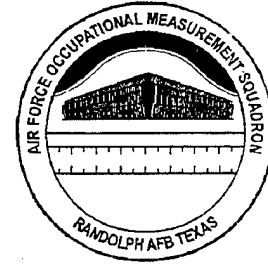


DTIC



UNITED STATES
AIR FORCE

OCCUPATIONAL SURVEY REPORT



AEROSPACE PHYSIOLOGY

AFSC 4M0X1

OSSN: 2362

JUNE 1999

19990712 105

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

APPROVED FOR PUBLIC RELEASE; DISTRIBUTION UNLIMITED

DISTRIBUTION FOR AFSC 4M0X1 OSR

	<u>OSR</u>	<u>ANL</u> <u>EXT</u>	<u>TNG</u> <u>EXT</u>	<u>JOB</u> <u>INV</u>
AFOMS/OMDQ	1			
AFOMS/OMYXL	10		5	10
AL/HRMM	2			
AL/HRTE	1		1	
ARMY OCCUPATIONAL SURVEY BRANCH	1			
CCAF/AYX	1			
DEFENSE TECHNICAL INFORMATION CENTER	2			
HQ ACC/XOSE	3		3	
HQ AETC/DPSE	1		1	
HQ AFMC/DPE	3		3	
HQ AFPC/DPAAD2	1			
HQ AFPC/DPPAC	1			
HQ AFSOC/DPPMT	2		2	
HQ AFSPC/DPAE	3		3	
HQ AMC/DPPET	1			
HQ PACAF/DPPET	3		3	
HQ HSC/DP	1		1	
HQ USAF/SGMP	1		1	
HQ USMC/STANDARDS BRANCH	1			
NAVMAC	1			
USAFSAM/DA	2			
USAFSAM/FP (2602 WEST GATE RD, BROOKS AFB TX 78235-5252)	1		1	
USAFSAM/FP (2602 WEST GATE RD, BROOKS AFB TX 78235-5252)	3	1	3	1
USAFSAM/FP (2602 WEST GATE RD, BROOKS AFB TX 78235-5252)	1		1	

TABLE OF CONTENTS

	<u>PAGE NUMBER</u>
PREFACE	v
SUMMARY OF RESULTS	vii
INTRODUCTION	1
Background	1
SURVEY METHODOLOGY	2
Inventory Development	2
Survey Administration	2
Survey Sample	3
Task Factor Administration	3
SPECIALTY JOBS	5
Overview of Specialty Jobs	5
Group Descriptions	6
Comparison to Previous Study	14
ANALYSIS OF DAFSC GROUPS	15
Skill-Level Descriptions	15
Summary	16
TRAINING ANALYSIS	17
First-Enlistment Personnel	17
Task Difficulty (TD) Data	18
Specialty Training Standard (STS)	19
Plan of Instruction (POI)	19
JOB SATISFACTION ANALYSIS	20
IMPLICATIONS	21
APPENDIX A TABLES 1-23	23
APPENDIX B SELECTED REPRESENTATIVE TASKS PERFORMED BY MEMBERS OF CAREER LADDER JOBS	25
APPENDIX C EXPANDED LISTING OF TASK MODULES AND TASKS STATEMENTS	27

THIS PAGE INTENTIONALLY LEFT BLANK

PREFACE

This report presents the results of an Air Force Occupational Survey of the Aerospace Physiology career ladder, Air Force Specialty Code (AFSC) 4M0X1. Authority for conducting occupational surveys is contained in AFI 36-2623. Computer products used in this report are available for use by operations and training officials.

The survey instrument was developed by First Lieutenant Todd Osgood. Computer programming support was provided by Mrs. Jeanie Guesman. Second Lieutenant Floyd H. Brazier analyzed the data and wrote the final report. This report has been reviewed and approved by Lieutenant Colonel Roger W. Barnes, 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 AFOMS/OMYXI, 1550 5th Street East, Randolph Air Force Base, Texas 78150-4449, or by calling DSN 487-5543. For information on the Air Force occupational survey process or other on-going projects, visit our web site at <http://www.omsq.af.mil>.

GEORGE KAILIWAI III, Lt Col, USAF
Commander
Air Force Occupational Measurement Sq

JOSEPH S. TARTELL
Chief, Occupational Analysis Flight
Air Force Occupational Measurement Sq

THIS PAGE INTENTIONALLY LEFT BLANK

SUMMARY OF RESULTS

1. **Survey Coverage:** The Aerospace Physiology career ladder was surveyed to provide current job and task data for use in updating career ladder documents and training programs. Survey results are based on responses from 247 members accounting for 81 percent of the total population surveyed.
2. **Specialty Jobs:** One cluster and six jobs were identified in the career ladder structure analysis: Apprentice Chamber Cluster, General Physiology Job, Supervisory Job, Hyperbaric Chamber Job, Procedures Trainer Job, Research Job and U-2 Aircraft Job.
3. **Career Ladder Progression:** Personnel in the AFSC 4M0X1 career ladder follow a typical career progression pattern. Inexperienced personnel perform technical work in support of hypobaric chamber, pressure suit, or life support operations. More experienced personnel perform technical and training functions in support of these same operations, as well as some hyperbaric chamber support jobs. Experienced personnel perform mostly supervisory and managerial functions rather than specializing in the technical tasks.
4. **Training Analysis:** The current STS warrants review of proficiency coding based on survey data. Many tasks with high percentages of members performing and high task difficulty are dashed in the STS.
5. **Job Satisfaction:** Overall, AFSC 4M0X1 members are more satisfied with their jobs than members of a comparative sample of medical career ladder personnel. Furthermore, members of the current sample are as satisfied with their jobs as previous AFSC 4M0X1 personnel surveyed in 1995. Job satisfaction data of specific career ladder jobs members show most job members are satisfied with their work. Only the Hyperbaric Chamber Job incumbents are slightly dissatisfied with their sense of accomplishment gained from their work.
6. **Implications:** Survey results clearly indicate that the present classification structure, as described in the latest specialty description, accurately portrays the jobs performed in this career ladder. Based on survey data, the career ladder training documents require review to ensure appropriate proficiency coding. Career ladder progression is typical, with the move from technical work at the 3- and 5-skill levels to supervisory and management tasks at the 7-skill level. Job satisfaction is slightly higher for all TAFMS group members than the comparative sample of like Medical AFSCs. All TAFMS groups rate perceived reenlistment intentions considerably higher than the comparative sample.

THIS PAGE INTENTIONALLY LEFT BLANK

**OCCUPATIONAL SURVEY REPORT (OSR)
AEROSPACE PHYSIOLOGY
(AFSC 4M0X1)**

INTRODUCTION

This is an Air Force Occupational Measurement Squadron occupational survey report (OSR) of the Aerospace Physiology (AFSC 4M0X1) career ladder. This survey, completed in 1999, is intended to update the current data base and to identify any changes that may have taken place since the last survey in 1995. Survey data will be used to identify current utilization patterns among career ladder personnel and evaluate career ladder documents and training programs.

Background

As described in the AFMAN 36-2108, *Airman Classification, Specialty Description*, dated 31 October 1998, Aerospace Physiology personnel manage aerospace physiology operation facilities. They operate and maintain aerospace physiology devices including altitude chambers, instruct or observe on simulated flights to altitude, and perform classroom instruction. In addition, these members train flying personnel in subjects such as aircraft pressurization, night vision, emergency first aid, oxygen equipment, and emergency escape from aircraft. Other areas of responsibility include physiology research and development, parasail instructor, and high-altitude pressure suit technician.

Personnel entering the AFSC 4M0X1 career ladder must attend the B3ABY4M031-001 Aerospace Physiology Apprentice course at Brooks AFB TX, lasting 8 weeks and 1 day. Upon completion of this course, the graduate is awarded the 3-skill level. In addition an appropriate course must be taken in academic instruction.

Entry into this career ladder currently requires a clear voice without speech impediments and physical qualification for aircrew duty according to AFI 48-123, *Medical Examination and Standards*, Class III medical standards.

APPROVED FOR PUBLIC RELEASE; DISTRIBUTION UNLIMITED

SURVEY METHODOLOGY

Inventory Development

The data collection instrument for this occupational survey was USAF Job Inventory (JI) Occupational Survey Study Number (OSSN) 2362, dated December 1998. A tentative task list was prepared after reviewing pertinent career ladder publications and directives, pertinent tasks from the previous survey instrument, and data from the last OSR. The preliminary task list was refined and validated through personal interviews with 29 subject-matter experts (SMEs) at the following training location and operational installations:

<u>BASE</u>	<u>UNIT VISITED</u>
Brooks AFB TX	USAF SAM/FP
Beale AFB CA	9 PSPTS/SGT
Little Rock AFB AR	314 ADOS/SGPT
Sheppard AFB TX	82 AMDS/SGPT

The resulting JI contains a comprehensive listing of 329 tasks grouped under 13 duty headings, and a background section requesting information such as grade, base, MAJCOM assigned, organizational level, component status, job title, functional area, work schedule, test equipment used or operated, and support equipment used or operated.

Survey Administration

From December 1998 through March 1999, base training offices at operational units worldwide administered the inventory to eligible AFSC 4M0X1 personnel. Job incumbents were selected from a computer-generated mailing list obtained from personnel data tapes maintained by the Air Force Personnel Center, Randolph AFB TX.

Each individual who completed the inventory first completed an identification and biographical information section and then checked each task performed in his or her current job. After checking all tasks performed, each member then rated each of these tasks on a 9-point scale, showing relative time spent on that task, as compared to all other tasks checked. The ratings ranged from 1 (very small amount time spent) through 5 (about average time spent) to 9 (very large amount time spent).

To determine relative time spent for each task checked by a respondent, all of the incumbent's ratings are assumed to account for 100 percent of his or her time spent on the job and are summed. Each task rating is then divided by the total task ratings and multiplied by 100 to

provide a relative percentage of time for each task. This procedure provides a basis for comparing tasks in terms of both percent members performing and average percent time spent.

Survey Sample

Personnel were selected to participate in this survey so as to ensure an accurate representation across major commands (MAJCOMs) and military paygrade groups. All eligible AFSC 4M0X1 personnel were mailed survey disks. Members eligible for the survey consisted of the total assigned 3-, 5-, 7- and 9-/CEM-skill level population, 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 job less than 6 weeks. Table 1 reflects the percentage distribution, by MAJCOM, of assigned AFSC 4M0X1 personnel as of October 1998. The 247 respondents in the final sample represent 65 percent of the total assigned personnel and 81 percent of the total surveyed personnel. Table 2 reflects the paygrade distribution for these AFSC 4M0X1 personnel.

Both Command and Paygrade distribution of the survey sample are close to the percent assigned. This indicates the sample is a true representation of the career ladder population.

Task Factor Administration

Job descriptions alone do not provide sufficient data for making decisions about career ladder documents or training programs. Task factor information is needed for a complete analysis of the career ladder. To obtain the needed task factor data, selected senior AFSC 4M0X1 personnel (generally E-6 or E-7 craftsmen) also completed a second booklet for either training emphasis (TE) or task difficulty (TD). These booklets were processed separately from the job inventories. This information is used in a number of different analyses discussed in more detail within the report.

Training Emphasis (TE): The 46 senior NCOs who completed a TE booklet were asked to select tasks they felt require some sort of structured training for entry-level personnel and then indicate how much training emphasis these tasks should receive, from 1 (extremely low emphasis) to 9 (extremely high emphasis). Structured training is defined as training provided at resident training schools, field training detachments (FTD), mobile training teams (MTT), formal on-the-job-training (OJT), or any other organized training method. Unfortunately, interrater agreement for these 46 raters was unacceptable. As a result, TE data will not be able to be used in this report.

Task Difficulty (TD): The 63 senior NCOs who completed TD booklets were asked to rate the difficulty of each task using a 9-point scale (extremely low to extremely high). Difficulty is defined as the length of time required for the average incumbent to learn how to perform the task. Ratings were standardized so tasks have an average difficulty of 5.00 and a standard deviation of 1.00. Any task with a TD rating of 6.00 or above is considered to be difficult to learn. Interrater reliability for the 63 TD raters was acceptable.

When used in conjunction with the primary criterion of percent members performing, valid task factor data can provide insight into first-enlistment personnel training requirements. Such insights may suggest a need for lengthening or shortening portions of instruction supporting entry-level jobs.

SPECIALTY JOBS

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

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

Overview of Specialty Jobs

Based on the analysis of tasks performed and the amount of time spent performing each task, one cluster and six jobs were identified within the AFSC 4M0X1 career ladder. Figure 1 illustrates the jobs and clusters performed by these personnel.

4M0X1 AEROSPACE PHYSIOLOGY JOB STRUCTURE (N=247)

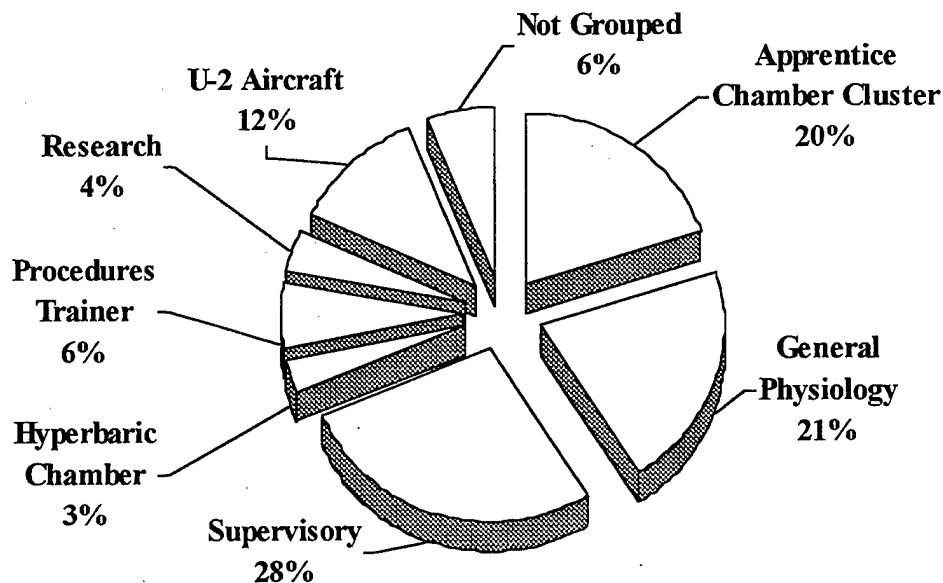


FIGURE 1

A listing of the cluster and jobs is provided below. The stage (ST) number shown beside each title references computer printed information, the letter "N" indicates the number of personnel in each group.

- I. APPRENTICE CHAMBER CLUSTER (ST020, N=48)
 - A. Apprentice Hypobaric Job (ST025, N=29)
 - B. Apprentice Hyperbaric Job (ST024, N=19)
- II. GENERAL PHYSIOLOGY JOB (ST017, N=53)
- III. SUPERVISORY JOB (ST021, N=69)
- IV. HYPERBARIC CHAMBER JOB (ST019, N=8)
- V. PROCEDURES TRAINER JOB (ST030, N=16)
- VI. RESEARCH JOB (ST013, N=10)
- VII. U-2 AIRCRAFT JOB (ST015, N=29)

The respondents forming these jobs and clusters account for 94 percent of the survey sample. The remaining 6 percent, for one reason or another, did not group into one of these jobs or clusters. Examples of job titles for these personnel include Administrative Specialist, Quality Assurance, and Scheduling Coordinator.

Group Descriptions

The following paragraphs contain brief descriptions of the cluster and jobs identified through the career ladder structure analysis. Table 3 presents the relative time spent on duties by members of these specialty jobs and clusters. Selected background data for these jobs and clusters are provided in Table 4. Representative tasks for all the groups are contained in Appendix A.

I. APPRENTICE CHAMBER CLUSTER (ST020). The 48 airmen performing within this cluster (20 percent of the survey sample) represent the entry-level positions of the career ladder. They spend 56 percent of their time performing the Hypobaric Chamber and Life Support Equipment tasks of Duties A and B (Table 3). Another 10 percent of their time is spent performing the tasks of the Aerospace Physiology Instruction or Training in Duty C. The average number of tasks performed by this group is 30, the lowest of any other job. This indicates that this is an entry-level job in which competency in basic tasks must be gained before additional responsibilities can be added. These entry-level personnel spend most of their time working in

common crew positions and helping prepare students for chamber flights. Distinctive tasks performed include:

- Perform inside observer duties during hypobaric chamber flights, other than research flights
- Fit students with oxygen masks
- Fit students with flight helmets
- Clean flight helmets or oxygen masks
- Perform crew chief duties during manual hypobaric chamber flights, other than research flights
- Perform recorder duties during hypobaric chamber flights, other than research flights
- Perform chamber operator duties during manual hypobaric chamber flights, other than research flights
- Perform lock operator duties during hypobaric chamber flights, other than research flights
- Maintain or store high-pressure oxygen cylinders
- Perform oxygen flow checks of narrow panel pressure-demand oxygen regulators
- Conduct briefings on rapid decompression
- Perform daily inspections of hypobaric chamber assemblies
- Inspect or maintain life support equipment

Representative task modules for this cluster include:

<u>TM</u>	<u>Module Title</u>	<u>No. of Tasks</u>	<u>Percent Time Spent</u>	<u>Average Percent Members Performing</u>
0001	Hypobaric Chamber Flights	9	34	88
0003	Hypobaric Chamber Maintenance	10	15	45
0002	Equipment Classroom Instruction	8	7	26
0014	Hyperbaric Chamber Duties	6	4	18
0005	OJT	4	1	9

Task module analysis shows that they spend almost 60 percent of their time working on the 33 tasks that deal with the Hypobaric and hyperbaric chambers as well as with equipment classroom instruction.

Eighty-three percent of these airmen hold the 3-skill level and 15 percent the 5-skill level. These members average almost 3 years Total Active Federal Military Service (TAFMS) and the predominant paygrade is E-3. Seventy-six percent of this core cluster are in their first enlistment, revealing a very young and inexperienced group.

There are two distinct jobs within this cluster that are separated by the type and frequency of the tasks performed.

The Apprentice Hypobaric Job is defined by the 39 percent time spent on the Hypobaric Chamber activities of Duty A, and 21 percent time spent on the Life Support equipment activities of Duty B. These 29 members account for 60 percent of the Apprentice Chamber Cluster. They

average a very low 35 tasks performed, indicating a very structured and tailored environment typical of entry-level or training jobs. The predominant paygrade is E-2 and E-3, accounting for 69 percent of the members in the job and they average just under 3 years TAFMS.

The Apprentice Hyperbaric Job accounts for the other 40 percent of the cluster and also has Hypobaric Chamber activities of Duty A at 34 percent and Life Support Equipment Activities, other than Pressure Suit of Duty B, at 16 percent time spent as their top duties. The major difference between these two jobs within the cluster is that Apprentice Hyperbaric Job spends more time being trained, Duty K and performing General Technical Order System Activities, Duty L (See Table 3). The reason that they have been distinguished as Apprentice Hyperbaric Job is due to the fact that they spend 10 percent of their time working on Duty H, Hyperbaric Chamber Activities, which is two or three times greater than all other jobs with the exception of Hyperbaric Chamber Job. Seventy-nine percent of these job members are E-2 or E-3, reflecting a very young job cadre. The 19 members assigned to this job only perform an average of 22 out of 393 total tasks.

II. GENERAL PHYSIOLOGY JOB (ST017). The 53 airmen forming this job (21 percent of the survey sample) perform an average of 60 tasks and are distinguished by the fact that they spend 15 percent of their time performing Duty A and J, 14 percent of their time performing Duty C, 12 percent of their time performing Duty K and another 11 percent of their time performing Duty L. In addition the rest of their time is evenly distributed throughout all of the other duties with the exception of Duty D, Performing pressure suit physiological support activities (Table 3). Members of this job are generally required to be proficient in almost every aspect of the Aerospace Physiology Career Ladder. The top 10 tasks performed by the members of this job include:

- Fit students with oxygen masks
- Fit students with flight helmets
- Perform inside observer duties during hypobaric chamber flights, other than research flights
- Conduct briefings on rapid decompression
- Perform recorder duties during hypobaric chamber flights, other than research flights
- Perform lecturer observer duties during hypobaric chamber flights, other than research flights
- Conduct classroom instruction concerning use of oxygen equipment
- Perform chamber operator duties during manual hypobaric chamber flights, other than research flights
- Clean flight helmets or oxygen masks
- Perform lock operator duties during hypobaric chamber flights, other than research flights
- Perform crew chief duties during manual hypobaric chamber flights, other than research flights
- Conduct classroom instruction concerning aircraft pressurization principles and problems
- Conduct on-the-job training (OJT)

Representative task modules for this job include:

<u>TM</u>	<u>Module Title</u>	<u>No. of Tasks</u>	<u>Percent Time Spent</u>	<u>Average Percent Members Performing</u>
0001	Hypobaric Chamber Flights	9	16	93
0002	Equipment Classroom Instruction	8	12	73
0005	OJT	4	4	50
0008	Instructor Supervision	5	3	32
0004	Supply	10	5	31
0006	Supervisory	24	11	27

Task module analysis shows that the General Physiology Job members perform tasks evenly across a number of task modules rather than concentrating their time in one or two key areas.

The predominant paygrade of this job is E-5 (Table 4), averaging over 7 years in the career field and 8 years TAFMS. Seventy-one percent report holding the 5-skill level with 50 percent supervising others. Furthermore, 10 percent of these members are assigned to units overseas.

III. SUPERVISORY JOB (ST021). The 69 airmen forming this job (28 percent of the survey sample) are distinguished by the 40 percent of their time spent performing Management and Supervisory tasks of Duty J (Table 3). They average performing 105 tasks. Despite the small population of the entire career ladder, Supervisors and Managers spend most of their time in a supervisory or managerial role and not performing the everyday technical task. Representative tasks performed by these incumbents include:

- Counsel subordinates concerning personal matters
- Inspect personnel for compliance with military standards
- Interpret policies, directives, or procedures for subordinates
- Determine or establish work assignments or priorities
- Evaluate personnel for compliance with performance standards, other than students
- Write recommendations for awards or decorations
- Conduct general meetings, such as staff meetings, briefings, conferences, or workshops
- Evaluate personnel for promotion, demotion, reclassification, or special awards
- Establish performance standards for subordinates
- Counsel trainees on training progress

Representative task modules for this cluster include:

<u>TM</u>	<u>Module Title</u>	<u>No. of Tasks</u>	<u>Percent Time Spent</u>	<u>Average Percent Members Performing</u>
0006	Supervisory	24	27	87
0005	OJT	4	4	80
0007	Management	5	4	66
0008	Instructor Supervision	5	4	62
0002	Equipment Classroom Instruction	8	5	66

Task module analysis shows they spend almost 40 percent of their time performing supervisory and management tasks. In addition it shows that even the supervisors in this career field must also continue to participate in everyday technical tasks.

The predominant paygrades are E-6 and E-7 and 86 percent report they supervise others. The members of this job average over 13 years in the career field and over 15 TAFMS.

IV. HYPERBARIC CHAMBER JOB (ST019). Comprising 3 percent of the survey sample, these 8 airmen indicate spending 29 percent of their time performing Hyperbaric Chamber activities of Duty H. They also spend 23 percent of their time performing the Management and Supervisory tasks of Duty J and 9 percent performing the General Administrative and Technical Order tasks of Duty L (Table 3). The members of this job perform an average of only 64 tasks, indicating their specialization in hyperbaric chamber duties. Some representative tasks performed by these incumbents are:

- Load patients into or remove patients from hyperbaric chambers
- Perform chamber operator duties during hyperbaric chamber dives
- Perform crew chief duties during hyperbaric chamber dives
- Perform lock operator duties during hyperbaric chamber dives
- Perform inside observer duties during hyperbaric chamber dives
- Perform daily inspections of hyperbaric chamber assemblies
- Perform in-service qualification training or dives
- Conduct on-the-job training (OJT)
- Determine training requirements
- Conduct supervisory orientations for newly assigned personnel
- Perform general maintenance on hyperbaric chamber assemblies
- Administer or practice cardiopulmonary resuscitation (CPR)
- Schedule or coordinate hyperbaric on-call teams
- Perform recorder duties during hyperbaric chamber dives
- Perform timekeeper duties during hyperbaric chamber dives

Representative task modules for this job include:

<u>TM</u>	<u>Module Title</u>	<u>No. of Tasks</u>	<u>Percent Time Spent</u>	<u>Average Percent Members Performing</u>
0014	Hyperbaric Chamber Duties	6	13	92
0005	OJT	4	5	78
0021	Trainer Maintenance	8	7	59
0006	Supervisory	24	19	49
0001	Hypobaric Chamber Flights	9	6	42

Task module analysis shows that while this group only spends approximately 13 percent of their time on Hyperbaric Chamber duties, it is second only to supervisory duties, and it considerably higher than any other job or cluster in the career field.

Seventy-five percent of these job incumbents hold the 5-skill level, with the other 25 percent holding the 7-skill level (Table 4). These members average 8 years in the career field and almost 11 years in the service. The predominant paygrade is E-5.

V. PROCEDURES TRAINER JOB (ST030). The 16 airmen forming this job (6 percent of the survey sample) are distinguished by the 36 percent of their time spent performing Aircraft Emergency Escape and Special Physiology Trainer tasks of Duty F (Table 3). They average performing 258 tasks, which is the greatest number of the other cluster and jobs in the survey sample. Representative tasks performed by these incumbents include:

- Perform inside observer duties during hypobaric chamber flights, other than research flights
- Brief use of ejection seat trainers
- Evaluate student performance on use of air egress trainers
- Evaluate student performance on use of ground procedural trainers
- Store training aids or life support equipment
- Conduct briefings on rapid decompression
- Clean flight helmets or oxygen masks
- Administer fighter aircrew conditioning tests (FACTs)
- Conduct instruction on use of in-flight or ground procedural trainers
- Conduct training on air or ground egress procedural trainers
- Conduct classroom instruction concerning use of oxygen equipment
- Instruct or evaluate students during descent and landing training, including hanging harness, and personal lowering devices
- Evaluate student performance during live-fire ejection seat training

Representative task modules for this job include:

<u>TM</u>	<u>Module Title</u>	<u>No. of Tasks</u>	<u>Percent Time Spent</u>	<u>Average Percent Members Performing</u>
0013	Ejection Training	23	29	79
0001	Hypobaric Chamber Flights	9	10	73
0002	Equipment Classroom Instruction	8	8	66
0003	Hypobaric Chamber Maintenance	10	8	56
0023	Centrifuge Duties	23	12	46

Task module analysis shows that they spend 40 percent of their time working on tasks directly involving trainers.

The predominant paygrade is E-5, 63 percent report having the 5-skill level and 37 percent reporting they supervise others. The members of this job average over 6 years in the career field as well as just over 6 years TAFMS.

VI. RESEARCH JOB (ST013). The 10 incumbents in this job comprise 4 percent of the survey sample and report spending 52 percent of their time performing Physiological Research activities of Duty G. They also spend 11 percent of their time performing the Management and Supervisory tasks of Duty (Table 3). The members of this job perform an average of 170 tasks second most only to Procedures Trainer Job. All 10 incumbents are located at Brooks AFB, TX. Some representative tasks performed by these incumbents are:

- Perform outside observer duties during research chamber flights
- Perform inside observer duties during research chamber flights
- Perform crew chief duties during research chamber flights
- Perform lock operator duties during research chamber flights
- Perform recorder duties during research chamber flights
- Size and fit research subjects with oxygen equipment
- Record experimental data
- Clean flight helmets or oxygen masks
- Perform daily inspections of human experimental hyperbaric or hypobaric chambers
- Perform oxygen flow checks of A-14 pressure-demand oxygen regulators
- Remove or install treadmills in hypobaric chambers
- Perform recorder duties during centrifuge operations
- Perform chamber operator duties during research chamber flights

Representative task modules for this job include:

<u>TM</u>	<u>Module Title</u>	<u>No. of Tasks</u>	<u>Percent Time Spent</u>	<u>Average Percent Members Performing</u>
0015	Research Chamber Duties	6	18	98
0022	Hyperbaric Chamber Maintenance	15	15	55
0005	OJT	4	4	50
0003	Hypobaric Chamber Maintenance	10	7	59
0001	Hypobaric Chamber Flights	9	3	28

Task module analysis shows that this group spends approximately 18 percent of their time on Research Chamber duties. This duty has an average of 98 percent of it's members performing this task. This is the only task performed by this group that is greater than 60 percent members performing.

Eighty percent of these job incumbents hold the 5-skill level, with the other 20 percent holding the 3-skill level (Table 4). These members average almost 8 years in the career field and TAFMS. The predominant paygrade is E-5.

VII. U-2 AIRCRAFT JOB (ST015). The 29 airmen forming this job (12 percent of the survey sample) are distinguished by the 66 percent of their time being spent on performing Pressure Suit Physiological Support activities of Duty D (Table 3). The pressure suit is only used in conjunction with the U-2 Aircraft stationed at Beale AFB, CA. All 29 airmen, with the exception of two who are stationed at Edwards AFB, CA are stationed at Beale AFB. They average performing 136 tasks. Representative tasks performed by these incumbents include:

- Perform occupied full pressure suit integration tests
- Perform high-flight recovery activities
- Perform high-flight launch activities, such as preflight, layout, physical, dress, integration, prior to entry, and hookup
- Perform low-flight launch activities, such as preflight, pick-up, prior to entry, and hookup
- Perform low-flight recovery activities
- Inspect or maintain transport vans
- Perform preflight physical examinations of pressure suit occupants
- Perform preflight or postflight inspections of full pressure suits
- Upload or download survival kits or parachutes
- Inspect or maintain U-2 survival kits
- Inspect or maintain U-2 parachutes
- Fill portable liquid oxygen (LOX) ventilation units

Representative task modules for this job include:

<u>TM</u>	<u>Module Title</u>	<u>No. of Tasks</u>	<u>Percent Time Spent</u>	<u>Average Percent Members Performing</u>
0016	U-2 Aircraft Duties	11	28	93
0017	Pressure Suit Maintenance	5	7	66
0018	LOX	4	4	62
0019	Pressure Suit Component Maintenance	6	5	55
0005	OJT	4	3	39

+ Task module analysis shows that this group spends almost 45 percent of their time working with the U-2 or equipment that is used directly in it's operation.

The predominant paygrade is E-4 and 66 percent reporting they supervise others. The members of this job average over 7 1/2 years in the career field and over 8 years TAFMS.

Comparison to Previous Study

The AFSC 4M0X1 career ladder structure has undergone a few changes since the last study was performed in 1995 (See Table 5). While most of the jobs that were found in the previous OSR were also still in existence in the current study, the distribution of personnel in the different jobs has changed significantly. Possibly the greatest change has been the 20 percent downsize of the entire career ladder from 481 to 381 personnel which may account for many of the manning changes that have occurred. The Procedures Trainer Job was not identified in the previous study as these personnel were probably grouped in with the Aerospace Physiology Technician Job Cluster. Finally both the Hyperbaric Chamber Equipment Maintenance Independent Job and the Training Job no longer exist as separate entities. These are now tasks that are performed across the board by almost everyone in the career field and do not warrant a separate cohesive job group.

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. The DAFSC analysis identifies differences in tasks performed at the various skill levels. This information may then be used to evaluate how well career ladder documents, such as the AFMAN 36-2108 *Airman Classification, Specialty Description*, and the Career Field Education and Training Plan (CFETP), reflect what career ladder personnel are actually doing in the field.

The distribution of skill-level groups across the career ladder jobs and clusters is displayed in Table 6, while Table 7 offers another perspective by displaying the relative percent time spent on each duty across skill-level groups. A somewhat typical pattern of progression is noted within the AFSC 4M0X1 career ladder. Personnel at the 3- and 5-skill levels work in the technical jobs of the career ladder and spend most of their time on technical tasks. As incumbents move up to the 7-skill level they begin to perform supervisory tasks, but still spend some of their time performing the technical tasks of the career ladder.

Skill-Level Descriptions

DAFSC 4M031: Representing 27 percent of the survey sample, these 66 airmen perform an average of 40 tasks, the fewest of any DAFSC group, and primarily perform in the Apprentice Chamber Cluster (see Table 6). Table 7 reflects the percent time spent on duties by DAFSC 4M0X1 personnel. At the 3-skill level, their time is well-distributed among the technical tasks of the career ladder. Representative tasks performed by these members are listed in Table 8.

DAFSC 4M051: The 121 members of this group account for 49 percent of the survey sample and perform an average of 74 tasks. Thirty-four members work in the General Physiology job, 21 percent work in the Supervisory Job, and another 17 percent work in the U-2 Aircraft Job. (See Table 6). Table 7 provides a comparison of the relative time spent on duties at the 5-skill level. This table reflects a pattern similar to the 3-skill level, with fairly even distribution of members performing the technical tasks of the career ladder. As shown in this table, 5-skill level personnel begin to perform the supervisory tasks of Duty J.

Table 9 lists representative tasks performed by DAFSC 4M051 personnel. Table 10 reflects those tasks which best differentiate the 3-skill level members from the 5-skill level members. This table shows 5-skill level members perform supervisory tasks not performed at the 3-skill level.

DAFSC 4M071: These 53 members perform an average of 91 tasks and represent 21 percent of the survey sample. They perform more tasks than other skill-level groups, because many are performing duties as first-line supervisors. Table 6 shows the majority of members are in the Supervisory Job (72 percent).

Table 7 reflects the percent time spent on duties by DAFSC 4M071 members. This table clearly shows the decrease in the amount of time spent by members performing the technical tasks

of Duty A through Duty I, compared to the 3- and 5-skill level members, while showing the increase in time spent performing management and supervisory tasks.

Representative tasks performed by 7-skill level members are reflected in Table 11. Table 12 reflects tasks which best differentiate between 5- and 7-skill levels. This table clearly shows the much higher devotion to management and supervisory tasks at the 7-skill level than the 5-skill level.

DAFSC 4M091: These 7 members perform an average of 62 tasks and represent 3 percent of the survey sample. These experienced personnel perform work in the Supervisory Job (See Table 6). They spend the majority of their time (67 percent) performing supervisory and administrative tasks, although they still perform some technical duties (See Table 7). Table 13 lists tasks representative of 9-skill level members' work, while Table 14 shows the tasks which best differentiate them from their junior counterparts. It is apparent that 9-skill level members are primarily pure supervisors who do not perform technical and training functions.

Summary

Progression in the Aerospace Physiology career ladder follows a typical pattern with a highly technical job focus at the lower skill levels, and with a broadening into supervision and management at the 7-skill level. Both 3- and 5-skill level personnel have technically-oriented jobs that include many of the core tasks of the career field, with broadening into supervisory functions at the 7-skill level.

TRAINING ANALYSIS

Occupational survey data are one of many sources of information which can be used to assist in the development of a training program relevant to the needs of personnel in their first enlistment. Factors which may be used in evaluating training include the overall description of the work being performed by first-job or first-enlistment personnel and their overall distribution across career ladder jobs, percentages of first-job (1-24 months TAFMS) or first-enlistment (1-48 months TAFMS) members performing specific tasks, as well as TE and TD ratings (previously explained in the SURVEY METHODOLOGY SECTION).

AFSC 4M0X1 FIRST-ENLISTMENT PERSONNEL CAREER LADDER

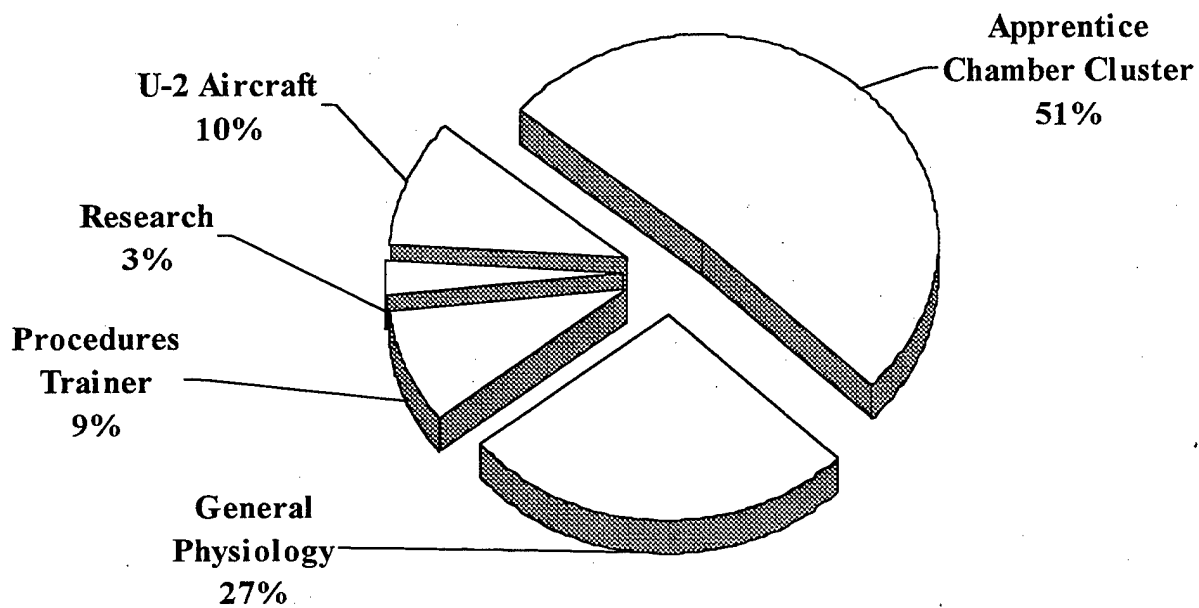


FIGURE 2

First-Enlistment Personnel

There are 72 survey respondents in their first-enlistment, representing 29 percent of the total survey sample. Figure 2 reflects the distribution of first-enlistment personnel within the career ladder. Table 15 displays the relative percent of time spent on duties by first-enlistment personnel. Reviewing the table, first-enlistment personnel spend a combined 48 percent of their time performing tasks in Duties A, B and D (25, 13, and 10 percent respectively). First-enlistment personnel are primarily employed in the Apprentice Hypobaric Chamber Cluster, with representative tasks performed displayed in Table 16.

Table 17 represents a list of equipment items used by more than 20 percent of first-enlistment AFSC 4M0X1 personnel.

Task Difficulty (TD) Data

TD data is a secondary factor that can assist technical school personnel in deciding which tasks should be emphasized in entry-level training. These ratings, based on the judgments of senior career ladder NCOs working at operational units in the field, are collected to provide training personnel with a measure of the difficulty of the JI tasks (see high rated tasks presented in Table 18). When combined with data on the percentages of first-enlistment personnel performing tasks, comparisons can then be made to determine if training adjustments are necessary. For example, tasks receiving high TD ratings, accompanied by moderate to high percentages performing, may warrant resident training. Those tasks receiving TD ratings, but low percentages performing, may be more appropriately planned for OJT programs within the career ladder. Low TD ratings may highlight tasks best omitted from training for first-enlistment personnel, but this decision must be weighed against percentages of personnel performing the tasks, command concerns, and criticality of the tasks.

Table 18 presents tasks with the highest TD ratings for AFSC 4M0X1 first-enlistment airmen. The percentage of 1-24 months, 3-, 5-, and 7-skill level personnel performing, is also included in the table. While there are several tasks that received a high TD rating, too few members are performing these tasks to warrant inclusion in the 3-skill level course.

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

Specialty Training Standard (STS)

A comprehensive review of STS 4M0X1, dated August 1997, Change 1- June 1998, compared STS items to survey data (based on the previously mentioned assistance from subject-matter experts in matching JI tasks to STS elements). STS elements containing general knowledge information, mandatory entries, subject-matter-knowledge-only requirements, or basic supervisory responsibilities were not examined. Task knowledge and performance elements of the STS were compared against the standard set forth in AETCI 36-2601 and AFI 36-2623 (i.e., include tasks performed or knowledge required by 20 percent or more of the personnel in a skill level [criterion group] of the specialty).

Out of the 22 proficiency coded items for the 3-skill level technical course, all 22 items were well supported. Tasks not referenced to any element of the STS are listed at the end of the STS computer listing of the Training Extract. These tasks were reviewed to determine if there were any tasks concentrated around any particular function or job. Many of the unreferenced tasks are managerial or supervisory in nature and not normally matched to an STS. Those tasks that could be included in the course deal mostly with inspections and maintenance of Aerospace Physiology equipment and should be reviewed by training personnel to determine if STS inclusion is necessary. A sample of technical tasks, performed by 20 percent or more criterion group members, not referenced to the STS, is listed in Table 19.

Plan of Instruction (POI) Analysis

Technical school SMEs matched JI tasks to POI 3ABY4M031-001, dated May 1999, training objectives. Objectives were evaluated in a method similar to the STS analysis, as percent members performing data for first-job (1-24 months TAFMS) and first-enlistment (1-48 months TAFMS) personnel, and TD ratings were examined (TE ratings were unacceptable and could not be used).

POI blocks, units of instruction, and criterion objectives were compared against guidance provided by AETCR 52-22 (30 percent or more criterion first-enlistment group performing trained tasks). In accordance with this guidance, tasks trained in the course not meeting these criteria should be considered for elimination from formal course training if not justified on some other acceptable basis.

POI analysis reveals out of the 13 objectives that were matched, all were well supported by percent members performing data. Many technical tasks, performed by over 30 percent of first-enlistment personnel, were not matched to the POI. Examples are listed in Table 20. Many of these tasks are repetitions of those tasks not matched to the STS, with the addition of some classroom instruction and briefing tasks. Training personnel should review these and other unreferenced tasks to determine if these areas should be incorporated into the formal course.

JOB SATISFACTION ANALYSIS

An examination of the job satisfaction indicators of various groups can give career ladder managers a better understanding of some of the factors which may affect the job performance of airmen in the career ladder. Attitude questions covering job interest, perceived utilization of talents and training, sense of accomplishment from work, and reenlistment intentions were included in the survey booklet to provide indications of job satisfaction.

With this in mind, job satisfaction responses for AFSC 4M0X1 personnel were analyzed and provided the following comparisons: (1) among TAFMS groups of the AFSC 4M0X1 career ladder and a comparative sample of medical personnel surveyed in 1998 and (2) between current and previous AFSC 4M0X1 respondents.

Table 21 presents job satisfaction data for AFSC 4M0X1 TAFMS groups, together with TAFMS data for a comparative sample of Medical career ladders surveyed in 1998. First-enlistment personnel rated perception of job interest, reenlistment intentions, and sense of accomplishment gained from work higher than the comparative sample. They also have the same perception of their talent utilization as the comparative sample. Second-enlistment personnel rated all areas higher than the comparative sample, including reenlistment intentions. Career airmen (those over 8 years TAFMS), rated all areas higher than the comparative sample--especially reenlistment intentions. All TAFMS groups rate reenlistment intentions considerably higher than the comparative sample.

In Table 22, a review of the job satisfaction ratings for the specialty jobs and clusters identified in this survey reveals very high satisfaction ratings for all areas among the Research Job members. It is interesting to note that the lowest ratings found for the reenlistment intentions question is considerably higher than the current trend across the Air Force.

An indication of changes in job satisfaction perceptions within the career ladder over time is provided in Table 23 which compares TAFMS group data for current survey respondents to that of the previous survey respondents. The current AFSC 4M0X1 respondents are generally as satisfied with their jobs as those respondents surveyed in 1995. The current survey 1-48 months TAFMS group members report having less of a sense of accomplishment as a result of their work, however, their intent to reenlist is 7 percent greater. The current 49-96 months TAFMS group members are lower in every aspect of job satisfaction than the previous study respondents. The current 97+ months TAFMS group members are higher in every aspect than previous study respondents with the greatest increase falling under sense of accomplishment gained from work.

Overall, AFSC 4M0X1 members are more satisfied with their jobs than members of a comparative sample of medical career ladder personnel. Furthermore, members of the current sample are as satisfied with their jobs as previous AFSC 4M0X1 personnel surveyed in 1995. Job satisfaction data of specific career ladder job members show most job members are satisfied with their work.

IMPLICATIONS

This survey was initiated to provide current job and task data for use in evaluating the AFMAN 36-2108 *Specialty Description* and appropriate training documents. Survey results clearly indicate that the present classification structure, as described in the latest specialty description, accurately portrays the jobs performed in this career ladder.

Based on survey data, the career ladder training documents are accurately supported by percent members performing data as well as TD ratings. Training personnel will want to look at the extensive task not referenced list to see if any of the unreferenced tasks warrant inclusion into the formal course training.

The career ladder progression is typical, with the move from technical work at the 3- and 5-skill levels to supervisory and management tasks at the 7-skill level. Overall, AFSC 4MOX1 members are more satisfied with their jobs than members of a comparative sample of medical career ladder personnel. Furthermore, members of the current sample are as satisfied with their jobs as previous AFSC 4MOX1 personnel surveyed in 1995. Job satisfaction data of specific career ladder job members show most job members are satisfied with their work.

THIS PAGE INTENTIONALLY LEFT BLANK

APPENDIX A

TABLES 1-23

THIS PAGE INTENTIONALLY LEFT BLANK

TABLE 1

MAJCOM REPRESENTATION OF AFSC 4M0X1 SAMPLE

<u>MAJOR COMMAND</u>	<u>PERCENT OF ASSIGNED**</u>	<u>PERCENT OF SAMPLE</u>
ACC	35	33
AFMC	27	24
AETC	19	22
AMC	10	13
PACAF	4	5
USAFA	3	3
OTHER	2	*

*Less than 1 percent

- Other includes AFSOC and ELM

	<u>AFSC 4M0X1</u>
TOTAL ASSIGNED**	381
TOTAL ELIGIBLE	305
TOTAL IN SAMPLE	247
PERCENT OF ASSIGNED IN SAMPLE	81%
PERCENT OF ELIGIBLE IN SAMPLE	65%

** Assigned strength as of October 1998

- Excludes personnel in PCS, student, or hospital status, or less than 6 weeks on the job

TABLE 2

PAYGRADE DISTRIBUTION OF SURVEY SAMPLE FOR AFSC 4M0X1

<u>PAYGRADE</u>	<u>PERCENT ASSIGNED*</u>	<u>PERCENT SAMPLE</u>
E-1 to E-3	23	23
E-4	25	23
E-5	28	28
E-6	13	15
E-7	9	9
E-8	2	2

* Assigned strength as of October 1998

TABLE 3

RELATIVE PERCENT TIME SPENT ON DUTIES BY SPECIALTY JOBS

DUTIES	Apprentice Chamber Cluster (ST20) (N=48)	General Physiology Job (ST17) (N=53)	Supervisory Job (ST21) (N=69)	Hyperbaric Chamber Job (ST19) (N=8)	Procedures Trainer Job (ST30) (N=16)	Research Job (ST13) (N=10)	U-2 Aircraft Job (ST15) (N=29)
A	37	15	6	7	13	6	3
B	19	8	4	4	9	6	3
C	10	14	10	1	20	*	1
D	1	*	*	*	1	*	66
E	1	4	4	2	*	*	*
F	3	5	6	*	36	2	*
G	2	3	*	7	*	52	*
H	6	4	2	29	*	*	*
I	5	2	4	4	1	4	2
J	1	15	40	23	3	11	11
K	5	12	12	7	6	5	4
L	7	11	7	9	6	7	3
M	3	6	4	6	3	5	5

* * indicates less than 1 percent

TABLE 4

SELECTED BACKGROUND DATA FOR SPECIALTY JOBS

	Apprentice Chamber Cluster (ST20)	General Physiology Job (ST17)	Supervisory Job (ST21)	Hyperbaric Chamber Job (ST19)	Procedures Trainer Job (ST30)	Research Job (ST13)	U-2 Aircraft Job (ST15)
NUMBER IN GROUP	48	53	69	8	16	10	29
PERCENT OF SAMPLE	19%	21%	28%	3%	6%	4%	12%
PERCENT IN CONUS	92%	90%	91%	75%	94%	100%	97%
SKILL-LEVEL DISTRIBUTION:							
4MO31	83%	20%	0%	0%	24%	20%	14%
4MO51	15%	71%	36%	75%	63%	80%	72%
4MO71	2%	9%	55%	25%	13%	0%	14%
4MO91	0%	0%	9%	0%	0%	0%	0%
PREDOMINANT GRADE(S)							
AVERAGE MONTHS IN CAREER FIELD	E-2 35	E-5 92	E-6/7 159	E-5 98	E-4 76	E-5 94	E-4 91
AVERAGE TAFMS	43	99	187	130	76	95	101
PERCENT WITH 1-48 MOS IN CAREER FIELD	76%	25%	2%	13%	44%	20%	20%
PERCENT SUPERVISING							
AVERAGE NUMBER OF TASKS PERFORMED	6%	50%	86%	50%	37%	40%	66%
	35	60	105	64	258	170	136

TABLE 5

SPECIALTY JOB COMPARISONS BETWEEN CURRENT AND 1995 SURVEYS

<u>CURRENT SURVEY (N=247)</u>	<u>PERCENT OF SAMPLE</u>	<u>1995 SURVEY (N=359)</u>	<u>PERCENT OF SAMPLE</u>
APPRENTICE CHAMBER CLUSTER	20	ENTRY LEVEL AEROSPACE PHYSIOLOGY TECHNICIAN INDEPENDENT JOB	6
GENERAL PHYSIOLOGY JOB	21	AEROSPACE PHYSIOLOGY TECHNICIAN JOB CLUSTER	68
HYPERBARIC CHAMBER JOB	3	HYPERBARIC CHAMBER INDEPENDENT JOB	2
RESEARCH JOB	4	RESEARCH CHAMBER INDEPENDENT JOB	2
U-2 AIRCRAFT JOB	12	PRESSURE SUIT INDEPENDENT JOB	9
SUPERVISORY JOB	28	SUPERINTENDENT INDEPENDENT JOB	3
PROCEDURES TRAINER JOB	6	NOT IDENTIFIED	-
NOT IDENTIFIED	-	HYPERBARIC CHAMBER EQUIPMENT MAINTENANCE INDEPENDENT JOB	2
NOT IDENTIFIED	-	TRAINING JOB	2
NOT GROUPED	6	NOT GROUPED	6

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

<u>JOB</u>	<u>DAFSC 4M031 (N=66)</u>	<u>DAFSC 4M051 (N=121)</u>	<u>DAFSC 4M071 (N=53)</u>	<u>DAFSC 4M091 (N=7)</u>
APPRENTICE CHAMBER CLUSTER	61	6	2	0
GENERAL PHYSIOLOGY JOB	18	34	9	0
HYPERBARIC CHAMBER JOB	0	5	4	0
RESEARCH JOB	3	7	0	0
U-2 AIRCRAFT JOB	6	17	8	0
SUPERVISORY JOB	0	21	72	86
PROCEDURES TRAINER JOB	6	8	4	0
NOT GROUPED	6	2	1	14

TABLE 7

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

JOB	DAFSC	DAFSC	DAFSC	DAFSC
	4M031 (N=66)	4M051 (N=121)	4M071 (N=53)	4M091 (N=7)
A PERFORMING HYPOBARIC CHAMBER ACTIVITIES	28	12	6	3
B PERFORMING LIFE SUPPORT EQUIPMENT ACTIVITIES, OTHER THAN PRESSURE SUIT	14	7	4	2
C PERFORMING AEROSPACE PHYSIOLOGY INSTRUCTION OR TRAINING	9	10	9	7
D PERFORMING PRESSURE SUIT PHYSIOLOGY SUPPORT ACTIVITIES	7	13	4	*
E PERFORMING HIGH-ALTITUDE AIRDROP MISSION SUPPORT (HAAMS) ACTIVITIES	2	2	3	*
F PERFORMING AIRCRAFT EMERGENCY ESCAPE AND SPECIAL PHYSIOLOGY TRAINER ACTIVITIES	5	7	6	1
G PERFORMING PHYSIOLOGY RESEARCH ACTIVITIES	5	5	*	*
H PERFORMING HYPERBARIC CHAMBER ACTIVITIES	6	4	2	2
I PERFORMING MEDICAL READINESS ACTIVITIES	4	3	3	4
J PERFORMING MANAGEMNT AND SUPERVISORY ACTIVITIES	2	15	40	67
K PERFORMING TRAINING ACTIVITIES	7	9	12	5
L PERFORMING GENERAL ADMINSTRATIVE AND TECHNICAL ORDER (TO) SYSTEM ACTIVITIES	7	8	7	7
M PERFORMING GENERAL SUPPLY AND EQUIPMENT ACTIVITIES	4	5	3	1

* Denotes less than 1 percent

TABLE 8
 REPRESENTATIVE TASKS PERFORMED BY
 4M031 PERSONNEL

TASKS	PERCENT MEMBERS PERFORMING (N=66)
A0010 Perform inside observer duties during hypobaric chamber flights, other than research flights	92
B0020 Fit students with oxygen masks	89
B0019 Fit students with flight helmets	88
B0017 Clean flight helmets or oxygen masks	86
A0004 Perform recorder duties during hypobaric chamber flights, other than research flights	79
A0003 Perform crew chief duties during manual hypobaric chamber flights, other than research flights	76
A0006 Perform chamber operator duties during manual hypobaric chamber flights, other than research flights	73
A0012 Perform lock operator duties during hypobaric chamber flights, other than research flights	70
A0014 Perform oxygen flow checks of narrow panel pressure-demand oxygen regulators	67
C0029 Conduct briefings on rapid decompression	65
A0001 Maintain or store high-pressure oxygen cylinders	61
A0007 Perform daily inspections of hypobaric chamber assemblies	56
B0022 Inspect or maintain life support equipment	55
K0340 Conduct tours of aerospace physiology facilities	55
B0024 Store training aids or life support equipment	48
A0008 Perform general maintenance on hypobaric chambers or subassemblies	48
A0015 Perform periodic inspections of hypobaric chamber assemblies	48
C0046 Conduct classroom instruction concerning use of oxygen equipment	44
B0018 Construct life support equipment	44
I0256 Administer or practice cardiopulmonary resuscitation (CPR)	44
A0013 Perform oxygen flow checks of A-14 pressure-demand oxygen regulators	41
A0009 Perform general maintenance on vacuum pumps	39
A0016 Perform special inspections of hypobaric chamber assemblies	38
A0005 Perform chamber operator duties during automated hypobaric chamber flights, other than research flights	36
A0002 Perform crew chief duties during automated hypobaric chamber flights, other than research flights	35

AVERAGE NUMBER OF TASKS PERFORMED: 40

TABLE 9
 REPRESENTATIVE TASKS PERFORMED BY
 4M051 PERSONNEL

TASKS	PERCENT MEMBERS PERFORMING (N=121)
B0020	85
A0010	83
B0019	82
B0017	80
K0340	75
C0029	74
A0011	71
K0341	71
C0046	66
A0004	66
C0032	64
A0001	64
A0012	59
J0297	57
A0006	56
K0352	56
K0342	55
B0024	55
A0003	54
J0296	52
J0321	51
J0299	51
B0022	50
C0034	49

AVERAGE NUMBER OF TASKS PERFORMED: 74

TABLE 10

TASKS WHICH BEST DIFFERENTIATE BETWEEN
DAFSC 4M031 AND DAFSC 4M051 PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS	DAFSC 4M031 (N=66)	DAFSC 4M051 (N=121)	DIFFERENCE
A0003 Perform crew chief duties during manual hypobaric chamber flights, other than research flights	76	54	22
J0297 Counsel subordinates concerning personal matters	*	57	-57
J0296 Conduct supervisory performance feedback sessions	*	52	-52
J0334 Write recommendations for awards or decorations	*	48	-48
J0321 Inspect personnel for compliance with military standards	3	51	-48
J0299 Determine or establish work assignments or priorities	3	51	-48
J0322 Interpret policies, directives, or procedures for subordinates	*	47	-47
J0312 Evaluate personnel for compliance with performance standards, other than students	3	49	-46
J0333 Write or indorse military performance reports	*	46	-46
K0342 Counsel trainees on training progress	9	55	-46

TABLE 11
 REPRESENTATIVE TASKS PERFORMED BY
 4M071 PERSONNEL

TASKS	PERCENT MEMBERS PERFORMING (N=53)	
J0321	Inspect personnel for compliance with military standards	92
J0297	Counsel subordinates concerning personal matters	92
J0322	Interpret policies, directives, or procedures for subordinates	91
J0312	Evaluate personnel for compliance with performance standards, other than students	91
J0313	Evaluate personnel for promotion, demotion, reclassification, or special awards	91
B0020	Fit students with oxygen masks	89
K0343	Determine training requirements	87
J0310	Establish performance standards for subordinates	87
J0296	Conduct supervisory performance feedback sessions	87
K0342	Counsel trainees on training progress	87
B0019	Fit students with flight helmets	87
A0010	Perform inside observer duties during hypobaric chamber flights, other than research flights	85
A0011	Perform lecturer observer duties during hypobaric chamber flights, other than research flights	85
J0319	Initiate actions required due to substandard performance of personnel	85
J0334	Write recommendations for awards or decorations	83
J0291	Conduct self-inspections or self-assessments	83
J0299	Determine or establish work assignments or priorities	81
J0333	Write or indorse military performance reports	81
C0029	Conduct briefings on rapid decompression	81
B0017	Clean flight helmets or oxygen masks	81
J0292	Conduct general meetings, such as staff meetings, briefings, conferences, or workshops	77
K0341	Conduct on-the-job training (OJT)	77
J0302	Develop or establish work schedules	75
J0329	Schedule personnel for temporary duty (TDY) assignments, leaves, or passes	75

AVERAGE NUMBER OF TASKS PERFORMED: 91

TABLE 12

TASKS WHICH BEST DIFFERENTIATE BETWEEN
DAFSC 4M051 AND DAFSC 4M071 PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS	DAFSC 4M051 (N=121)	DAFSC 4M071 (N=53)	DIFFERENCE
A0003 Perform crew chief duties during manual hypobaric chamber flights, other than research flights	54	25	29
A0007 Perform daily inspections of hypobaric chamber assemblies	44	19	25
J0319 Initiate actions required due to substandard performance of personnel	28	85	-57
J0329 Schedule personnel for temporary duty (TDY) assignments, leaves, or passes	20	75	-56
J0313 Evaluate personnel for promotion, demotion, reclassification, or special awards	36	91	-55
J0290 Assign sponsors for newly assigned personnel	8	60	-52
J0326 Review budget requirements	17	66	-50
J0303 Develop organizational or functional charts	15	60	-46

TABLE 13
 REPRESENTATIVE TASKS PERFORMED BY
 4M091 PERSONNEL

TASKS	PERCENT MEMBERS PERFORMING (N=7)
J0313 Evaluate personnel for promotion, demotion, reclassification, or special awards	100
J0322 Interpret policies, directives, or procedures for subordinates	100
J0297 Counsel subordinates concerning personal matters	100
J0309 Establish organizational policies, such as operating instructions (OIs) or standard operating procedures (SOPs)	100
J0334 Write recommendations for awards or decorations	86
J0292 Conduct general meetings, such as staff meetings, briefings, conferences, or workshops	86
J0321 Inspect personnel for compliance with military standards	86
J0312 Evaluate personnel for compliance with performance standards, other than students	86
J0336 Write staff studies, surveys, or routine reports, other than training or inspection reports	86
J0314 Evaluate inspection report findings or inspection procedures	86
J0319 Initiate actions required due to substandard performance of personnel	86
J0320 Initiate personnel action requests	86
J0326 Review budget requirements	86
J0327 Review drafts of supplements or changes to directives, such as policy directives, instructions, or manuals	86
J0329 Schedule personnel for temporary duty (TDY) assignments, leaves, or passes	86
J0308 Draft supplements or changes to directives, such as policy directives, instructions, or manuals	86
J0303 Develop organizational or functional charts	86
J0301 Develop or establish work methods or procedures	86
J0290 Assign sponsors for newly assigned personnel	86
A0010 Perform inside observer duties during hypobaric chamber flights, other than research flights	86
L0361 Enter, modify, or retrieve data from unit computer systems	71
J0302 Develop or establish work schedules	71
J0295 Conduct supervisory orientations for newly assigned personnel	71
J0288 Assign personnel to work areas or duty positions	71
J0298 Determine or establish logistics requirements, such as personnel, equipment, tools, parts, supplies, or workspace	71

AVERAGE NUMBER OF TASKS PERFORMED: 62

TABLE 14

TASK WHICH BEST DIFFERENTIATE BETWEEN
DAFSC 4M071 AND DAFSC 4M091 PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS	DAFSC 4M071 (N=53)	DAFSC 4M091 (N=7)	DIFFERENCE
B0017	81	14	67
L0371	68	14	54
K0341	77	29	49
C0046	62	14	48
C0028	47	*	47
K0343	87	43	44
C0037	43	*	43
J0336	38	86	-48
J0325	30	71	-41
J0308	51	86	-35
J0323	26	57	-31
I0263	13	43	-30
J0309	72	100	-28

TABLE 15

RELATIVE PERCENT OF TIME SPENT ACROSS DUTIES BY
FIRST-ENLISTMENT AFSC 4M0X1 PERSONNEL

<u>DUTY AREA</u>	<u>PERCENT TIME SPENT</u>
A PERFORM HYPOBARIC CHAMBER ACTIVITIES	26
B PERFORM LIFE SUPPORT EQUIPMENT ACTIVITIES, OTHER THAN PRESSURE SUIT	14
C PERFORM AEROSPACE PHYSIOLOGY INSTRUCTION OR TRAINING	8
D PERFORM PRESSURE SUIT PHYSIOLOGICAL SUPPORT ACTIVITIES	10
E PERFORM HIGH-ALTITUDE AIRDROP MISSION SUPPORT (HAAMS) ACTIVITIES	2
F PERFORM AIRCRAFT EMERGENCY ESCAPE AND SPECIAL PHYS TRAINER ACT.	6
G PERFORM PHYSIOLOGICAL RESEARCH ACTIVITIES	5
H PERFORM HYPERBARIC CHAMBER ACTIVITIES	5
I PERFORM MEDICAL READINESS ACTIVITIES	4
J PERFORM MANAGEMENT AND SUPERVISORY ACTIVITIES	2
K PERFORM TRAINING ACTIVITIES	7
L PERFORM GENERAL ADMINISTRATIVE AND TECH ORDER SYSTEM ACTIVITIES	7
M PERFORM GENERAL SUPPLY AND EQUIPMENT ACTIVITIES	4

TABLE 16

REPRESENTATIVE TASKS PERFORMED BY
FIRST-ENLISTMENT AFSC 4M0X1 PERSONNEL

<u>TASKS</u>	<u>PERCENT MEMBERS PERFORMING (N=72)</u>
A0010 Perform inside observer duties during Hypobaric chamber flights, other than research flights	92
B0020 Fit students with oxygen masks	87
B0019 Fit students with flight helmets	86
A0003 Perform crew chief duties during manual hypobaric chamber flights, other than research flights	74
B0017 Clean flight helmets or oxygen masks	85
A0004 Perform recorder duties during hypobaric chamber flights, other than research flights	76
A0006 Perform chamber operator duties during manual hypobaric chamber flights, other than research flights	71
A0012 Perform lock operator duties during hypobaric chamber flights, other than research flights	67
A0014 Perform oxygen flow checks of narrow panel pressure-demand oxygen regulators	64
C0029 Conduct briefings on rapid decompression	64
A0007 Perform daily inspections of hypobaric chamber assemblies	56
K0340 Conduct tours of aerospace physiology facilities	58
B0022 Inspect or maintain life support equipment	53

TABLE 17

EQUIPMENT ITEMS USED BY MORE THAN 20 PERCENT OF
FIRST-ENLISTMENT AFSC 4M0X1 PERSONNEL

<u>EQUIPMENT</u>	<u>PERCENT MEMBERS USING (N=72)</u>
OXYGEN MANIFOLDS	82
HYPOBARIC CHAMBERS	81
VACUUM PUMPS	74
DESKTOP COMPUTERS	68
OXYGEN CHARGING ASSEMBLIES	53
SPATIAL DISORIENTATION TRAINERS	46
NIGHT VISION TRAINERS	43
COMPRESSORS	42
MEDICAL SUPPLY CABINETS	42
AUDIOVISUAL EQUIPMENT	40
GUAGES, 0-15 POUNDS PER SQUARE INCH	39
TEST KITS, OXYGEN REGULATOR	36
CLASSROOM MOCK UPS	35
STANDARD SCALES (12-20 POUND PULL)	31
TESTERS, EXHALATION VALVE	29
PERSONAL PROTECTIVE EQUIPMENT	26
HYPERBARIC CHAMBERS	25
TESTERS, HELMET ELECTRICAL	21

TABLE 18

TASKS RATED HIGHEST IN TASK DIFFICULTY

TASKS	TASK DIFF	1ST JOB (N=41)	1ST ENL (N=72)	PERCENT MEMBERS PERFORMING		
				3-SKL LVL (N=66)	5-SKL LVL (N=121)	7-SKL LVL (N=53)
D0098	7.86	2	6	3	7	4
D0100	7.79	2	11	6	17	8
D0076	7.78	2	6	5	5	4
F0149	7.63	0	0	0	1	0
D0074	7.63	2	7	5	10	4
F0150	7.50	0	0	0	2	0
D0102	7.48	2	8	6	12	6
D0103	7.44	5	8	6	12	6
D0082	7.12	2	6	5	4	4
D0069	7.03	5	13	8	21	8

TABLE 19

TECHNICAL TASKS PERFORMED BY 20 PERCENT OR MORE
CRITERION GROUP PERSONNEL AND NOT RERERENCED TO THE STS

PERCENT MEMBERS
PERFORMING

TASKS	1 ST JOB	1 ST ENL	4M031	4M051	4M071	4M091	TASK DIFF
A0009	39	36	39	36	28	14	5.43
A0015	51	46	48	36	19	14	5.65
A0016	39	36	38	35	19	4	6.01
B0022	59	53	55	50	40	14	4.56
G0212	27	21	21	21	9	0	5.15

TD MEAN = 5.00; S.D. = 1.00

TABLE 20

EXAMPLES OF TECHNICAL TASKS PERFORMED BY 30 PERCENT OR MORE
FIRST-ENLISTMENT PERSONNEL AND NOT REFERENCED TO THE POI

TASKS	PERCENT MEMBERS PERFORMING			TASK DIFF
	1 ST JOB	1 ST ENL		
A0009	39	36		5.43
A0015	51	46		5.65
A0016	39	36		6.01
B0022	59	53		4.56
A0004	85	76		3.35
C0029	54	64		4.17
C0046	24	44		5.05

TD MEAN = 5.00; S.D. = 1.00

TABLE 21

COMPARISON OF JOB SATISFACTION INDICATORS BY TAFMS GROUPS
(PERCENT MEMBERS RESPONDING)

	1-48 MOS TAFMS		49-96 MOS TAFMS		97+ MOS TAFMS	
	1998 4M0X1 (N=72)	COMP SAMPLE* (N=359)	1998 4M0X1 (N=51)	COMP SAMPLE* (N=217)	1998 4M0X1 (N=124)	COMP SAMPLE* (N=428)
INTERESTING	86	72	78	65	79	73
SO-SO	8	15	16	19	15	16
DULL	6	13	6	16	6	11
EXCELLENT TO PERFECTLY	13	17	24	13	12	17
FAIRLY TO VERY WELL	70	66	63	64	73	65
LITTLE OR NOT AT ALL	17	17	13	23	15	18
SATISFIED	75	69	76	58	76	69
NEUTRAL	11	14	12	17	12	11
DISSATISFIED	14	17	12	25	12	20
YES, OR PROBABLY YES	67	47	78	54	74	62
NO, OR PROBABLY NO	33	53	22	46	6	14
PLAN TO RETIRE	0	0	0	0	20	24

EXPRESSED JOB INTEREST:

INTERESTING
SO-SO
DULL

PERCEIVED UTILIZATION OF TALENTS:

EXCELLENT TO PERFECTLY
FAIRLY TO VERY WELL
LITTLE OR NOT AT ALL

SENSE OF ACCOMPLISHMENT GAINED

FROM WORK:
SATISFIED
NEUTRAL
DISSATISFIED

REENLISTMENT INTENTIONS:

YES, OR PROBABLY YES
NO, OR PROBABLY NO
PLAN TO RETIRE

* Comparative sample of Medical career ladders surveyed in 1998 include the 4J0X2, 4P0X1, and 4U0X1 AFSCs.

TABLE 22

COMPARISON OF JOB SATISFACTION INDICATORS BY SPECIALTY JOBS
(PERCENT MEMBERS RESPONDING)

	Apprentice Chamber Cluster (N=48)	General Phys Job (N=58)	Supv Job (N=69)	Hyperbaric Chamber Job (N=8)	Procedures Trainer Job (N=16)	Research Job (N=10)	U-2 Aircraft Job (N=29)
INTERESTING	81	76	86	75	75	90	86
SO-SO	15	17	12	13	19	10	7
DULL	4	7	2	12	6	0	7
EXCELLENT TO PERFECT	13	10	19	12	19	20	14
FAIRLY TO VERY WELL	71	72	71	88	69	80	62
LITTLE OR NOT AT ALL	16	17	10	0	12	0	24
SATISFIED	73	66	87	63	81	100	83
NEUTRAL	15	21	6	0	6	0	7
DISSATISFIED	12	13	7	37	13	0	10
YES, OR PROBABLY YES	71	79	72	75	63	90	66
NO, OR PROBABLY NO	29	19	3	13	31	10	24
WILL RETIRE	0	2	25	12	6	0	10

EXPRESSED JOB INTEREST:

INTERESTING
SO-SO
DULL

PERCEIVED UTILIZATION OF TALENTS:

EXCELLENT TO PERFECT
FAIRLY TO VERY WELL
LITTLE OR NOT AT ALL

SENSE OF ACCOMPLISHMENT GAINED
FROM WORK:

SATISFIED
NEUTRAL
DISSATISFIED

REENLISTMENT INTENTIONS:

YES, OR PROBABLY YES
NO, OR PROBABLY NO
WILL RETIRE

TABLE 23

COMPARISON OF JOB SATISFACTION INDICATORS FOR AFSC 4M0X1 TAFMS GROUPS IN CURRENT STUDY TO PREVIOUS STUDY (PERCENT MEMBERS RESPONDING)

1-48 MOS TAFMS		49-96 MOS TAFMS		97+ MOS TAFMS	
1998 4M0X1 (N=72)	1995 4M0X1 (N=132)	1998 4M0X1 (N=51)	1995 4M0X1 (N=78)	1998 4M0X1 (N=124)	1995 4M0X1 (N=149)
86	80	78	82	79	84
8	13	16	14	15	9
6	7	6	4	6	7
83	84	87	90	85	83
17	16	13	10	15	17
75	77	76	79	76	72
11	17	12	13	12	9
14	6	12	8	12	19
67	60	78	82	74	73
33	40	22	18	6	8
0	0	0	0	20	19

EXPRESSED JOB INTEREST:

INTERESTING
SO-SO
DULL

PERCEIVED UTILIZATION OF TALENTS:

FAIRLY WELL TO PERFECTLY
LITTLE OR NOT AT ALL

SENSE OF ACCOMPLISHMENT GAINED

FROM WORK:
SATISFIED
NEUTRAL
DISSATISFIED

REENLISTMENT INTENTIONS:

YES, OR PROBABLY YES
NO, OR PROBABLY NO
PLAN TO RETIRE

THIS PAGE INTENTIONALLY LEFT BLANK

APPENDIX B

**SELECTED REPRESENTATIVE TASKS PERFORMED BY
MEMBERS OF CAREER LADDER JOBS**

THIS PAGE INTENTIONALLY LEFT BLANK

TABLE B1
APPRENTICE CHAMBER CLUSTER

TASKS	PERCENT MEMBERS PERFORMING (N=48)
A0010 Perform inside observer duties during hypobaric chamber flights, other than research flights	98
B0020 Fit students with oxygen masks	96
B0019 Fit students with flight helmets	94
B0017 Clean flight helmets or oxygen masks	92
A0003 Perform crew chief duties during manual hypobaric chamber flights, other than research flights	90
A0004 Perform recorder duties during hypobaric chamber flights, other than research flights	90
A0006 Perform chamber operator duties during manual hypobaric chamber flights, other than research flights	88
A0012 Perform lock operator duties during hypobaric chamber flights, other than research flights	81
A0001 Maintain or store high-pressure oxygen cylinders	67
A0014 Perform oxygen flow checks of narrow panel pressure-demand oxygen regulators	65
C0029 Conduct briefings on rapid decompression	63
A0007 Perform daily inspections of hypobaric chamber assemblies	60
B0022 Inspect or maintain life support equipment	52
A0008 Perform general maintenance on hypobaric chambers or subassemblies	52
K0340 Conduct tours of aerospace physiology facilities	52
A0015 Perform periodic inspections of hypobaric chamber assemblies	50
B0024 Store training aids or life support equipment	46
B0018 Construct life support equipment	46
A0013 Perform oxygen flow checks of A-14 pressure-demand oxygen regulators	42
C0046 Conduct classroom instruction concerning use of oxygen equipment	40
A0005 Perform chamber operator duties during automated hypobaric chamber flights, other than research flights	40

TABLE B2

APPRENTICE HYPOBARIC JOB

TASKS		PERCENT MEMBERS PERFORMING (N=29)
B0017	Clean flight helmets or oxygen masks	100
B0020	Fit students with oxygen masks	100
B0019	Fit students with flight helmets	100
A0010	Perform inside observer duties during hypobaric chamber flights, other than research flights	97
A0007	Perform daily inspections of hypobaric chamber assemblies	93
A0001	Maintain or store high-pressure oxygen cylinders	93
A0003	Perform crew chief duties during manual hypobaric chamber flights, other than research flights	90
A0004	Perform recorder duties during hypobaric chamber flights, other than research flights	90
A0014	Perform oxygen flow checks of narrow panel pressure-demand oxygen regulators	90
A0008	Perform general maintenance on hypobaric chambers or subassemblies	83
A0006	Perform chamber operator duties during manual hypobaric chamber flights, other than research flights	83
A0015	Perform periodic inspections of hypobaric chamber assemblies	83
B0022	Inspect or maintain life support equipment	76
A0012	Perform lock operator duties during hypobaric chamber flights, other than research flights	72
B0018	Construct life support equipment	69
A0016	Perform special inspections of hypobaric chamber assemblies	66
A0013	Perform oxygen flow checks of A-14 pressure-demand oxygen regulators	66
B0024	Store training aids or life support equipment	62
A0009	Perform general maintenance on vacuum pumps	62
A0005	Perform chamber operator duties during automated hypobaric chamber flights, other than research flights	52
C0029	Conduct briefings on rapid decompression	52

TABLE B3

APRRENTICE HYPERBARIC JOB

TASKS		PERCENT MEMBERS PERFORMING (N=19)
A0010	Perform inside observer duties during hypobaric chamber flights, other than research flights	100
A0006	Perform chamber operator duties during manual hypobaric chamber flights, other than research flights	95
A0012	Perform lock operator duties during hypobaric chamber flights, other than research flights	95
A0003	Perform crew chief duties during manual hypobaric chamber flights, other than research flights	89
A0004	Perform recorder duties during hypobaric chamber flights, other than research flights	89
B0020	Fit students with oxygen masks	89
B0019	Fit students with flight helmets	84
B0017	Clean flight helmets or oxygen masks	79
C0029	Conduct briefings on rapid decompression	79
K0340	Conduct tours of aerospace physiology facilities	68
L0370	Maintain administrative files	42
K0352	Personalize lesson plans	42
L0380	Write minutes of briefings, conferences, or meetings	37
H0243	Perform recorder duties during hyperbaric chamber dives	37
H0244	Perform timekeeper duties during hyperbaric chamber dives	37
H0241	Perform lock operator duties during hyperbaric chamber dives	37
L0372	Maintain or update status indicators, such as boards, graphs, or charts	32
H0239	Perform crew chief duties during hyperbaric chamber dives	32
C0046	Conduct classroom instruction concerning use of oxygen equipment	32
H0245	Perform chamber operator duties during hyperbaric chamber dives	32
A0014	Perform oxygen flow checks of narrow panel pressure-demand oxygen regulators	26

TABLE B4
GENERAL PHYSIOLOGY JOB

TASKS	PERCENT MEMBERS PERFORMING (N=58)
B0020	100
B0019	100
A0010	98
C0029	95
A0004	93
A0011	88
C0046	88
A0006	88
B0017	88
A0012	86
A0003	84
C0032	79
K0341	76
K0340	74
K0352	72
C0034	69
C0042	67
A0014	64
C0037	60
C0040	60
B0024	60
A0001	60
K0342	53
L0361	50
J0312	48

TABLE B5
SUPERVISORY JOB

TASKS	PERCENT MEMBERS PERFORMING (N=69)	
J0297	Counsel subordinates concerning personal matters	97
J0321	Inspect personnel for compliance with military standards	97
J0322	Interpret policies, directives, or procedures for subordinates	94
J0299	Determine or establish work assignments or priorities	94
J0312	Evaluate personnel for compliance with performance standards, other than students	94
J0334	Write recommendations for awards or decorations	93
J0292	Conduct general meetings, such as staff meetings, briefings, conferences, or workshops	91
J0313	Evaluate personnel for promotion, demotion, reclassification, or special awards	91
J0310	Establish performance standards for subordinates	91
K0342	Counsel trainees on training progress	91
A0010	Perform inside observer duties during hypobaric chamber flights, other than research flights	91
B0020	Fit students with oxygen masks	91
J0301	Develop or establish work methods or procedures	90
J0309	Establish organizational policies, such as operating instructions (OIs) or standard operating procedures (SOPs)	90
J0298	Determine or establish logistics requirements, such as personnel, equipment, tools, parts, supplies, or workspace	90
A0011	Perform lecturer observer duties during hypobaric chamber flights, other than research flights	90
J0291	Conduct self-inspections or self-assessments	88
C0029	Conduct briefings on rapid decompression	88
B0019	Fit students with flight helmets	88
J0302	Develop or establish work schedules	87
J0333	Write or endorse military performance reports	87
J0319	Initiate actions required due to substandard performance of personnel	87
J0296	Conduct supervisory performance feedback sessions	86
J0331	Write job or position descriptions	84
K0343	Determine training requirements	83

TABLE B6

HYPERBARIC CHAMBER JOB

TASKS		PERCENT MEMBERS PERFORMING (N=8)
H0236	Load patients into or remove patients from hyperbaric chambers	100
H0245	Perform chamber operator duties during hyperbaric chamber dives	100
H0239	Perform crew chief duties during hyperbaric chamber dives	100
H0241	Perform lock operator duties during hyperbaric chamber dives	100
H0240	Perform inside observer duties during hyperbaric chamber dives	100
H0246	Perform daily inspections of hyperbaric chamber assemblies	100
H0249	Perform in-service qualification training or dives	100
K0341	Conduct on-the-job training (OJT)	88
K0343	Determine training requirements	88
J0295	Conduct supervisory orientations for newly assigned personnel	88
H0248	Perform general maintenance on hyperbaric chamber assemblies	88
I0256	Administer or practice cardiopulmonary resuscitation (CPR)	88
H0254	Schedule or coordinate hyperbaric on-call teams	75
H0243	Perform recorder duties during hyperbaric chamber dives	75
H0244	Perform timekeeper duties during hyperbaric chamber dives	75
K0338	Brief personnel, other than students, concerning training programs or matters	75
L0371	Maintain OJT training records or files	75
J0293	Conduct safety inspections of equipment or facilities	75
H0247	Perform daily inspections of low-pressure compressors	75
J0291	Conduct self-inspections or self-assessments	75
H0237	Locate and retrieve hyperbaric patient or lecture slides	75
A0001	Maintain or store high-pressure oxygen cylinders	75
L0361	Enter, modify, or retrieve data from unit computer systems	63
J0312	Evaluate personnel for compliance with performance standards, other than students	63
J0296	Conduct supervisory performance feedback sessions	63

TABLE B7
PROCEDURES TRAINER JOB

TASKS	PERCENT MEMBERS PERFORMING (N=16)
A0010 Perform inside observer duties during hypobaric chamber flights, other than research flights	100
C0027 Brief use of ejection seat trainers	100
F0122 Evaluate student performance on use of air egress trainers	100
F0123 Evaluate student performance on use of ground procedural trainers	100
B0024 Store training aids or life support equipment	100
C0029 Conduct briefings on rapid decompression	100
B0017 Clean flight helmets or oxygen masks	100
C0025 Administer fighter aircrew conditioning tests (FACTs)	94
F0117 Conduct instruction on use of in-flight or ground procedural trainers	94
C0047 Conduct training on air or ground egress procedural trainers	94
C0046 Conduct classroom instruction concerning use of oxygen equipment	94
F0126 Instruct or evaluate students during descent and landing training, including hanging harness and personal lowering devices	94
F0121 Evaluate student performance during live-fire ejection seat training	94
B0020 Fit students with oxygen masks	94
B0019 Fit students with flight helmets	94
F0125 Instruct or evaluate students on parachute landing fall (PLF) platforms	94
C0032 Conduct classroom instruction concerning aircraft pressurization principles and problems	94
C0030 Conduct briefings on swing landing trainer familiarization	88
A0002 Perform crew chief duties during automated hypobaric chamber flights, other than research flights	88
F0124 Instruct or evaluate students on parachute drag training devices	88
F0118 Conduct instruction on use of live-fire ejection seat trainers	88
F0127 Perform canopy assistant duties on parachute familiarization training teams	81
A0005 Perform chamber operator duties during automated hypobaric chamber flights, other than research flights	81
F0120 Conduct instruction on use of spatial disorientation trainers	81
A0004 Perform recorder duties during hypobaric chamber flights, other than research flights	81

TABLE B8
RESEARCH JOB

TASKS	PERCENT MEMBERS PERFORMING (N=10)
G0205	100
G0202	100
G0194	100
G0203	100
G0216	100
G0231	90
G0222	90
B0017	90
G0196	90
A0013	90
G0227	90
G0215	80
G0192	80
A0015	80
A0016	80
K0340	70
G0184	70
G0201	70
G0180	70
G0207	70
G0212	70
A0001	70
G0178	60
G0179	60
G0228	60

TABLE B9
U-2 AIRCRAFT JOB

TASKS	PERCENT MEMBERS PERFORMING (N=29)
D0073 Perform occupied full pressure suit integration tests	100
D0070 Perform high-flight recovery activities	100
D0069 Perform high-flight launch activities, such as preflight, layout, physical, dress, integration, prior to entry, and hookup	97
D0071 Perform low-flight launch activities, such as preflight, pick-up, prior to entry, and hookup	97
D0072 Perform low-flight recovery activities	97
D0062 Inspect or maintain transport vans	97
D0088 Perform preflight physical examinations of pressure suit occupants	93
D0085 Perform preflight or postflight inspections of full pressure suits	90
D0104 Upload or download survival kits or parachutes	86
D0061 Inspect or maintain U-2 survival kits	86
D0060 Inspect or maintain U-2 parachutes	86
D0056 Fill portable liquid oxygen (LOX) ventilation units	86
D0100 Troubleshoot full pressure suits	83
D0064 Maintain or repair full pressure suit assemblies, other than cementing or sewing	79
D0051 Clean pressure suits	76
D0066 Pack pressure suit assemblies or survival equipment for shipment	76
D0089 Remove or replace full pressure suit components	76
D0065 Maintain pressure suit T-blocks and ventilation hose assemblies	72
D0086 Perform preflight or postflight inspections of low-flight oxygen regulators	69
D0102 Troubleshoot pressure suit controllers	66
D0101 Troubleshoot portable LOX ventilation units	66
A0010 Perform inside observer duties during hypobaric chamber flights, other than research flights	66
D0078 Perform periodic inspections of full pressure suits	62
D0067 Perform annual inspections of full pressure suits	62
D0103 Troubleshoot pressure suit oxygen regulators	62

THIS PAGE INTENTIONALLY LEFT BLANK

APPENDIX C

EXPANDED LISTING OF MODULES AND TASK STATEMENTS

THIS PAGE INTENTIONALLY LEFT BLANK

These Task Modules (TMs) were developed in order to organize and summarize the extensive task information of this specialty. The TMs were developed by clustering tasks which are co-performed by the same incumbents. Co-performance is a measure of how probable a task will be performed with another task, based upon the responses of surveyed personnel. For example, if an individual performs one Hypobaric Chamber task, the probability is very high that he or she will perform other Hypobaric Chamber tasks. Thus, the group of Hypobaric Chamber Duty tasks can be considered a "natural group" or associated or related tasks (see TM 0001 below). The statistical clustering generally approximates these "natural groupings."

The title of each TM is a best estimate as to the generic subject content 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 HYPOBARIC CHAMBER FLIGHTS

- 1 A0003 Perform crew chief duties during manual hypobaric chamber flights, OTRF
- 2 A0004 Perform recorder duties during hypobaric chamber flights, OTRF
- 3 A0006 Perform chamber operator duties during manual hypobaric chamber flights, OTRF
- 4 A0010 Perform inside observer duties during hypobaric chamber flights, OTRF
- 5 A0012 Perform lock operator duties during hypobaric chamber flights, OTRF
- 6 B0017 Clean flight helmets or oxygen masks
- 7 B0019 Fit students with flight helmets
- 8 B0020 Fit students with oxygen masks
- 9 C0029 Conduct briefings on rapid decompression

0002 EQUIPMENT CLASSROOM INSTRUCTION

- 1 A0011 Perform lecturer observer duties during hypobaric chamber flights, OTRF
- 2 C0032 Conduct classroom instruction concerning aircraft pressurization principles and problems
- 3 C0034 Conduct classroom instruction concerning survival principles and procedures
- 4 C0037 Conduct classroom instruction concerning ground egress escape procedures
- 5 C0040 Conduct classroom instruction concerning in-flight egress escape procedures
- 6 C0042 Conduct classroom instruction concerning night vision principles and problems
- 7 C0046 Conduct classroom instruction concerning use of oxygen equipment
- 8 K0352 Personalize lesson plans

0003 HYPOBARIC CHAMBER MAINTENANCE

- 1 A0007 Perform daily inspections of hypobaric chamber assemblies
- 2 A0008 Perform general maintenance on hypobaric chambers or subassemblies
- 3 A0009 Perform general maintenance on vacuum pumps
- 4 A0013 Perform oxygen flow checks of A-14 pressure-demand oxygen regulators
- 5 A0015 Perform periodic inspections of hypobaric chamber assemblies
- 6 A0016 Perform special inspections of hypobaric chamber assemblies
- 7 B0018 Construct life support equipment

- 8 B0022 Inspect or maintain life support equipment
- 9 B0023 Schedule inspections or maintenance of life support equipment, OTPS assemblies
- 10 B0024 Store training aids or life support equipment

0004 SUPPLY

- 1 M0383 Evaluate serviceability of equipment, tools, parts, or supplies
- 2 M0384 Identify and report equipment or supply problems
- 3 M0385 Initiate requisitions for equipment, tools, parts, or supplies
- 4 M0386 Inventory equipment, tools, parts, or supplies
- 5 M0387 Issue or log turn-ins of equipment, tools, parts, or supplies
- 6 M0388 Maintain benchstock of spare parts
- 7 M0389 Maintain organizational equipment or supply records
- 8 M0390 Pick up or deliver equipment, tools, parts, or supplies
- 9 M0391 Prepare documentation on items for shipment, including hazardous goods
- 10 M0392 Prepare or maintain documentation on items requiring inspection or calibration

0005 OJT

- 1 K0341 Conduct on-the-job training (OJT)
- 2 K0342 Counsel trainees on training progress
- 3 K0343 Determine training requirements
- 4 L0371 Maintain OJT training records or files

0006 SUPERVISORY

- 1 J0288 Assign personnel to work areas or duty positions
- 2 J0291 Conduct self-inspections or self-assessments
- 3 J0292 Conduct general meetings, such as staff meetings, briefings, conferences, or workshops
- 4 J0295 Conduct supervisory orientations for newly assigned personnel
- 5 J0296 Conduct supervisory performance feedback sessions
- 6 J0297 Counsel subordinates concerning personal matters
- 7 J0298 Determine or establish logistics requirements, such as personnel, equipment, tools, parts, supplies, or workspace
- 8 J0299 Determine or establish work assignments or priorities
- 9 J0301 Develop or establish work methods or procedures
- 10 J0302 Develop or establish work schedules
- 11 J0309 Establish organizational policies, such as operating instructions (OIs) or standard operating procedures (SOPs)
- 12 J0310 Establish performance standards for subordinates
- 13 J0312 Evaluate personnel for compliance with performance standards, other than students
- 14 J0313 Evaluate personnel for promotion, demotion, reclassification, or special awards
- 15 J0314 Evaluate inspection report findings or inspection procedures
- 16 J0319 Initiate actions required due to substandard performance of personnel
- 17 J0320 Initiate personnel action requests
- 18 J0321 Inspect personnel for compliance with military standards
- 19 J0322 Interpret policies, directives, or procedures for subordinates
- 20 J0327 Review drafts of supplements or changes to directives, such as policy directives, instructions, or manuals

- 21 J0329 Schedule personnel for temporary duty (TDY) assignments, leaves, or passes
- 22 J0331 Write job or position descriptions
- 23 J0333 Write or endorse military performance reports
- 24 J0334 Write recommendations for awards or decorations

0007 - MANAGEMENT

- 1 J0290 Assign sponsors for newly assigned personnel
- 2 J0303 Develop organizational or functional charts
- 3 J0305 Develop self-inspection or self-assessment program checklists
- 4 J0308 Draft supplements or changes to directives, such as policy directives, instructions, or manuals
- 5 J0324 Perform standardization and evaluation inspections on use of standardized curriculum

0008 INSTRUCTOR SUPERVISION

- 1 K0338 Brief personnel, other than students, concerning training programs or matters
- 2 K0345 Develop or procure training materials or aids
- 3 K0346 Develop training programs, plans, or procedures
- 4 K0349 Evaluate effectiveness of training programs, plans, or procedures
- 5 K0350 Evaluate training methods or techniques of instructors

0009 PERSONAL CLASSROOM INSTRUCTION

- 1 C0033 Conduct classroom instruction concerning atmospheric characteristics
- 2 C0035 Conduct classroom instruction concerning decompression sickness
- 3 C0036 Conduct classroom instruction concerning gas laws
- 4 C0038 Conduct classroom instruction concerning hyperventilation
- 5 C0039 Conduct classroom instruction concerning hypoxia
- 6 C0041 Conduct classroom instruction concerning mechanical effects of pressure changes
- 7 C0044 Conduct classroom instruction concerning respiration and circulation

0010 INFLIGHT

- 1 E0106 Brief aircrews or parachutists concerning high-altitude hazards
- 2 E0107 Brief aircraft commanders concerning disposition of flight reactors
- 3 E0108 Load, install, or unload HAAMS oxygen systems in aircraft
- 4 E0109 Maintain or recharge HAAMS oxygen systems
- 5 E0110 Monitor exposure times above 10,000 feet
- 6 E0111 Monitor prebreathing times below 10,000 feet
- 7 E0112 Observe aircrew, parachutists, and other aircraft occupants for physiological effects of altitude
- 8 E0113 Pack or palletize HAAMS supplies or equipment
- 9 E0114 Participate in operational support flights
- 10 E0115 Perform preuse inspections on HAAMS equipment
- 11 E0116 Plan or coordinate HAAMS premission, mission, and postmission requirements with appropriate agencies

0011 MOBILITY

- 1 I0278 Load or unload patients on patient transportation vehicles
- 2 I0283 Perform patient carries using hand or litter method
- 3 I0284 Set up or tear down isoshelters
- 4 I0285 Set up or tear down tents
- 5 I0286 Transfer litter patients

0012 MEDICAL READINESS

- 1 I0267 Initiate treatment for fractures
- 2 I0268 Initiate treatment for injuries from chemical agents
- 3 I0269 Initiate treatment for patients in shock
- 4 I0271 Initiate treatment for thermal injuries or heat disorders
- 5 I0272 Initiate treatment for closed wounds
- 6 I0273 Initiate treatment for first-degree burns
- 7 I0274 Initiate treatment for open wounds
- 8 I0275 Initiate treatment for second-degree burns
- 9 I0276 Initiate treatment for third-degree burns
- 10 I0277 Irrigate wounds
- 11 I0282 Perform immediate medical casualty care, such as basic cardiac life support

0013 EJECTION TRAINING

- 1 C0025 Administer fighter aircrew conditioning tests (FACTs)
- 2 C0027 Brief use of ejection seat trainers
- 3 C0030 Conduct briefings on swing landing trainer familiarization
- 4 C0047 Conduct training on air or ground egress procedural trainers
- 5 C0048 Evaluate student performance on use of survival signaling devices
- 6 F0117 Conduct instruction on use of in-flight or ground procedural trainers
- 7 F0118 Conduct instruction on use of live-fire ejection seat trainers
- 8 F0121 Evaluate student performance during live-fire ejection seat training
- 9 F0122 Evaluate student performance on use of air egress trainers
- 10 F0123 Evaluate student performance on use of ground procedural trainers
- 11 F0124 Instruct or evaluate students on parachute drag training devices
- 12 F0125 Instruct or evaluate students on parachute landing fall (PLF) platforms
- 13 F0126 Instruct or evaluate students during descent and landing training, including hanging harness and personal lowering devices
- 14 F0127 Perform canopy assistant duties on parachute familiarization training teams
- 15 F0128 Perform chase driver duties on parachute familiarization training teams
- 16 F0130 Perform crew chief duties on parachute familiarization training teams
- 17 F0144 Perform hookup crewmember duties on swing landing trainers
- 18 F0147 Perform instructor parasail demonstrations for tow-up tow-down and release procedures
- 19 F0148 Perform instructor rope duties on swing landing trainers
- 20 F0152 Perform landing zone assistant duties on parachute familiarization training teams
- 21 F0157 Perform parachute landing falls
- 22 F0161 Perform parasail recorder duties
- 23 F0167 Perform release operator duties on parachute familiarization training teams

0014 HYPERBARIC CHAMBER DUTIES

- 1 H0239 Perform crew chief duties during hyperbaric chamber dives
- 2 H0240 Perform inside observer duties during hyperbaric chamber dives
- 3 H0241 Perform lock operator duties during hyperbaric chamber dives
- 4 H0243 Perform recorder duties during hyperbaric chamber dives
- 5 H0244 Perform timekeeper duties during hyperbaric chamber dives
- 6 H0245 Perform chamber operator duties during hyperbaric chamber dives

0015 RESEARCH CHAMBER DUTIES

- 1 G0194 Perform crew chief duties during research chamber flights
- 2 G0202 Perform inside observer duties during research chamber flights
- 3 G0203 Perform lock operator duties during research chamber flights
- 4 G0205 Perform outside observer duties during research chamber flights
- 5 G0216 Perform recorder duties during research chamber flights
- 6 G0222 Record experimental data

0016 U-2 AIRCRAFT DUTIES

- 1 D0056 Fill portable liquid oxygen (LOX) ventilation units
- 2 D0060 Inspect or maintain U-2 parachutes
- 3 D0061 Inspect or maintain U-2 survival kits
- 4 D0062 Inspect or maintain transport vans
- 5 D0069 Perform high-flight launch activities, such as preflight, layout, physical, dress, integration, prior to entry, and hookup
- 6 D0070 Perform high-flight recovery activities
- 7 D0071 Perform low-flight launch activities, such as preflight, pick-up, prior to entry, and hookup
- 8 D0072 Perform low-flight recovery activities
- 9 D0073 Perform occupied full pressure suit integration tests
- 10 D0085 Perform preflight or postflight inspections of full pressure suits
- 11 D0104 Upload or download survival kits or parachutes

0017 PRESSURE SUIT MAINTENANCE

- 1 D0051 Clean pressure suits
- 2 D0066 Pack pressure suit assemblies or survival equipment for shipment
- 3 D0067 Perform annual inspections of full pressure suits
- 4 D0074 Perform overhaul inspections of full pressure suits
- 5 D0078 Perform periodic inspections of full pressure suits

0018 LOX

- 1 D0068 Perform daily inspections of LOX storage carts
- 2 D0101 Troubleshoot portable LOX ventilation units
- 3 D0102 Troubleshoot pressure suit controllers
- 4 D0103 Troubleshoot pressure suit oxygen regulators

0019 PRESSURE SUIT COMPONENT MAINTENANCE

- 1 D0050 Cement pressure suit assemblies
- 2 D0063 Maintain or calibrate pressure suit test equipment
- 3 D0065 Maintain pressure suit T-blocks and ventilation hose assemblies
- 4 D0090 Remove or replace low-flight oxygen equipment components
- 5 D0091 Remove or replace portable LOX ventilation unit components
- 6 D0094 Remove or replace pressure suit ventilation hose assembly components

0020 CHEMICAL WARFARE

- 1 I0264 Don or doff chemical warfare personal protective clothing
- 2 I0266 Identify chemical warfare agents
- 3 I0281 Perform chemical warfare decontamination procedures

0021 TRAINER MAINTENANCE

- 1 G0197 Perform daily inspections of hyperbaric chamber fire suppression systems
- 2 G0208 Perform periodic inspections of hyperbaric chamber fire suppression systems
- 3 G0218 Perform special inspections of hyperbaric chamber fire suppression systems
- 4 H0247 Perform daily inspections of low-pressure compressors
- 5 H0248 Perform general maintenance on hyperbaric chamber assemblies
- 6 H0250 Perform periodic inspections of hyperbaric chamber assemblies
- 7 H0251 Perform special inspections of hyperbaric chamber assemblies
- 8 H0252 Perform weekly inspections of low-pressure compressors

0022 HYPERBARIC CHAMBER MAINTENANCE

- 1 F0129 Perform crew chief duties on centrifuge training teams
- 2 F0153 Perform lecturer duties on centrifuge training teams
- 3 F0156 Perform operator duties on centrifuge training teams
- 4 G0178 Conduct pre-centrifuge ride briefings
- 5 G0179 Connect or disconnect centrifuges to personal equipment
- 6 G0184 Maintain centrifuge test records
- 7 G0191 Perform central observer duties during centrifuge operations
- 8 G0193 Perform crew chief duties during centrifuge operations
- 9 G0195 Perform daily inspections of centrifuges
- 10 G0204 Perform operator duties during centrifuge operations
- 11 G0214 Perform prerun or postrun inspections of centrifuges
- 12 G0215 Perform recorder duties during centrifuge operations
- 13 G0228 Schedule centrifuge operations
- 14 G0229 Set centrifuge seat configurations
- 15 G0230 Size and fit antigravity protective equipment

0023 CENTRIFUGE DUTIES

- 1 F0131 Perform daily inspections of air egress procedural trainers
- 2 F0132 Perform daily inspections of ground egress procedural trainers
- 3 F0133 Perform daily inspections of live-fire ejection seat trainers
- 4 F0134 Perform daily inspections of night vision trainers

- 5 F0135 Perform daily inspections of parachute familiarization training equipment
- 6 F0136 Perform daily inspections of parasail communications equipment
- 7 F0137 Perform daily inspections of spatial disorientation trainers
- 8 F0138 Perform daily inspections of swing landing trainers
- 9 F0139 Perform daily inspections of vertigons
- 10 F0141 Perform general maintenance on live-fire ejection seat trainers
- 11 F0142 Perform general maintenance on parachute familiarization training equipment
- 12 F0143 Perform general maintenance on parasail equipment
- 13 F0162 Perform periodic inspections of live-fire ejection seat trainers
- 14 F0163 Perform periodic inspections of night vision trainers
- 15 F0164 Perform periodic inspections of parachute familiarization training equipment
- 16 F0165 Perform periodic inspections of spatial disorientation trainers
- 17 F0166 Perform periodic inspections of vertigons
- 18 F0168 Perform special inspections of live-fire ejection seat trainers
- 19 F0169 Perform special inspections of night vision trainers
- 20 F0172 Remove or replace air egress procedural trainer components
- 21 F0173 Remove or replace cockpit trainer components
- 22 F0174 Remove or replace ground egress procedural trainer components
- 23 F0175 Remove or replace spatial disorientation trainer components

THIS PAGE INTENTIONALLY LEFT BLANK