47 SUPERVISE NDI SPECIALISTS IN AFSC 45851	91
G157 LOCATE INFORMATION BY REFERENCE TO TECHNICAL DATA, SUCH AS SPECIFIC INSPECTION METHODS OR CLEANING REQUIREMENTS	91
A13 PLAN OR SCHEDULE WORK ASSIGNMENTS	91
I195 INSPECT PARTS USING SOLVENT REMOVABLE PENETRANT PROCESS (METHOD C)	91
I192 IDENTIFY PENETRANT INDICATIONS	91
L285 PERFORM WET CONTINUOUS MAGNETIC PARTICLE INSPECTIONS	91
M293 CALIBRATE EDDY CURRENT IMPEDANCE ANALYSIS EQUIPMENT USING STANDARDS AND TECHNICAL DATA	91
L269 DEMAGNETIZE MATERIALS	91
M297 IDENTIFY EDDY CURRENT ANALYSIS INDICATIONS	91
M298 IDENTIFY EDDY CURRENT PHASE ANALYSIS INDICATIONS	91
M294 CALIBRATE EDDY CURRENT PHASE ANALYSIS EQUIPMENT USING STANDARDS AND TECHNICAL DATA	91

TABLE A7
APPRENTICE JOB
(STG25)

TASKS	PERCENT MEMBERS PERFORMING
I297 INTERPRET PENETRANT INDICATIONS	100
I295 INSPECT PARTS USING SOLVENT REMOVABLE PENETRANT PROCESS (METHOD C)	100
G149 DETERMINE IF MATERIALS ARE FERROUS OR NONFERROUS	100
G148 CLEAN NDI EQUIPMENT	100
I192 IDENTIFY PENETRANT INDICATIONS	92
G165 PRECLEAN MATERIALS PRIOR TO INSPECTIONS	83
G164 POSTCLEAN INSPECTION MATERIALS	83
G157 LOCATE INFORMATION BY REFERENCE TO TECHNICAL DATA, SUCH AS SPECIFIC INSPECTION METHODS OR CLEANING REQUIREMENTS	83
I201 PERFORM PROCESS CONTROL OF PENETRANTS	83
N345 SHARPEN OR POLISH ROD ELECTRODES	75
F120 ACCESS CAMS MENUS AND SCREENS	75
I204 PERFORM PROCESS CONTROL OF PENETRANTS	75
G153 IDENTIFY DISCREPANCIES USING OPTICAL AIDS	75
I208 SELECT PENETRANT METHODS	75
G150 DETERMINE IF NONCONDUCTIVE COATING THICKNESSES WILL AFFECT INSPECTIONS	75
N344 REVIEW DD FORMS 2026 (OIL ANALYSIS REQUEST) FOR ACCURACY	67
I193 INSPECT PARTS USING HYDROPHILIC METHOD (METHOD D)	67
L269 DEMAGNETIZE MATERIALS	67
N341 PROCESS OIL SAMPLES USING ATOMIC EMISSION SPECTROMETERS	67
N326 PERFORM JOAP TREND ANALYSIS	67
G162 PERFORM PROCESS CONTROL OF BLACK LIGHTS	67
I202 PERFORM PROCESS CONTROL OF DRYERS	67
F126 CLEAR OR CLOSEOUT COMPLETED DISCREPANCIES IN CAMS	67
I205 PERFORM PROCESS CONTROL OF REMOVERS OR EMULSIFIERS	67
J209 ASSEMBLE OR DISASSEMBLE RADIOGRAPHIC EXPOSURE EQUIPMENT	58

TABLE A8
SUPERVISOR JOB
(STG19)

TASKS	PERCENT MEMBERS PERFORMING
C49 CONDUCT PERFORMANCE FEEDBACK (PFW) EVALUATION SESSIONS	100
B43 RESOLVE TECHNICAL PROBLEMS FOR SUBORDINATES	97
A18 SCHEDULE PERSONNEL FOR LEAVES, PASSES, OR TEMPORARY DUTY (TDY)	97
B26 COUNSEL PERSONNEL ON PERSONAL OR MILITARY-RELATED MATTERS	94
C69 WRITE EPRs	94
A13 PLAN OR SCHEDULE WORK ORDER PRIORITIES	94
C50 CONDUCT SELF-INSPECTIONS	91
B40 INTERPRET POLICIES, DIRECTIVES, OR PROCEDURES FOR SUBORDINATES	91
A10 ESTABLISH WORK ORDER PRIORITIES	88
A7 ESTABLISH ORGANIZATIONAL POLICIES, OFFICE INSTRUCTIONS (OIs), OR STANDING OPERATING PROCEDURES (SOPs)	88
A8 ESTABLISH PERFORMANCE STANDARDS FOR SUBORDINATES	88
B27 DEVELOP OR IMPROVE WORK METHODS OR PROCEDURES	88
B48 SUPERVISE NDI TECHNICIANS IN AFSC 45871	85
A1 ASSIGN PERSONNEL TO DUTY POSITIONS	85
B47 SUPERVISE NDI SPECIALISTS IN AFSC 45851	85
A9 ESTABLISH WORK METHODS, PRODUCTION CONTROLS, OR INSPECTION PROCEDURES	85
B22 COORDINATE ANNUAL RADIATION SURVEYS WITH BIOENVIRONMENTAL PERSONNEL	85
A2 ASSIGN SPONSORS FOR NEWLY ASSIGNED PERSONNEL	82
F120 ACCESS CAMS MENUS AND SCREENS	82
C62 EVALUATE RADIATION SAFETY PROGRAMS	79
A3 DETERMINE REQUIREMENTS FOR SPACE, PERSONNEL, EQUIPMENT, OR SUPPLIES	76
B41 INVENTORY EQUIPMENT, TOOLS, OR SUPPLIES	73
E95 COMPLETE MISCELLANEOUS SUPPLY FORMS, SUCH AS AF FORMS 2005 (ISSUE/TURN IN REQUEST)	73
C61 EVALUATE PROCESS CONTROL PROGRAMS	73
B31 DIRECT HAZARDOUS OR RECYCLABLE MATERIALS DISPOSAL PROGRAMS	64

APPENDIX B

LISTING OF MODULES AND TASK STATEMENTS

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These Task Modules (TMs) were developed in order to organize and summarize the extensive task information for this specialty. The TMs were derived by statistical clustering of the tasks in terms of which tasks are performed by the same incumbents. For example, if an individual performs one Core General Inspection task, the probability is very high that he or she also will perform other one Core General Inspection tasks. Thus, the group of one Core General Inspection tasks can be considered a "natural group" of associated or related tasks (see TM 0001 below). The statistical clustering generally approximates these "natural groupings."

The title of each TM is our best estimate as to the generic subject of the group of tasks. The TMs are useful for organizing the task data into meaningful units and as a way to concisely summarize the extensive job data. However, TMs are only one way to organize the information. Other strategies may also be valid.

0001 Stage 208: CORE GENERAL INSPECTION

- 1 G148 Clean NDI equipment
- 2 G149 Determine if materials are ferrous or nonferrous
- 3 G150 Determine if nonconductive coating thicknesses will affect inspections
- 4 G151 Determine material constructions or compositions
- 5 G152 Determine test standards to be used for inspections
- 6 G153 Identify discrepancies using optical aids
- 7 G155 Identify surface conditions of materials, such as smoothness or roughness
- 8 G156 Interpret discrepancies using optical aids
- 9 G157 Locate information by reference to technical data, such as specific inspection methods or cleaning requirements
- 10 G158 Measure thickness of materials or lengths of indications using hand-measuring devices, such as micrometers or rulers
- 11 G159 Perform operator maintenance on optical aid equipment
- 12 G160 Perform operator maintenance on vehicles
- 13 G161 Perform periodic operational inspections of optical aid equipment
- 14 G162 Perform process control of black lights
- 15 G163 Perform process control of inspection booths
- 16 G164 Postclean inspection materials
- 17 G165 Preclean materials prior to inspections
- 18 G170 Select general inspection methods to be used when specific technical guidance is not available
- 19 G171 Verify cleanliness of materials for inspections
- 20 I191 Establish remover dwell times based upon surface condition of parts or condition of remover
- 21 I192 Identify penetrant indications
- 22 I193 Inspect parts using hydrophilic method (Method D)
- 23 I195 Inspect parts using solvent removable penetrant process (Method C)
- 24 I197 Interpret penetrant indications
- 25 I198 Perform operator maintenance on penetrant equipment
- 26 I199 Perform periodic operational inspections of penetrant equipment
- 27 I200 Perform preoperational inspections of penetrant equipment
- 28 I201 Perform process control of developers
- 29 I202 Perform process control of dryers
- 30 I203 Perform process control of new materials
- 31 I204 Perform process control of penetrants
- 32 I205 Perform process control of removers or emulsifiers

- 33 I206 Perform process control of rinse stations
- 34 I207 Select penetrant dwell times by reference to technical data
- 35 I208 Select penetrant methods
- 36 K247 Calibrate ultrasonic flaw detection equipment
- 37 K252 Identify ultrasonic flaw detection indications
- 38 K254 Inspect parts with longitudinal waves using pulse echo method
- 39 K256 Inspect parts with shear waves
- 40 K258 Interpret ultrasonic flaw detection indications
- 41 K261 Maintain serviceability of reference standards or in-use standards
- 42 K262 Perform operator maintenance on ultrasonic equipment
- 43 K263 Perform periodic operational inspections of ultrasonic equipment
- 44 K264 Perform preoperational inspections of ultrasonic equipment
- 45 K265 Perform process control of ultrasonic transducers, such as angles of incidence or skew angles
- 46 K266 Perform process control of ultrasonic units, such as linearity checks
- 47 L268 Calculate amperage requirements
- 48 L269 Demagnetize materials
- 49 L270 Develop or improve magnetic particle inspection techniques
- 50 L271 Identify magnetic particle indications
- 51 L272 Interpret magnetic particle indications
- 52 L277 Perform operator maintenance on magnetic particle equipment
- 53 L278 Perform periodic operational inspections of magnetic particle equipment
- 54 L279 Perform preoperational inspections of portable magnetic particle equipment
- 55 L280 Perform preoperational inspections of stationary magnetic particle equipment
- 56 L281 Perform process control of portable magnetic particle units or materials, such as dead weights or spray cans
- 57 L282 Perform process control of stationary magnetic particle baths
- 58 L283 Perform process control of stationary magnetic particle equipment, such as quick-break checks or shunt meter checks
- 59 L284 Perform wet continuous magnetic particle inspections using portable equipment
- 60 L285 Perform wet continuous magnetic particle inspections using stationary equipment
- 61 L286 Perform wet residual magnetic particle inspections using portable equipment
- 62 L287 Perform wet residual magnetic particle inspections using stationary equipment
- 63 L289 Select residual or continuous application of magnetic particles
- 64 L290 Select types of currents to use for demagnetization
- 65 L291 Select types of magnetism to use for inspections
- 66 M293 Calibrate eddy current impedance analysis equipment using standards and technical data
- 67 M295 Check eddy current equipment sensitivities using standards
- 68 M297 Identify eddy current impedance analysis indications
- 69 M299 Interpret eddy current impedance analysis meter indications
- 70 M303 Perform eddy current flaw detection inspection techniques, other than thickness measurement
- 71 M305 Perform operator maintenance on eddy current equipment
- 72 M306 Perform periodic operational inspections of eddy current equipment
- 73 M307 Perform preoperational inspections of eddy current equipment
- 74 M309 Select eddy current probes and equipment

0002 Stage 203: RADIOGRAPHIC INSPECTION

- 1 J209 Assemble or disassemble radiographic exposure equipment
- 2 J211 Clear barrier areas of unauthorized personnel
- 3 J212 Clear exposure areas of all personnel
- 4 J216 Coordinate outside radiographic inspections with maintenance control
- 5 J218 Determine if radiographic densities meet predetermined standards
- 6 J219 Determine if radiographic sensitivities meet predetermined standards
- 7 J220 Determine placements and positions of radiation warning equipment
- 8 J221 Develop or improve radiographic exposure techniques
- 9 J222 Develop radiographic film automatically
- 10 J224 Identify radiographic indications
- 11 J225 Interpret radiographic indications
- 12 J226 Measure radiation exposure levels using radiation survey meters
- 13 J227 Perform film exposure corrections
- 14 J228 Perform operator maintenance on film processing equipment
- 15 J229 Perform operator maintenance on radiographic equipment
- 16 J230 Perform periodic operational inspections of film processing equipment
- 17 J231 Perform periodic operational inspections of radiographic equipment
- 18 J232 Perform preoperational checks of x-ray interlock and warning light systems
- 19 J233 Perform preoperational inspections of film processing equipment
- 20 J234 Perform preoperational inspections of radiographic equipment
- 21 J235 Perform process control of films
- 22 J236 Perform process control of radiographic chemicals
- 23 J237 Perform process control of safelights
- 24 J238 Perform radiographic exposure techniques
- 25 J239 Post radiation monitors
- 26 J240 Prepare films for exposures
- 27 J241 Select film types for radiographic inspections
- 28 J244 Select radiographic units prior to performing inspections

0003 Stage 231: OIL ANALYSIS

- 1 E119 Prepare transit JOAP records
- 2 N310 Analyze correlation samples
- 3 N311 Archive aircraft JOAP data
- 4 N314 Compare oil samples received from maintenance against flying schedules
- 5 N316 Determine sources of wear metals or contamination
- 6 N317 Ensure proper alignment of rod sharpening tools
- 7 N318 Enter oil analysis results into data bases automatically
- 8 N319 Enter oil analysis results into data bases manually
- 9 N321 Perform accuracy and repeatability calculations on atomic emission spectrometers
- 10 N323 Perform accuracy and repeatability verification checks on atomic emission spectrometers
- 11 N324 Perform complete calibration verification checks on atomic emission spectrometers
- 12 N326 Perform JOAP trend analysis
- 13 N328 Perform operator maintenance on atomic emission spectrometers
- 14 N331 Perform periodic operational inspections of atomic emission spectrometers
- 15 N333 Perform preoperational inspections and daily standardization of JOAP equipment
- 16 N336 Prepare JOAP samples for atomic emission spectrometers
- 17 N337 Prepare oil analysis records for transient aircraft

- 18 N339 Prepare standards for atomic emission spectrometers
- 19 N341 Process oil samples using atomic emission spectrometers
- 20 N344 Review DD Forms 2026 (Oil Analysis Request) for accuracy
- 21 N345 Sharpen or polish rod electrodes
- 22 N347 Standardize atomic emission spectrometers
- 23 N350 Update aircraft JOAP records in data bases

0004 Stage 194: CAMS

- 1 B41 Inventory equipment, tools, or supplies
- 2 F120 Access CAMS menus and screens
- 3 F123 Change CAMS printer paper
- 4 F126 Clear or closeout completed discrepancies in CAMS
- 5 F134 Open or close CAMS
- 6 F135 Perform CAMS inquiries for scheduled aircraft or support equipment discrepancies
- 7 F137 Perform CAMS inquiries for uncompleted maintenance event listings

0005 Stage 157: DATA FILE MAINTENANCE

- 1 E97 Document process control results
- 2 E98 Maintain aircraft inspection history files
- 3 E100 Maintain equipment within AFOSH standards, such as eyewash checks and continuity checks
- 4 E107 Maintain radiographic film libraries

0006 Stage 145: MAGNETIC PARTICLE/EDDY CURRENT

- 1 L292 Select types of particles to use for inspections
- 2 M296 Develop or improve eddy current inspection techniques
- 3 M308 Perform resistance and continuity checks on eddy current probes

007 Stage 196: EDDY CURRENT PHASE ANALYSIS

- 1 M294 Calibrate eddy current phase analysis equipment using standards and technical data
- 2 M298 Identify eddy current phase analysis indications
- 3 M300 Interpret eddy current phase analysis indications
- 4 M301 Interpret strip chart recordings indications

008 Stage 87: JOAP PROCESSING

- 1 E96 Document JOAP hits or misses
- 2 E101 Maintain JOAP correspondence files
- 3 E102 Maintain JOAP inspection report files
- 4 E103 Maintain JOAP request records
- 5 E113 Prepare JOAP error listings
- 6 E114 Prepare JOAP maintenance action reports
- 7 N315 Copy JOAP data from hard disks to floppy disks
- 8 N325 Perform diagnostic checks of spectrometers, other than repeatability and accuracy calculations
- 9 N334 Prepare correlation results form letters
- 10 N343 Produce back-up data for JOAP inspections
- 11 N349 Transfer or receive JOAP data to host computers

009 Stage 164: JOAP DATA

- 1 N315 Copy JOAP data from hard disks to floppy disks
- 2 N325 Perform diagnostic checks of spectrometers, other than repeatability and accuracy calculations
- 3 N334 Prepare correlation results form letters
- 4 N343 Produce back-up data for JOAP inspections

010 Stage 93: RECORDS MAINTENANCE

- 1 E95 Complete miscellaneous supply forms, such as AF Forms 2005 (Issue/Turn in Request)
- 2 E108 Maintain repair cycle control logs
- 3 E110 Maintain technical library files, such as technical orders (TOs) or Air Force Regulations (AFRs)
- 4 E111 Maintain test measurement or diagnostic equipment (TMDE) status records or charts

011 Stage 100: ULTRASONIC TRAINING

- 1 K246 Calibrate thickness measurement equipment
- 2 K248 Determine modes of transmission, geometries, and frequencies required for selection of transducers
- 3 K249 Develop or improve ultrasonic flaw detection techniques
- 4 K260 Interpret ultrasonic thickness measurement readings

012 Stage 190: COMPOSITE TRAINING

- 1 H172 Calibrate bond testing equipment to known standards
- 2 H173 Calibrate composite testing equipment to known standards
- 3 H177 Identify bond testing indications on composite structures
- 4 H179 Interpret bond testing indications on composite structures
- 5 H181 Perform coin-tap or tap hammer tests
- 6 H187 Perform ultrasonic bond testing on composite structures using pulse-echo method

013 Stage 212: BOND TESTING

- 1 H178 Identify bond testing indications on metallic structures
- 2 H180 Interpret bond testing indications on metallic structures
- 3 H184 Perform operator maintenance on bond testing equipment
- 4 H185 Perform periodic operational inspections of bond testing equipment
- 5 H186 Perform preoperational inspections of bond testing equipment
- 6 H189 Perform ultrasonic bond testing on metallic structures using pulse-echo method

014 Stage 43: FILM PROCESSING

- 1 J210 Charge dosimeters
- 2 J213 Collect silver using canister method
- 3 J217 Determine efficiency of silver recovery systems
- 4 J223 Develop radiographic film manually

015 Stage 201: SUPERVISE AND TRAIN 2A752

- 1 A8 Establish performance standards for subordinates
- 2 A9 Establish work methods, production controls, or inspection procedures
- 3 A10 Establish work order priorities
- 4 A13 Plan or schedule work assignments
- 5 B26 Counsel personnel on personal or military-related matters
- 6 B27 Develop or improve work methods or procedures
- 7 B40 Interpret policies, directives, or procedures for subordinates
- 8 B43 Resolve technical problems for subordinates
- 9 B47 Supervise NDI Specialists in AFSC 45851
- 10 C49 Conduct performance feedback (PFW) evaluation sessions
- 11 C50 Conduct self-inspections
- 12 C69 Write EPRs

016 Stage 154: SUPERVISE AND TRAIN 2A732

- 1 B44 Supervise Apprentice Nondestructive Inspection (NDI) personnel in Air Force Specialty Code (AFSC) 45831
- 2 D74 Conduct OJT
- 3 D77 Counsel trainees on training progress
- 4 D86 Evaluate progress of trainees

017 Stage 124: CHEMICAL/PRECIOUS METALS CONTROL

- 1 B30 Direct hazardous communications programs
- 2 B31 Direct hazardous or recyclable materials disposal programs
- 3 B35 Direct precious metals recovery programs
- 4 E93 Certify status of reparable, serviceable, or condemned parts
- 5 E94 Compare new chemicals with quality product listings

018 Stage 96: MAINTENANCE OF EQUIPMENT AND FILES

- 1 B23 Coordinate equipment maintenance or inspection processing with appropriate agencies
- 2 B29 Direct development or maintenance of status boards, graphs, or charts
- 3 B33 Direct maintenance of administrative or technical files
- 4 B34 Direct maintenance or utilization of equipment
- 5 E104 Maintain material control functions, such as benchstock or shop stock
- 6 E105 Maintain NDI correspondence files, except JOAP
- 7 E106 Maintain NDI report files, except JOAP
- 8 E109 Maintain supply transaction listings, such as daily document registers or priority monitor reports

019 Stage 139: SUPERVISORY TASKS

- 1 A1 Assign personnel to duty positions
- 2 A2 Assign sponsors for newly assigned personnel
- 3 A3 Determine requirements for space, personnel, equipment, or supplies
- 4 B48 Supervise NDI Technicians in AFSC 45871

020 Stage 186: EVALUATE SAFETY AND STORAGE PROCEDURES

- 1 C57 Evaluate maintenance or use of workspace, equipment, or supplies
- 2 C60 Evaluate procedures for storage, inventory, or inspection of property items
- 3 C62 Evaluate radiation safety programs
- 4 C63 Evaluate safety programs, other than radiation safety

021 Stage 184: RADIATION SAFETY

- 1 A14 Plan radiation safety programs
- 2 A15 Plan safety programs, other than radiation safety
- 3 A18 Schedule personnel for leaves, passes, or temporary duty (TDY)
- 4 B22 Coordinate annual radiation surveys with bioenvironmental personnel
- 5 B24 Coordinate film badge concerns with bioenvironmental, such as issues or turn-ins
- 6 B36 Direct radiation safety programs
- 7 B38 Implement safety programs or procedures

0022 Stage 138: PROGRAM PLANNING/DIRECTING

- 1 A6 Establish joint oil analysis program (JOAP) programs
- 2 A7 Establish organizational policies, office instructions (OIs), or standing operating procedures (SOPs)
- 3 A12 Plan or prepare briefings
- 4 B32 Direct JOAP programs

023 Stage 119: OJT

- 1 D72 Assign on-the-job training (OJT) trainers
- 2 D78 Determine training requirements, such as OJT or resident course training requirements
- 3 D82 Direct OJT programs
- 4 D87 Evaluate training methods, techniques, or programs

024 Stage 45: CAMS

- 1 F122 Change CAMS job standard narratives
- 2 F124 Change CAMS work unit codes
- 3 F125 Change CAMS workcenter narratives
- 4 F127 Conduct CAMS training
- 5 F128 Coordinate CAMS problems with data base managers
- 6 F129 Correct CAMS errors noted during daily verification process
- 7 F130 Create aircraft or support equipment discrepancies in CAMS
- 8 F131 Defer aircraft or support equipment discrepancies in CAMS
- 9 F132 Determine CAMS training requirements
- 10 F133 Maintain workcenter training programs using CAMS
- 11 F136 Perform CAMS inquiries for training status
- 12 F138 Perform CAMS inquiries to monitor delayed discrepancies prior to, during, or after scheduling maintenance
- 13 F139 Perform CAMS interface with base supply systems, such as checking parts status or ordering maintenance assets
- 14 F140 Plan or schedule CAMS training
- 15 F141 Reschedule aircraft or support equipment discrepancies in CAMS
- 16 F142 Review and update CAMS error listings
- 17 F143 Schedule aircraft or support equipment discrepancies in CAMS

- 18 F144 Start or stop CAMS job following events
- 19 F145 Track CAMS job following events
- 20 F146 Track manning data using CAMS
- 21 F147 Verify accuracies of daily inputs in CAMS

025 Stage 29: CLASSROOM TRAINING

- 1 D71 Administer or score tests
- 2 D76 Conduct training conferences or briefings
- 3 D83 Direct training programs, other than OJT
- 4 D84 Establish or maintain study reference files
- 5 D89 Procure training aids, space, or equipment

026 Stage 31: MOBILITY

- 1 O351 Accomplish mobility processing checklists
- 2 O352 Build mobility pallets
- 3 O353 Detect and report chemical warfare agents
- 4 O354 Determine load lists or placards for mobility pallets
- 5 O356 Determine weights of mobility containers or pallets
- 6 O357 Don or doff chemical warfare personal protective clothing
- 7 O358 Establish equipment security at mission locations
- 8 O359 Fire weapons for proficiency
- 9 O360 Identify and report suspected ordnance
- 10 O361 Inspect mobility containers or pallets
- 11 O362 Maintain immunization records
- 12 O363 Maintain security throughout flight phase of deployments
- 13 O364 Pack or unpack individual mobility equipment for deployments
- 14 O365 Pack or unpack mobility containers or pallets
- 15 O366 Participate in predeployment mobility briefings
- 16 O370 Perform decontamination procedures for chemical warfare agents
- 17 O372 Perform first-aid lifesaving techniques
- 18 O373 Place load lists or placards on mobility pallets
- 19 O374 Practice alert force exercises
- 20 O375 Prepare itemized listings for mobility containers
- 21 O376 Prepare mobility containers or pallets for air shipment
- 22 O377 Prepare personal clothing and equipment for deployments
- 23 O378 Prepare shipping documents or forms or reshipment documents or forms for mobility equipment
- 24 O380 Store equipment at mission locations
- 25 O381 Weatherproof mobility containers or pallets

0027 Stage 72: ULTRASONIC LEAK DETECTION

- 1 K250 Develop or improve ultrasonic leak detection techniques
- 2 K251 Develop or improve ultrasonic thickness measurement techniques
- 3 K253 Identify ultrasonic leak detection indications
- 4 K259 Interpret ultrasonic leak detection indications

028 Stage 14: MAGNETIC PARTICLE INSPECTIONS

- 1 I194 Inspect parts using lypophillic method (Method B)
- 2 L267 Apply or remove magnetic rubber
- 3 L273 Perform dry continuous magnetic particle inspections using portable equipment
- 4 L274 Perform dry continuous magnetic particle inspections using stationary equipment
- 5 L275 Perform dry residual magnetic particle inspections using portable equipment
- 6 L276 Perform dry residual magnetic particle inspections using stationary equipment

029 Stage 15: SPECTROMETRY

- 1 N312 Assemble or disassemble atomic absorption spectrometers
- 2 N320 Perform accuracy and repeatability calculations on atomic absorption spectrometers
- 3 N322 Perform accuracy and repeatability verification checks on atomic absorption spectrometers
- 4 N327 Perform operator maintenance on atomic absorption spectrometers, except portable wear metal analyzers (PWMA's)
- 5 N329 Perform operator maintenance on PWMA spectrometers
- 6 N330 Perform periodic operational inspections of atomic absorption spectrometers, except PWMA's
- 7 N332 Perform periodic operational inspections of PWMA spectrometers
- 8 N335 Prepare JOAP samples for atomic absorption spectrometers
- 9 N338 Prepare standards for atomic absorption spectrometers
- 10 N340 Process oil samples using atomic absorption spectrometers, except PWMA's
- 11 N342 Process oil samples using PWMA's
- 12 N346 Standardize atomic absorption spectrometers, except PWMA's
- 13 N348 Standardize PWMA spectrometers

030 Stage 8: TRAINING

- 1 B45 Supervise civilians
- 2 C68 Write civilian performance ratings or supervisory appraisals
- 3 D73 Assign resident course instructors
- 4 D75 Conduct resident course classroom training
- 5 D79 Develop curriculum materials, other than resident course
- 6 D80 Develop resident course curriculum materials
- 7 D81 Develop tests
- 8 D91 Write test questions
- 9 D92 Write training reports
- 10 E116 Prepare overexposure reports
- 11 E117 Prepare reports of survey
- 12 E118 Prepare statements of charges

031 Stage 2: CUT

- 1 O367 Perform aircraft cocking or uncocking procedures
- 2 O368 Perform cargo courier duties
- 3 O369 Perform classified courier duties
- 4 O371 Perform disease and pestilence countermeasures
- 5 O379 Reconfigure aircraft for specific mission requirements
- 6 P382 Apply external alternating current (AC) and direct current (DC) power to aircraft
- 7 P383 Assist in aircraft brake changes
- 8 P384 Assist in aircraft ground defueling operations
- 9 P385 Assist in aircraft ground refueling operations
- 10 P386 Assist in aircraft preflight or postflight inspections
- 11 P387 Assist in aircraft tire changes
- 12 P388 De-ice aircraft
- 13 P390 Marshall aircraft
- 14 P391 Perform wing walking
- 15 P392 Place or remove aircraft wheel chocks
- 16 P393 Service aircraft latrines
- 17 P394 Tow aircraft
- 18 P395 Wash aircraft

032 Tasks not referenced

- 1 A4 Develop organizational or functional charts
- 2 A5 Draft budget requirements
- 3 A11 Plan layouts of facilities
- 4 A16 Plan security programs
- 5 A17 Review mobility, disaster preparedness, or unit emergency or alert plans
- 6 A19 Write job descriptions
- 7 B20 Complete personnel action requests
- 8 B21 Conduct staff meetings
- 9 B25 Coordinate periodic physical examinations with medical facilities
- 10 B28 Direct computer security programs
- 11 B37 Implement cost-reduction programs or procedures
- 12 B39 Implement security programs or procedures
- 13 B42 Maintain or update contingency plans
- 14 B46 Supervise military personnel with AFSCs other than 458X1
- 15 C51 Evaluate administrative forms, files, or procedures
- 16 C52 Evaluate budgeting requirements
- 17 C53 Evaluate individuals for promotion, demotion, or reclassification
- 18 C54 Evaluate inspection report findings
- 19 C55 Evaluate inspection techniques of subordinates
- 20 C56 Evaluate job descriptions
- 21 C58 Evaluate mobility, disaster preparedness, or unit emergency or alert plans
- 22 C59 Evaluate new inspection technique procedures
- 23 C61 Evaluate process control programs
- 24 C64 Evaluate security programs
- 25 C65 Evaluate suggestions
- 26 C66 Indorse enlisted performance reports (EPRs)
- 27 C67 Investigate accidents or incidents

- 28 C70 Write staff studies, surveys, or special reports, other than training reports
- 29 D85 Evaluate performance of instructors or trainers
- 30 D88 Maintain training records, charts, or graphs, other than core automated maintenance system (CAMS)
- 31 D90 Select individuals for specialized training
- 32 E99 Maintain due-in from maintenance (DIFM) forms or listings
- 33 E112 Perform cost comparisons when ordering or upgrading materials
- 34 E115 Prepare narrative correspondence in draft or final form
- 35 F121 Analyze CAMS data
- 36 G154 Identify material types or compositions using conductivity meters
- 37 G166 Record indications by photographic methods
- 38 G167 Record indications by scotch tape methods
- 39 G168 Record indications by sketch methods
- 40 G169 Remove or dispose of hazardous or recyclable materials
- 41 H174 Design bonded structure standards, such as skin-to-core or metal-to-metal
- 42 H175 Develop or improve bond testing inspection techniques
- 43 H176 Develop or improve composite testing inspection techniques
- 44 H182 Perform eddy sonic testing on composite structures
- 45 H183 Perform eddy sonic testing on metallic structures
- 46 H188 Perform ultrasonic bond testing on composite structures using through transmission method
- 47 H190 Perform ultrasonic bond testing on metallic structures using through transmission method
- 48 I196 Inspect parts using water washable penetrant method (Method A)
- 49 J214 Collect silver using chemical precipitation method
- 50 J215 Collect silver using electrolytic method
- 51 J242 Select image quality enhancers, such as lead shields or lead screens
- 52 J243 Select image quality indicators, such as penetrameters or step wedges
- 53 K245 Assemble or disassemble ultrasonic flaw detection equipment
- 54 K255 Inspect parts with longitudinal waves using through transmission method
- 55 K257 Inspect parts with surface waves
- 56 M302 Perform conductivity testing using eddy current equipment
- 57 M304 Perform eddy current thickness measurement inspections
- 58 N313 Clear JOAP data base computer-generated alarms
- 59 O355 Determine personnel or equipment requirements for mission deployments
- 60 P389 Inspect ramp areas for foreign object damage (FOD) matter