Air Education and Training Command

Sustaining the Combat Capability of America's Air Force

Occupational Survey Report 2M0X2 Missile and Space Systems Maintenance

U.S. AIR FORCE

Lt Alex Ramos
16 May 03

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Integrity - Service - Excellence

Air Force Occupational Measurement SQ

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Integrity - Service - Excellence

Overview

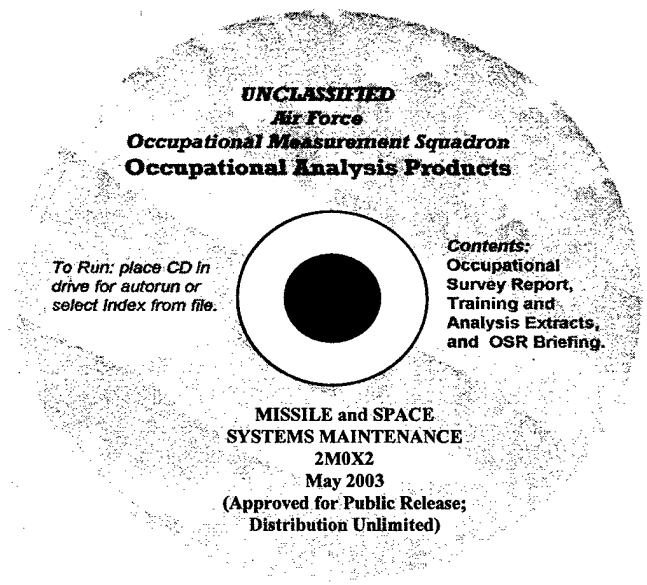
- Survey background
- Survey results
- Implications

Work Performed

- Service, maintain, or supervise these actions on missiles, unmanned air vehicles (UAV), boosters, and payloads, research and development (R&D) systems, environmental blast doors and valves, associated subsystems, components, and support equipment (SE)
- Launch, track, and recover UAVs and operate and maintain related equipment
- Personnel design R&D systems, perform acquisition, and activation activities

Survey Background

- Last Occupational Survey Report (OSR): April 2000
- Current survey developed: March - April 2002
  - Vandenberg AFB CA (Tech School)
  - FE Warren AFB WY
  - Cape Canaveral AFS FL
  - Kirtland AFB NM



Survey Background

- Survey initiated to obtain data to:
  - Evaluate current classification and training documents
  - Support promotion test development
- Current survey data collected:

  August-November 2002
- Component surveyed:
  - Active Duty
  - 3-, 5-, and 7- skill levels

Current Training Program

- AFSC-awarding course
  - 532 TRS, Vandenberg AFB CA
  - V3ABR2M032-001, Missile and Space Systems Maintenance Apprentice Course, 63 academic days
  - 16 semester hours for CCAF
  - <u>Programmed TPR</u>

    FY03: 114 students

    FY04: 116 students

    <u>Programmed Elimination Rate</u>

    FY03: 4%

    FY04: 10%

Survey Sample Characteristics

	Total
Assigned*	744
Mailed Out	652
Sampled	372
Usable Returns	57%

- Average time in career field for AD: 9 yrs 4 months
- Average TAFMS for AD: 10 yrs 1 month
- Percent of AD in first-enlistment: 23%

* Assigned as of Aug 02

Skill & Paygrade Characteristics

Skill-Level Distribution

	Assigned*	Sample
3-Level	27%	20%
5-Level	45%	57%
7-Level	27%	23%

Paygrade Distribution

	Assigned*	Sample
E-1 - E-3	21%	13%
E-4	15%	16%
E-5	30%	37%
E-6	22%	23%
E-7	12%	12%

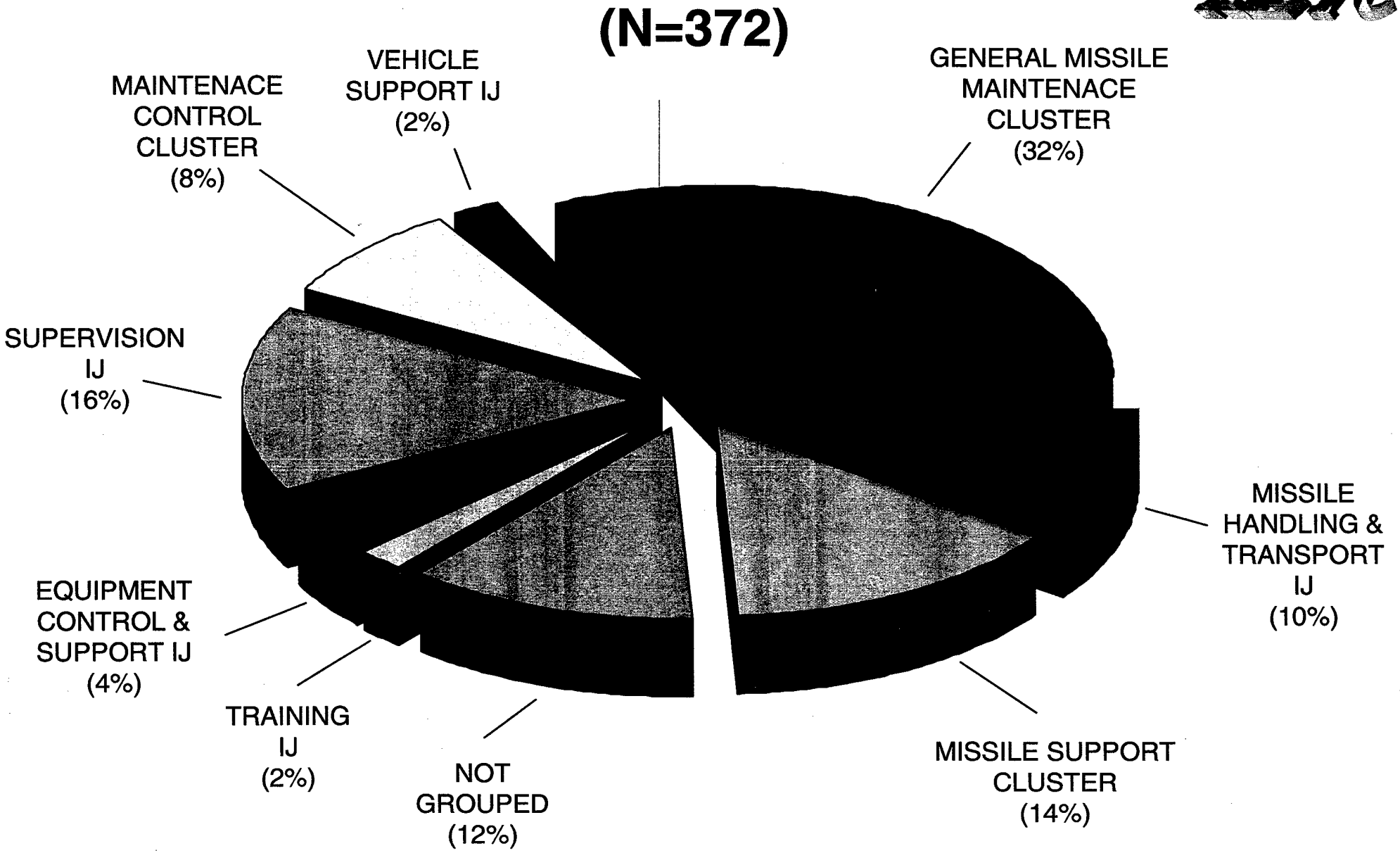
•Assigned as of Aug 02
Note: Columns may not add to 100% due to rounding

Command Representation

Command	Assigned %*	Sample %
AFSPC	88	93
AFMC	4	4
AETC	4	4
DTRA**	2	0
OTHER***	1	0

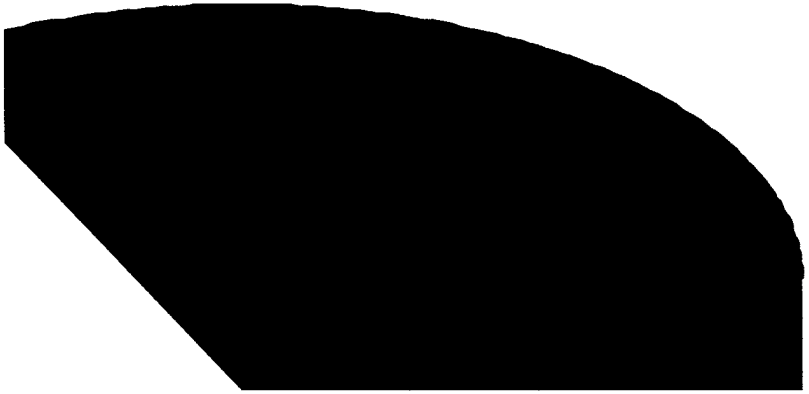
*Assigned as of Aug 02
** Defense Threat Reduction Agency
***Includes: ACC, AMC, AFOTEC, and AFELM

AFSC 2M0X2 Career Ladder



General Missile Maintenance Cluster (N=121)

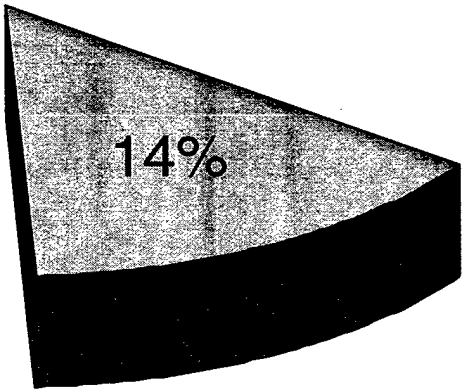
- Penetrate or exit launch facilities
- Open or close launcher closures
- Inspect launcher closer components
- Inspect reentry system (RS) insulation
- Perform hazardous current checks



Missile Support Cluster (N=51)

- Perform periodic inspections on hoisting units, adapters, or slings
- Remove, repair, or replace payload transporter (PT) semi trailer components
- Inspect general or special purpose equipment
- Perform periodic inspections on hand lift trucks
- Service hand lift trucks

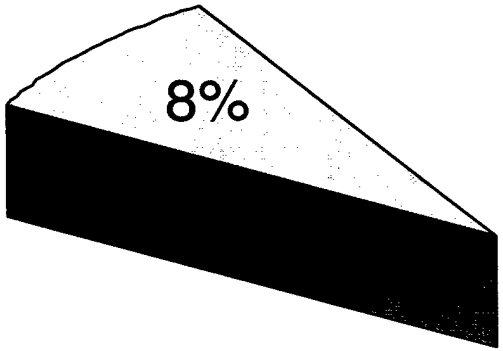
Mechanical Support Job
Pneudraulics Job



Maintenance Control Cluster (N=28)

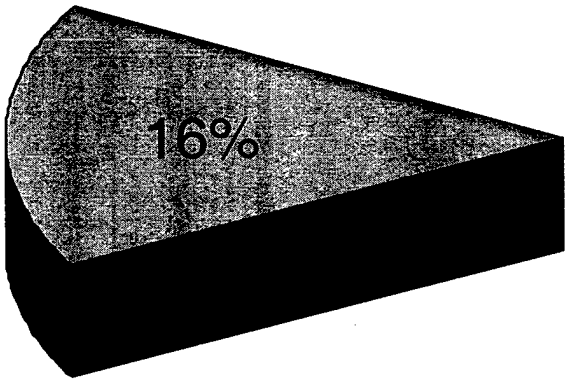
- Ensure compliance with contractor test procedures
- Conduct or participate in status meetings
- Participate in scheduling meetings
- Ensure compliance with engineering documents
- Perform pad controller duties

Launch Vehicle Job
Propulsion Job



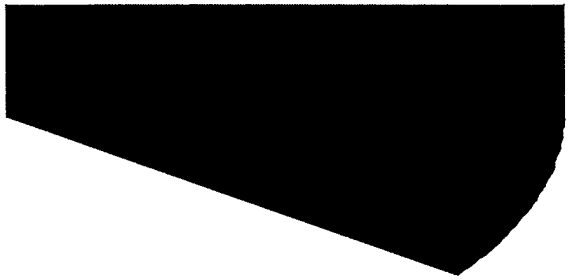
Independent Jobs

- Supervision IJ (N=59)
  - Evaluate personnel for compliance with performance standards
  - Inspect personnel for compliance with military standards
  - Write or indorse military performance reports



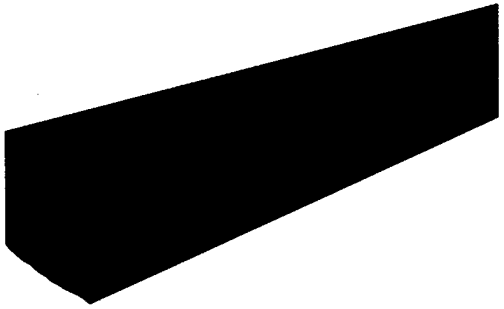
Independent Jobs (Cont)

- Missile Handling and Transport IJ (N=36)
  - Perform preoperational checks on transporter erector (TE) support trucks
  - Perform operational checks on TE environmental control systems
  - Prepare TEs for emplacing missiles



Independent Jobs (Cont)

- Equipment Control and Support IJ (N=16)
  - Inventory equipment, tools, parts, or supplies
  - Issue or log turn ins or equipment, tools, parts, or supplies
  - Identify equipment or supply problems



Independent Jobs (Cont)

- Training IJ (N=8)
  - Develop or procure training materials or aids
  - Administer or score tests
  - Maintain training records or files

Independent Jobs (Cont)

- Vehicle Support IJ (N=7)
  - Perform preoperational checks on payload transporter semi trailers or truck tractors
  - Perform preoperational checks on forklifts
  - Perform preoperational checks on truck cranes

Career Ladder Progression

- **3- and 5-skill-level personnel**
  - Work in the more mechanical jobs in the career field
  - 5-level perform more technical duties and start to perform some training and supervisory duties
- **7-skill-level personnel**
  - Perform many supervisory and administrative responsibilities; some technical duties

Percent Across Specialty Jobs DAFSC

Specialty Jobs	DAFSC 2M032 (N=74)	DAFSC 2M052 (N=211)	DAFSC 2M072 (N=87)
Training IJ	0	3	1
Equipment Control and Support IJ	8	4	1
Supervision IJ	0	10	43
Maintenance Control Cluster	0	8	13
Vehicle Support IJ	5	1	0
General Missile Maintenance Cluster	50	32	17
Missile Handling and Transport IJ	14	10	5
Missile Support Cluster	14	17	7
Not Grouped	9	15	13

Career Ladder Progression
Percent Time Spent on Duties

Duty Areas	DAFSC 2M032 (N=74)	DAFSC 2M052 (N=211)	DAFSC 2M072 (N=87)
A. Perf General Missile Maintenance Activities	56	35	14
B. Perf Missile Handling and Transport Activities	12	10	4
C. Perf Missile Maintenance Support Activities	11	8	3
D. Perf Vehicle and Equipment Control Activities	5	3	2
E. Perf Missile Pneudraulics Activities	4	5	3
F. Perf Destruct Ordnance Activities	*	3	1
G. Perf General Launch Activities	2	6	10
H. Perf Payload (Includes Spacecraft), Upperstage, or Fairing Activities	1	2	2
I. Perf Launch Vehicle (LV) Mechanical Activities	1	1	1
J. Perf Launch Vehicle (LV) Electrical Activities	*	*	1

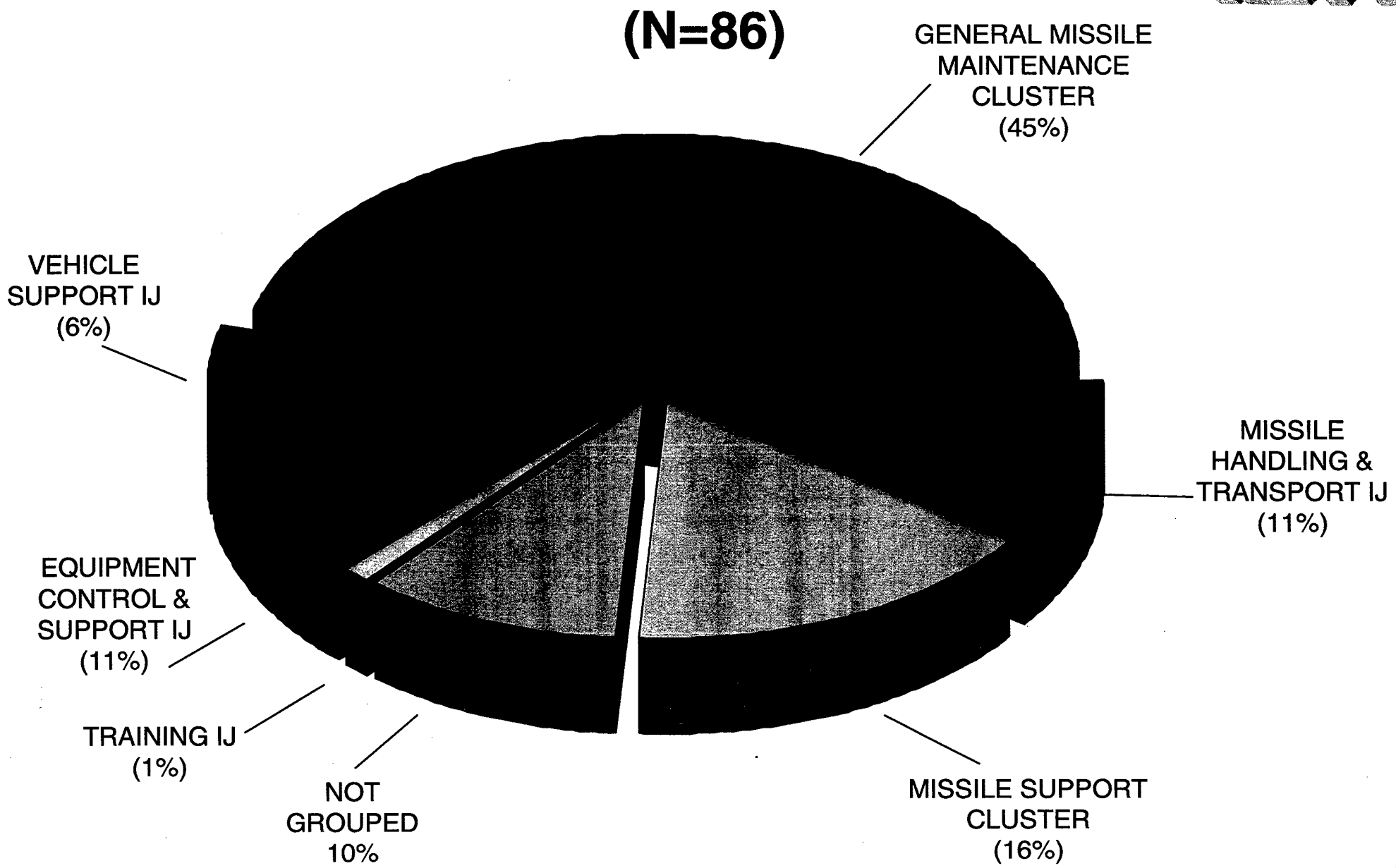
*Indicates less than 1%

Career Ladder Progression
Percent Time Spent on Duties (Cont)

Duty Areas	DAFSC 2M032 (N=74)	DAFSC 2M052 (N=211)	DAFSC 2M072 (N=87)
K. Perf Launch Vehicle (LV) Facilities Activities	*	1	2
L. Perf Solid Rocket Motor Upgrade (SRMU) Activities	*	1	*
M. Perf Propulsion Activities	*	2	2
N. Perf General Research and Development Activities	*	1	1
O. Perf Facility Environmental Defense System Activities	*	*	*
P. Perf Maintenance Management Activities	1	2	3
Q. Perf General Administrative and Technical Order (TO) System Activities	1	3	5
R. Perf General Supply and Equipment Activities	5	4	4
S. Perf Training Activities	*	6	9
T. Perf Management and Supervisory Activities	*	8	34

*Indicates less than 1%

First-Enlistment Job Structure



First-Enlistment Personnel Representative Tasks

Tasks		Percent Members Performing (N=86)
A0035	Operate maintenance and support truck hoists	56
A0016	Inspect launcher closure components	50
A0115	Perform self-tests on colormetric gas detectors	49
A0047	Perform LF emergency or hostile securing shutdowns	47
D0359	Inspect general or special purpose equipment	45
A0036	Operate missile electronic encryption devices (MEEDs)	45
A0041	Perform emergency war order (EWO) LF evacuations	44
R0903	Inventory equipment, tools, parts, or supplies	43
A0008	Change tires or wheels on general purpose vehicles	43
A0033	Open or close launcher closures	43
A0029	Load or unload RSs	42
A0045	Perform hazardous current checks	42
A0037	Operate payload transporter (PT) system components	41
A0117	Perform self-tests on electronic checkout test sets (ECTSs)	41

Specialty Training Standard (STS) Analysis

- STS is generally supported by survey data
  - Nine STS items were unsupported
- Some STS items may need proficiency code review
  - Fourteen uncoded STS items matched to JI tasks performed by more than 20% percent of members
- Thirty-nine technical tasks performed by 20% or more of members were not referenced to STS
  - These should be reviewed for possible inclusion in STS

Unsupported STS Elements

Examples

Unit	Learning Objective	Prof Code	Percent Members Performing 1st Enl	Percent Members Performing 3-Lvl
9a(6)	Digital multimeters (9a Operate test equipment)	3c		
Task	A0123. Perform self–tests on multipurpose continuity test sets		13	8
21a(2)	Remove (21a MK/12A Reentry system)	2b		
Task	A0040. Perform electrical bonding checks		13	14
21a(3)	Install (21a MK/12A Reentry system)	2b		
Task	A0040. Perform electrical bonding checks		13	14

Tasks not Referenced to STS

Examples

Tasks		Percent Members Performing 1st Enl	3-Lvl
A0008	Change tires or wheels on general purpose vehicles	43	32
A0031	Lubricate security pit vault door components	37	41
A0035	Operate maintenance and support truck hoists	56	55
A0036	Operate missile electronic encryption devices (MEEDs)	45	49

Plan of Instruction (POI) Analysis

- POI is generally well-supported by survey data
  - Three learning objectives matched to JI tasks performed by less than 30% of members
- Thirteen tasks not referenced to any POI learning objective should be reviewed for possible inclusion in POI

Proficiency Codes Requiring Review

Unit	Learning Objective	Prof Code	Percent Members Performing 1st Enl	Percent Members Performing 3-Lvl
6l	Ordnance systems (6 Research and development)	-		
Task	A0042. Perform explosive ordnance handling and transporting procedures		41	45
7c	Moving and lifting heavy Equipment (7 Maintenance principles)	-		
Task	D0361. Load or unload equipment on general purpose vehicles		33	35
20a(13c)	Perform destructive break-in (20 Launch facility, missile alert facility, and support base facilities)	-		
Task	A0043. Perform forced break-in entry procedures for secondary door lockouts		31	32

Unsupported POI Objectives

Examples

Tasks		Percent Members Performing 1st Enl	3-Lvl
II.1.e.	Without reference, identify basic facts pertaining to the Missile Air Elevator System with a minimum of 75% accuracy. (II.1. Peacekeeper familiarization)		
A103	Perform preoperational checks on air elevator support trailers	12	11
II.1.f.	Without reference, identify basic facts pertaining to the launch ejection gas generator system with a minimum of 75% accuracy (II.1. Peacekeeper familiarization)		
B234	Prepare or process launch ejection gas generators for shipment of storage	8	9
B238	Process launch ejection gas generators for launch facility installations	6	7

Tasks not Referenced to POI

Examples

Tasks		Percent Members Performing 1st Enl	3-Lvl
A0015	Connect or disconnect reentry system (RS) separation cables	33	35
A0021	Inspect mission guidance control system (MGCS)	30	32
A0030	Lubricate secondary access components	33	35
A0031	Lubricate security pit vault door components	37	41

Job Satisfaction Indicators (Current vs. Previous Study)

	1-48 Months		49-96 Months		97+ Months	
	2003 (N=86)	2000 (N=148)	2003 (N=82)	2000 (N=89)	2003 (N=204)	2000 (N=295)
Job interesting	83	79	87	88	92	92
Talents well utilized	79	70	81	80	85	86
Training well utilized	84	78	92	90	80	82
Sense of accomplishment	70	64	66	63	76	70
Plan to reenlist	63	55	74	72	71	77

Job Satisfaction Indicators (Across Specialty Jobs)

	TRAINING IJ (N=8)	EQUIP CONTROL & SPT IJ (N=16)	SUPV IJ (N=59)	MAINT CONTROL CLUSTER (N=28)
Job interesting	88	76	93	93
Talents well utilized	63	44	84	89
Training well utilized	26	63	78	83
Sense of accomplishment	50	31	81	79
Plan to reenlist	50	56	66	75

Job Satisfaction Indicators (Across Specialty Jobs Cont)

	VEHICLE SUPPORT IJ (N=7)	GENERAL MISSILE MAINT CLUSTER (N=121)	MISSILE HANDLING & TRANS IJ (N=36)	MISSILE SUPPORT CLUSTER (N=20)
Job interesting	43	90	83	86
Talents well utilized	29	91	75	87
Training well utilized	14	96	95	85
Sense of accomplishment	29	79	75	69
Plan to reenlist	57	79	75	65

Retention Dimensions
First-Term Airmen (N=86)

Planning to Reenlist (N=54)	Percent Responding	Average
Retirement benefits	69	2.65
Military-related education & training opportunities	63	2.35
Pay and allowances	62	2.39
Bonus or special pay	61	2.67
Medical or dental care for AD members	61	2.58

Planning to Separate (N=31)		
Location of present assignment	61	2.74
Military lifestyle	58	2.44
Pay and allowances	55	2.18
Recognition of efforts	45	2.36
Civilian job opportunities	32	2.80

Scale: 1 = slight influence, 2 = moderate influence, 3 = strong influence

Retention Dimensions
Second-Term Airmen (N=134)

Planning to Reenlist (N=61)	Percent Responding	Average
Job security	74	2.69
Retirement benefits	66	2.70
Medical or dental care for AD member	61	2.35
Off-duty education and training opportunities	59	2.64
Medical or dental care for family members	57	2.51

Planning to Separate (N=16)		
Civilian job opportunities	62	2.50
Pay and allowances	50	2.50
Leadership at unit level	44	2.14
Location of present assignment	37	2.33
Unit manning	31	2.40

Scale: 1 = slight influence, 2 = moderate influence, 3 = strong influence

Retention Dimensions
Career Airmen (N=145)

Planning to Reenlist (N=106)	Percent Responding	Average
Retirement benefits	86	2.65
Job security	65	2.61
Pay and allowances	53	2.29
Medical or dental care for family members	51	2.48
Location of present assignment	47	2.49

Planning to Separate (N=8)		
Retirement benefits	75	2.33
Unit manning	62	2.20
Medical or dental care for family members	50	2.25
Leadership at unit level	50	3.00
Senior Air Force leadership	50	2.75

Scale: 1 = slight influence, 2 = moderate influence, 3 = strong influence

Summary of Results

- Survey Sample
  - Representative of career field
- Job Structure
  - Three clusters and five IJs
- Career ladder progression typical
  - 3-skill levels perform vehicle and equipment and control duties
  - 5-skill levels perform missile support as well as training duties
  - 7-skill levels perform supervision and some technical duties
- 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
  - Similar when compared to previous study across all TAFMS groups

Way Ahead

- OSR Delivery Trip - scheduled for Jun 03
- Utilization and Training Workshop (U&TW) - TBD at Vandenberg AFB
- SKT rewrite (extended minor) - 27 Jan 04

Questions?

Visit our web site at:

https://www-r.omsq.af.mil/OMY/indexomy.htm

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