

Occupational Survey Report

2A6X4

AIRCRAFT FUEL SYSTEMS

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Air Force Occupational Measurement Squadron
Air Education and Training Command

REPORT DOCUMENTATION PAGE

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13. SUPPLEMENTARY NOTES
14. ABSTRACT Aircraft Fuel Systems personnel remove, repair, inspect, Aircraft Fuel Systems personnel remove, repair, inspect, install, and modify aircraft fuel systems including integral install, and modify aircraft fuel systems including integral fuel tanks, bladder cells, and external tanks. fuel tanks, bladder cells, and external tanks.
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WORK PERFORMED BY MEMBERS OF THE CAREER LADDER

- ◆ Aircraft Fuel Systems personnel remove, repair, inspect, install, and modify aircraft fuel systems including integral fuel tanks, bladder cells, and external tanks.

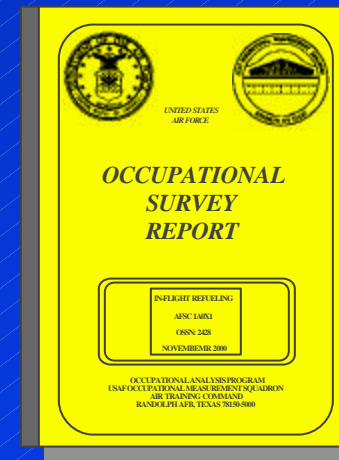


OVERVIEW

- ◆ **BACKGROUND**
- ◆ **CURRENT TRAINING PROGRAM**
- ◆ **CHARACTERISTICS OF THE SURVEY SAMPLE**
- ◆ **JOB STRUCTURE**
- ◆ **CAREER LADDER PROGRESSION**
- ◆ **TRAINING ANALYSIS**
- ◆ **JOB SATISFACTION**
- ◆ **IMPLICATIONS**

SURVEY BACKGROUND

- ◆ SURVEY INITIATED TO OBTAIN DATA AND TO EVALUATE CURRENT CLASSIFICATION AND TRAINING DOCUMENTS
- ◆ LAST OSR COMPLETED:
AUGUST 1998
- ◆ SURVEYED AD, ANG, & RES



CURRENT TRAINING PROGRAM

- ◆ **AFSC AWARDING COURSE**

- ◆ **361 TRS/TRR, SHEPPARD AFB, TX**

J3ABR2A634, Aircraft Fuels Systems Apprentice Course, 7 weeks, 2 days
(13 Semester hours for CCAF)



Survey Sample Characteristics

	<u>AD</u>	<u>ANG</u>	<u>AFRC</u>	<u>Total</u>
• SURVEYED -	1,497	818	467	2,782
• TOTAL IN SAMPLE -	964 (64%)	426 (52%)	248 (53%)	1,638 (59%)
	(percent of surveyed)			

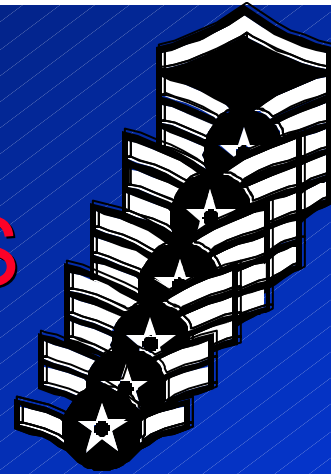
Assigned strength of all components: 2,912

Average time in career field for AD: 8 Years

Average total active federal military service for AD: 8 Years 5 Month

Percent of AD in first enlistment: 22%

SURVEY SAMPLE CHARACTERISTICS



SKILL LEVEL DISTRIBUTION

	<u>ASSIGNED</u>	<u>SAMPLE</u>
3-Level	18%	19%
5-Level	52%	49%
7-Level	30%	32%

PAYGRADE DISTRIBUTION

	<u>ASSIGNED</u>	<u>SAMPLE</u>
E-1 - E-3	16%	15%
E-4	22%	22%
E-5	27%	27%
E-6	22%	24%
E-7	13%	12%

COMMAND REPRESENTATION OF SURVEY SAMPLE

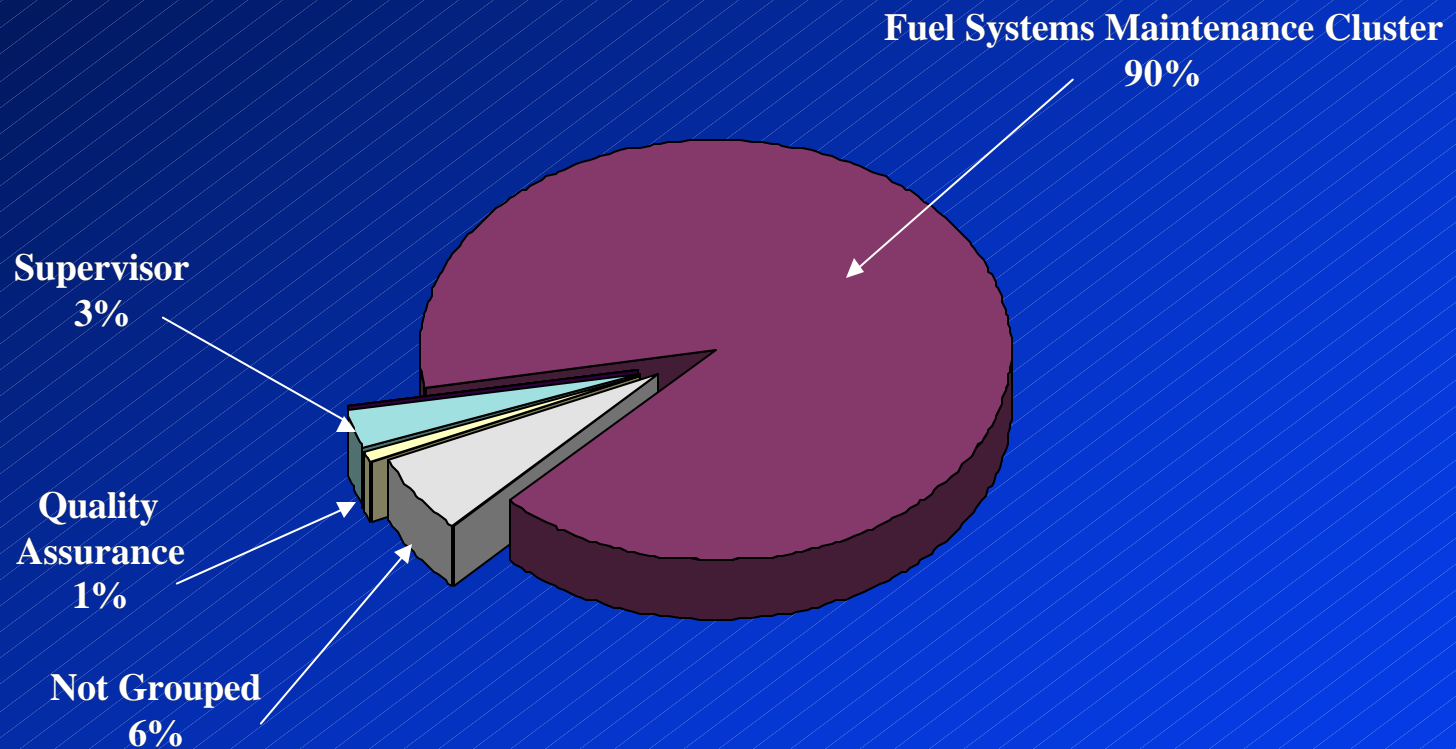


Command	% of Assigned	% of Sample
ANG	29	27
ACC	23	24
AFRC	15	15
AMC	10	8
PACAF	8	8
AETC	5	6
USAFE	5	6
AFMC	3	3
AFSOC	2	3

JOB STRUCTURE

AFSC 2A6X4 CAREER LADDER JOBS

(N = 1,638)



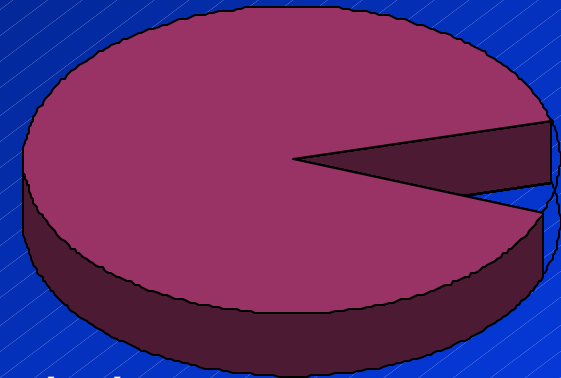
AFSC 2A6X4 JOB STRUCTURE

FUEL SYSTEMS MAINTENANCE

CLUSTER

(N=1,481)

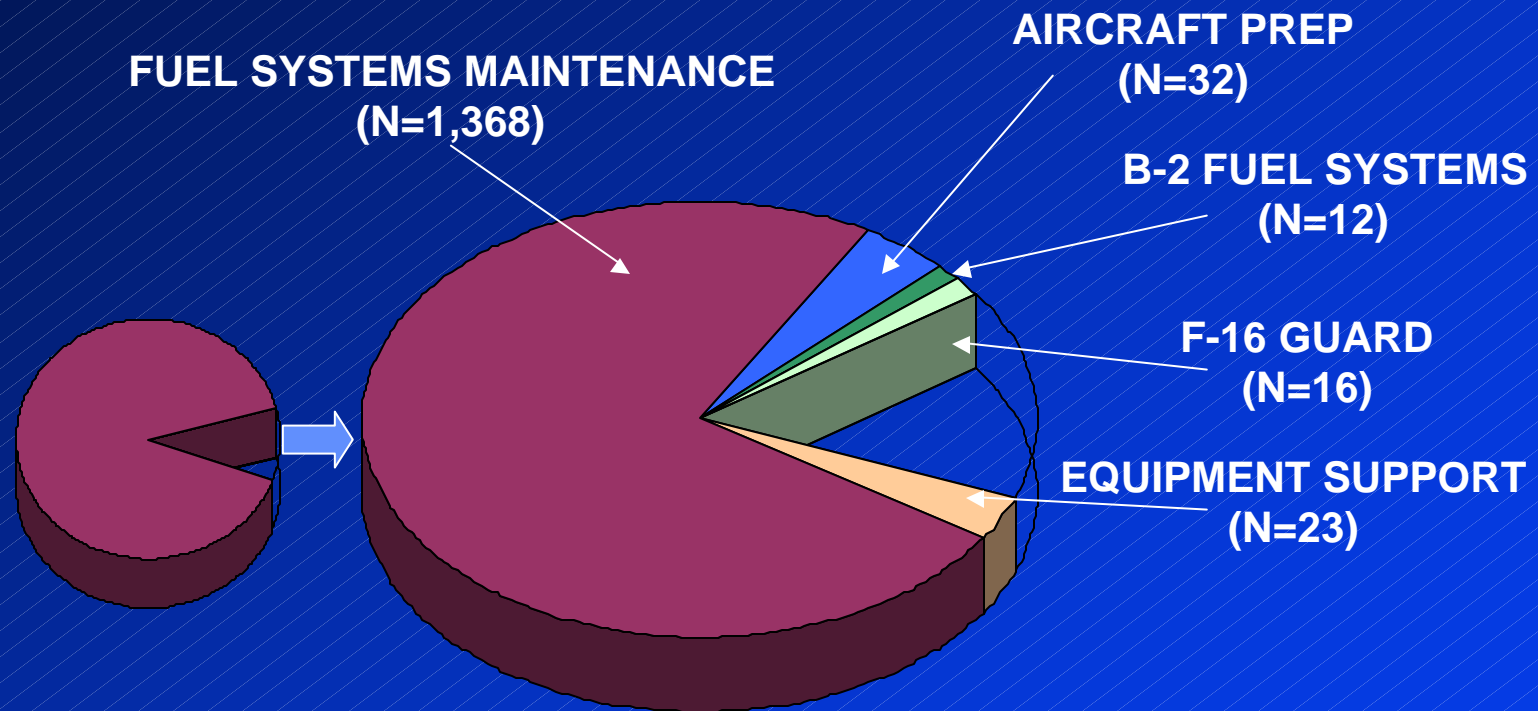
- ◆ Interpret aircraft fuel system schematics
- ◆ Clean or lubricate hand tools or special tools
- ◆ Isolate malfunctions of vent systems
- ◆ Purge fuel tanks or cells using exhaust purge method
- ◆ Inspect support equipment prior to use
- ◆ Don or doff respirators
- ◆ Position drip pans
- ◆ Apply fillet seals, such as first coat, by hand
- ◆ Clean damaged sealant areas
- ◆ Perform leak path analyses on integral fuel tanks
- ◆ Test sealants for adhesion



Avg number of tasks
performed - 210

AFSC 2A6X4 JOB STRUCTURE

JOBS WITHIN THE FUEL SYSTEMS MAINTENANCE CLUSTER



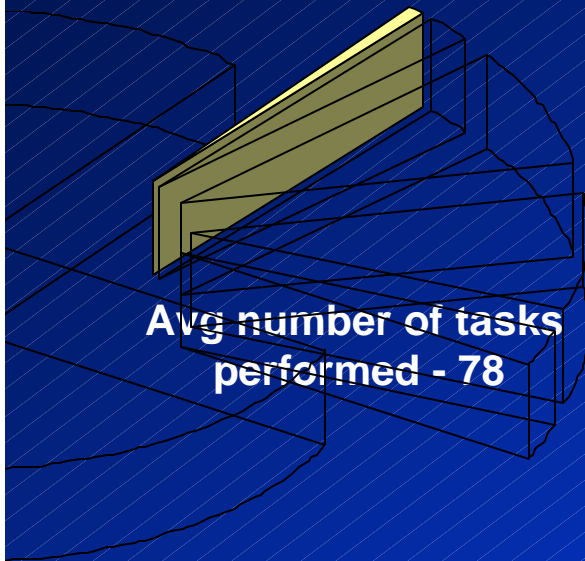
AFSC 2A6X4 SUPERVISOR JOB (N=43)



Avg number of tasks
performed - 107

- ◆ Counsel subordinates concerning personal matters
- ◆ Determine or establish work assignments or priorities
- ◆ Write recommendations for awards or decorations
- ◆ Conduct self-inspections or self-assessments
- ◆ Inspect personnel for compliance with military standards
- ◆ Interpret policies, directives, or procedures for subordinates
- ◆ Conduct supervisory performance feedback sessions
- ◆ Evaluate personnel for promotion, demotion, reclassification, or special awards
- ◆ Assign personnel to work areas or duty position

AFSC 2A6X4 QUALITY ASSURANCE JOB (N=10)

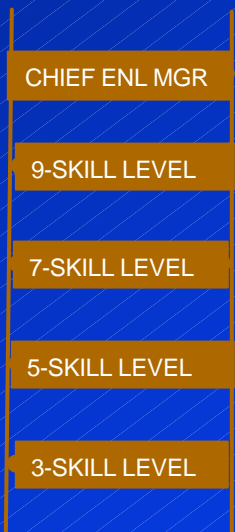


- ◆ Inspect installed fuel quantity indicating system components
- ◆ Evaluate serviceability of equipment, tools, parts, or supplies
- ◆ Write inspection reports
- ◆ Evaluate personnel for compliance with performance standards
- ◆ Investigate accidents or incidents
- ◆ Conduct safety inspections of equipment or facilities
- ◆ Evaluate job hazards or compliance with Air Force Occupational Safety and Health (AFOSH) program
- ◆ Review TO changes
- ◆ Complete accident or incident reports

CAREER LADDER PROGRESSION

◆ 3- and 5-skill level personnel work in the most technical jobs in the career field and spend most of their time on technical tasks.

◆ 7- skill level personnel perform more supervisory, training, and administrative tasks but still spend a large portion of their time performing tasks considered technical in nature.



CAREER LADDER PROGRESSION

RELATIVE PERCENT TIME SPENT ON DUTIES ACROSS SKILL LEVELS (ACTIVE DUTY)

	DAFSC 2A634 (N=308)	DAFSC 2A654 (N=451)	DAFSC 2A674 (N=205)
A-PERFORMING SUPPORT ACTIVITIES	17	15	10
B-PREPARED AIRCRAFT FOR FUEL SYSTEMS MAINTENANCE	17	14	9
C-TROUBLESHOOTING AIRCRAFT FUEL SYSTEMS	17	14	9
D-INSPECTING AIRCRAFT FUEL SYSTEMS	12	13	12
E-REMOVING/INSTALLING AIRCRAFT FUEL SYSTEMS COMPONENTS	16	15	8
F-REPAIRING AIRCRAFT FUEL SYSTEMS COMPONENTS	5	3	2
G-REPAIRING INTEGRAL FUEL TANKS	8	7	4
H-PERFORMING GENERAL AIRCRAFT OR (CUT) ACTIVITIES	1	2	1
I-PERFORMING MOBILITY ACTIVITIES	1	2	4
J-PERFORMING AUTOMATED MAINTENANCE SYSTEMS ACTIVITIES	2	3	6
K-PERFORMING MANAGEMENT AND SUPERVISORY ACTIVITIES	1	6	22
L-PERFORMING TRAINING ACTIVITIES	1	3	6
M-GENERAL ADMIN. AND TECH ORDER SYSTEM ACTIVITIES	1	1	4
N-PERFORMING GENERAL SUPPLY AND EQUIPMENT ACTIVITIES	1	2	3

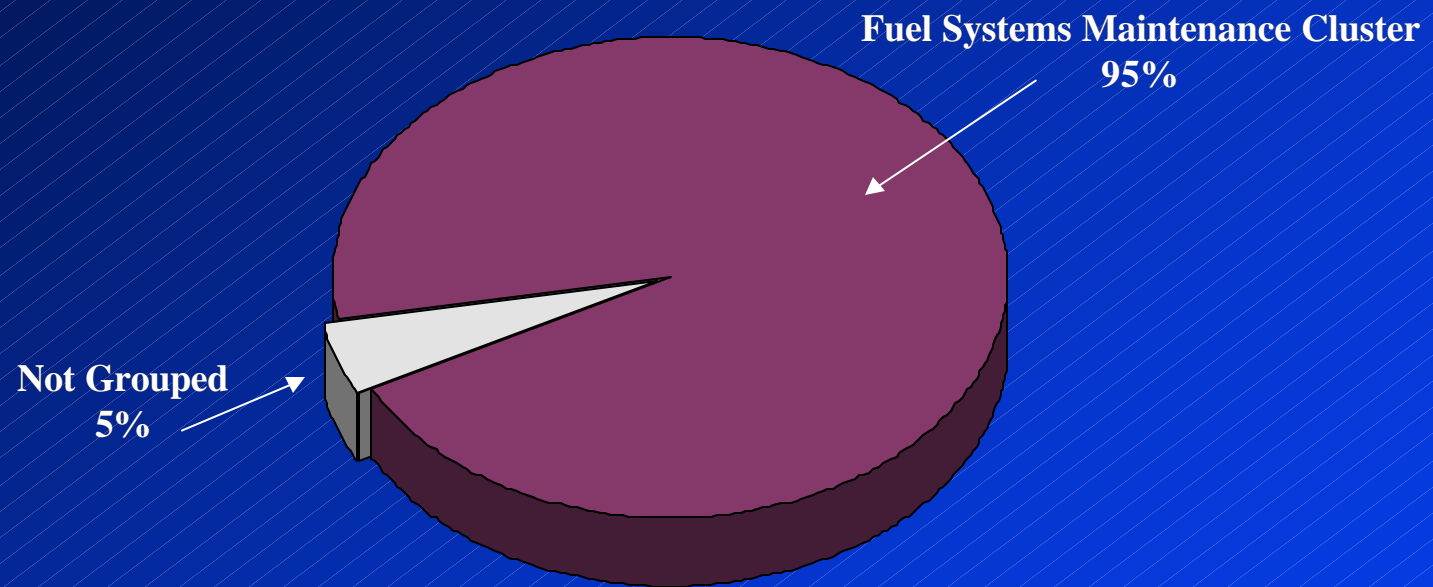
DISTRIBUTION OF DAFSC MEMBERS ACROSS SPECIALTY CLUSTERS & JOBS

	DAFSC 2A634 (N=308)	DAFSC 2A654 (N=802)	DAFSC 2A674 (N=528)
FUEL SYSTEMS MAINTENANCE CLUSTER	96	93	83
QUALITY ASSURANCE JOB	0	*	1
SUPERVISOR JOB	0	*	7
NOT GROUPED	4	6	9

* Less than 1 percent



FIRST-ENLISTMENT AD PERSONNEL JOBS (N = 366)



REPRESENTATIVE TASKS PERFORMED BY AD FIRST-ENLISTMENT PERSONNEL

TASKS

PERCENT
MEMBERS
PERFORMING
(N=366)

G0340	Apply adhesion promoters prior to applying sealants	82
C0143	Perform leak classification	82
C0129	Operationally check crossfeed or engine-feed systems	82
B0094	Pull circuit breakers	81
E0227	Connect or disconnect B-nut-type fittings	81
C0138	Operationally check transfer systems	81
C0126	Localize fuel leak exits	79
G0361	Mix sealants using machines	77
B0092	Position drip pans	77
A0047	Prepare aircraft for fuel cell removal or installation	77
C0113	Isolate malfunctions of crossfeed or engine-feed systems	77
C0167	Test sealants for adhesion	77

TOOLS OR EQUIPMENT USED OR OPERATED BY ACTIVE DUTY FIRST-ENLISTMENT PERSONNEL

EQUIPMENT	1st ENL (N=366)
TORQUE WRENCHES	95
MAINTANENCE STANDS, LIKE B-1/B-4A	92
BOWSERS	91
MAINTENANCE STANDS	88
SEALANT SCRAPERS	86
MULTIMETERS	85
SEALANT GUNS	83
CANVAS TOOL BAGS	83
ADAPTER KITS/TORQUE WRENCHES, LIKE STAR FITTINGS	82
LOW PAC AIR COMPRESSORS	81
HDU-13M HEATER BLOWERS	81
PRESSURE GAUGES	79
SEALANT SPATULAS	78
MC7 AIR COMPRESSORS	76

STS/POI REVIEW (OVERVIEW)

STS and POI provide comprehensive coverage
Tasks not referenced warrant review for inclusion
Few POI entries unsupported by survey data



STS ANALYSIS

(EXAMPLES OF TASKS NOT REFERENCED TO STS)

TASKS	TSK DIF	1st JOB (N=150)	1st ENL (N=366)	TNG EMP
A0054 Purge removed components prior to shipment	3.36	65	69	3.02
B0070 Check aircraft for explosives	3.54	65	69	5.15
B0089 Perform aircraft safe for maintenance procedures	4.40	81	87	6.17
B0094 Pull circuit breakers	3.43	77	81	3.80
B0098 Remove or install closure panels	3.86	54	57	3.46
C0106 Interpret aircraft fuel schematics	3.46	63	72	5.24

TE MEAN = 2.13; S.D. = 1.52; HIGH = 3.65

TD MEAN = 5.00; S.D. = 1.00; HIGH = 6.00

POI ANALYSIS

EXAMPLES OF TASKS NOT MATCHED TO POI LEARNING OBJECTIVES

TASKS	TSK DIF	1st JOB (N=150)	1st ENL (N=366)	TNG EMP
A0054 Purge removed components prior to shipment	3.36	65	69	3.02
B0070 Check aircraft for explosives	3.54	65	69	5.15
B0083 Ground equipment, other than aircraft	2.65	86	86	4.88
B0094 Pull circuit breakers	3.43	77	81	3.80
C0140 Perform air hose and external bubble tests	5.28	61	65	4.10
C0157 Perform red talcum powder tests	3.97	67	72	4.80

TE MEAN = 2.13; S.D. = 1.52; HIGH = 3.65

TD MEAN = 5.00; S.D. = 1.00; HIGH = 6.00

POI ANALYSIS

EXAMPLES OF UNSUPPORTED LEARNING OBJECTIVES

TASKS	TRNG EMP	1st JOB (N=150)	1st ENL (N=366)	TSK DIF
I.5.a. (4). Tech order system publication improvement report and reply				
J0477 Initiate technical order improvement reports	3.07	15	20	5.75
I.6.b. (3). Product quality deficiency reporting (PQDR)				
J0474 Identify problem areas, other than equipment or supply using deficiency, service, or status reports, such as reports of deficiency (RODs)	1.51	6	6	6.09

TE MEAN = 2.13; S.D. = 1.52; HIGH = 3.65

TD MEAN = 5.00; S.D. = 1.00; HIGH = 6.00

JOB SATISFACTION INDICATORS (VERSUS COMPARATIVE SAMPLE)

	1-48 Months		49-96 Months		97+ Months	
	2001 2A6X4 (N=366)	*COMP SAMPLE (N=3,328)	2001 2A6X4 (N=198)	*COMP SAMPLE (N=1,625)	2001 2A6X4 (N=400)	*COMP SAMPLE (N=4,862)
JOB INTERESTING	80	88	80	89	91	92
TALENTS WELL UTILIZED	61	82	75	82	88	87
TRAINING WELL UTILIZED	92	90	89	89	87	86
SENSE OF ACCOMPLISHMENT	82	85	82	83	80	85
PLAN TO REENLIST	42	47	57	58	93	90

* Comparative sample of (2A) AFSCs surveyed in the last 12 months

JOB SATISFACTION INDICATORS (VERSUS 1998 SURVEY)

	1-48 Months		49-96 Months		97+ Months	
	2001 <u>2A6X4</u> (N=366)	1998 <u>2A6X4</u> (N=448)	2001 <u>2A6X4</u> (N=198)	1998 <u>2A6X4</u> (N=205)	2000 <u>2A6X4</u> (N=400)	1998 <u>2A6X4</u> (N=549)
JOB INTERESTING	80	84	80	88	91	85
TALENTS WELL UTILIZED	61	71	75	82	88	89
TRAINING WELL UTILIZED	92	92	89	95	87	85
SENSE OF ACCOMPLISHMENT	82	86	82	80	80	81
PLAN TO REENLIST	42	49	57	57	93	91

JOB SATISFACTION INDICATORS (ANG & AFRC)

	5-SKILL LEVEL		7-SKILL LEVEL	
	ANG <u>2A6X4</u> (N=254)	AFRC <u>2A6X4</u> (N=97)	ANG <u>2A6X4</u> (N=172)	AFRC <u>2A6X4</u> (N=151)
JOB INTERESTING	95	90	94	92
TALENTS WELL UTILIZED	90	86	90	87
TRAINING WELL UTILIZED	94	92	94	93
SENSE OF ACCOMPLISHMENT	95	92	91	93

IMPLICATIONS

- ◆ Career ladder documents well supported by survey data
- ◆ STS and POI provide comprehensive coverage of work performed by career ladder, review of some items warranted
- ◆ Job satisfaction indicators are stable but have slightly decreased in the areas of job interest and talent utilization among first and second term airmen.

QUESTIONS?

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