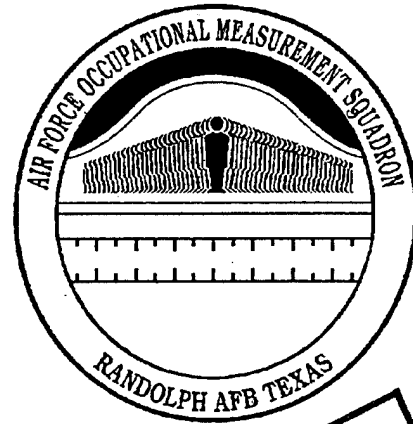
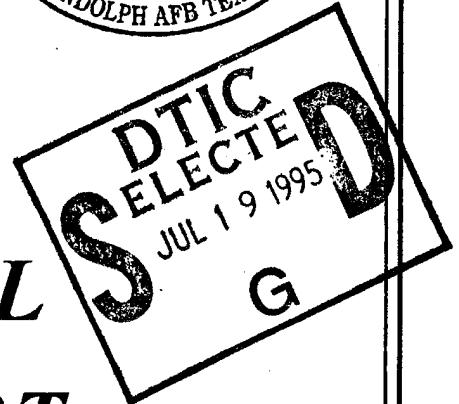




**UNITED STATES
AIR FORCE**



OCCUPATIONAL SURVEY REPORT



**FLIGHT ENGINEER
(PERFORMANCE QUALIFIED)**

AFSC 1A1X1C

AFPT 90-113-015

MAY 1995

19950718 000

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

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PREFACE

This report presents the results of an Air Force Occupational Survey of the Flight Engineer (Performance Qualified) career ladder, Air Force Specialty Code (AFSC) 1A1X1C. 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 1Lt Shannen M. Karpel, Inventory Development Specialist, with computer programming support furnished by Mr. Wayne Fruge. Ms. Raquel A. Soliz provided administrative support. Mr. Robert L. Alton, Occupational Analyst, analyzed the data and wrote the final report. This report has been reviewed and approved by Major Randall C. Agee, Chief, Airman Analysis Section, Occupational Analysis Flight, Air Force Occupational Measurement Squadron (AFOMS).

Copies of this report are distributed to Air Staff sections, major commands, and other interested training and management personnel. Additional copies are available upon request to AFOMS, Attention: Chief, Occupational Analysis Flight (OMY), 1550 5th Street East, Randolph Air Force Base, Texas 78150-4449 (DSN 487-6623).

RICHARD C. OURAND, Jr., Lt Col, USAF
Commander
Air Force Occupational Measurement
Squadron

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

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SUMMARY OF RESULTS

1. Survey Coverage: The Flight Engineer (Performance Qualified) career ladder was surveyed to provide current job and task data. Survey results are based on responses from 1,072 members (55 percent of the total assigned personnel selected for survey). The sample satisfactorily represents the career ladder population.
2. Specialty Jobs: Nine jobs were identified in the career ladder structure analysis. Eight of the jobs were almost totally oriented toward technical task performance, and were identified according to the aircraft on which incumbents held a current qualification rating. The remaining job was primarily supervisory in nature. Survey data indicate personnel are performing jobs as envisioned in the current classification structure, with most sample respondents performing the vast majority of job inventory tasks in common.
3. Career Ladder Progression: Skill-level progression for members of this AFSC is not typical of most career ladders. All skill level groups responded in like numbers to most of the technical tasks in the job inventory. While still performing primarily a technical job, the DAFSC 1A190 and CEM Code 1A100 groups do report the highest amount of relative duty time spent on tasks pertaining to supervision, management, and training.
4. Special Analysis (DAFSC Prefixes): Review of the data grouped by DAFSC prefixes (*X - Aircrew; K - Aircrew Instructor; and Q - Aircrew Standardization/Flight Examiner*) clearly shows that members holding any of the three prefixes perform a vast majority of the JI tasks in common. The primary difference in task performance occurs in some supervisory, managerial, and training activities.
5. AFMAN 36-2108 Specialty Description: The description accurately describes the technical and supervisory aspects of jobs at the various levels.
6. Training Analysis: The Specialty Training Standard (STS) and the Basic Flight Engineer (BFE) Course Objective Hierarchy Index are supported by survey data. Some minor questions regarding the STS require consideration.
7. Implications: Survey results indicate that the present classification structure is supported by survey data. Career ladder training documents are well supported by survey data and the overall training system is perceived to be working well based on career ladder member responses.

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**OCCUPATIONAL SURVEY REPORT (OSR)
FLIGHT ENGINEER (PERFORMANCE QUALIFIED) CAREER LADDER
(AFSC 1A1X1C)**

INTRODUCTION

This is a report of an occupational survey of the Flight Engineer (Performance Qualified) career ladder completed by the Air Force Occupational Measurement Squadron (AFOMS). These data will be utilized to evaluate the AFMAN 36-2108 *Specialty Description* and training documents. The last survey results pertaining to this career ladder were published in November 1988.

Background

As described in the AFMAN 36-2108 *Specialty Description*, dated October 1994, personnel in this career ladder are responsible for performing aircraft inspections; operating and monitoring aircraft and engine systems controls, panels, indicators and devices; computing aircraft performance data; and performing in-flight duties per flight manual checklists.

This is a lateral-entry career ladder. Acceptance into this specialty requires prior qualification at the 5- or 7-skill level in In-Flight Refueling, Aircraft Loadmaster, Missile and Space System Maintenance, Tactical Aircraft Maintenance, Manned Aerospace Maintenance, or Aerospace Maintenance career ladders. Once accepted, personnel must complete the 7-week 2-day BFE-Basic Flight Engineer Course at Altus AFB, OK. Instruction covers general topics such as, ground instruction on aerodynamic factors of aircraft performance; calculator operation and computations; prediction of takeoff and landing data; cruise range and fuel consumption data; performance limitations; mission planning and adjustments; and computations of aircraft weight and balance. More detailed aircraft-specific training is accomplished during follow-on qualification training at various bases, depending on the student's aircraft assignment. Entry into the career ladder currently requires an Armed Services Vocational Aptitude Battery (ASVAB) General score of 55.

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SURVEY METHODOLOGY

Inventory Development

The data collection instrument for this occupational survey was USAF Job Inventory (JI) Air Force Personnel Test (AFPT) 90-113-015, dated June 1993. 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 technical training location and at the following installations:

BASE	REASON FOR VISIT
Altus AFB OK	Initial BFE training; C-5 and C-141 aircraft
Little Rock AFB AR	C-130 aircraft training
Barksdale AFB LA	KC-10 aircraft; SMEs with background on other aircraft
Travis AFB CA	C-5 and C-141 operational units

The resulting JI contains a comprehensive listing of 895 tasks grouped under 22 duty headings and a background section requesting such information as grade, duty title, organizational level, aircraft for which respondents hold a current qualification rating, and aircraft for which they previously held qualification ratings.

Survey Administration

From August 1993 through May 1994, Military Personnel Flights at operational units worldwide administered the inventory to eligible AFSC 1A1X1C personnel. Job incumbents were selected from a computer-generated mailing list obtained from personnel data tapes maintained by the Air Force Military 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 (MAJCOM) and military pay grade groups. All eligible AFSC 1A1X1C personnel were mailed survey booklets. Table 1 reflects the percentage distribution, by MAJCOM, of assigned AFSC 1A1X1C personnel as of June 1994. The 1,072 respondents in the final sample represent 50 percent of the total assigned personnel and 55 percent of the total personnel surveyed. Table 2 reflects the paygrade distribution for these AFSC 1A1X1C personnel. The survey sample is considered to be a satisfactory representation of the career ladder population.

While the overall sample is satisfactory, the variances in the percentages of assigned personnel versus the percentages of personnel in the sample pertaining to AMC and ACC were affected by the MAJCOM restructuring that took place while the survey booklets were in the field, and were not as close as the match we normally achieve. To assure that the survey sample properly represented the career ladder, we reviewed the respondents' replies to the question regarding current aircraft qualification. The responses indicated sample personnel also properly represent the distribution of aircraft pertinent to this career ladder. This additional review clearly indicated the survey sample satisfactorily represents the career ladder population.

Task Factor Administration

While most participants in the survey process completed a USAF JI, selected senior DAFSC 1A1X1C personnel were also asked to complete booklets rendering judgments on task training emphasis (TE) or task difficulty (TD). The TE and TD booklets were processed separately from the job inventories. The information gained from these task factor data is used in various analyses and is a valuable part of the training decision process.

Training Emphasis (TE). Individuals completing TE booklets were asked to rate tasks on a 10-point scale (from no training required to extremely high amount of training required). Training emphasis is a rating of which tasks require structured training for first-assignment personnel. Structured training is defined as training provided at resident technical schools, field training detachments, mobile training teams, formal OJT, or any other organized training method. TE data were independently collected from 33 experienced 7- or 9-skill level personnel stationed worldwide. The interrater reliability for these raters was acceptable, indicating there was satisfactory agreement among raters as to which tasks required some form of structured training

TABLE 1

COMMAND DISTRIBUTION OF 1A1X1C PERSONNEL

<u>COMMAND</u>	<u>PERCENT OF ASSIGNED*</u>	<u>PERCENT OF SAMPLE</u>
AMC	55	62
ACC	24	17
AFSOC	7	4
AETC	5	7
AFMC	4	4
PACAF	3	4
USAFE	1	2
OTHER	<u>1</u>	<u>0</u>
TOTAL	100	100

TOTAL ASSIGNED* = 2,151

TOTAL SURVEYED** = 1,956

TOTAL IN SURVEY SAMPLE = 1,072

PERCENT OF ASSIGNED IN SAMPLE = 50%

PERCENT OF SURVEYED IN SAMPLE = 55%

* Assigned strength as of June 1994

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

TABLE 2

PAYGRADE DISTRIBUTION OF SURVEY SAMPLE

<u>GRADE</u>	<u>PERCENT OF ASSIGNED*</u>	<u>PERCENT OF SAMPLE</u>
E-4	18	18
E-5	27	25
E-6	23	26
E-7	25	26
E-8	5	4
E-9	2	1

* Assigned strength as of June 1994

and which did not. In this specialty, tasks have an average TE rating of 2.63 and a standard deviation of 1.84; tasks considered high in training emphasis have ratings of 4.47 and above. TE rating data may be used to rank order tasks indicating those tasks which senior noncommissioned officers (NCOs) in the field consider the most important for first-assignment personnel to know.

Task Difficulty (TD). Each individual completing a TD booklet was asked to rate all of the tasks on a 9-point scale (from extremely low to extremely high) as to the relative difficulty of each task in the inventory. Difficulty is defined as the length of time required by the average incumbent to learn to do the task. Task difficulty data were independently collected from 35 senior 7- or 9-skill level personnel stationed worldwide. Interrater reliability was determined to be acceptable, which reflects a satisfactory agreement among raters. Ratings were standardized so tasks have an average difficulty of 5.00, with a standard deviation of 1.00. The resulting data yield essentially a rank ordering of tasks indicating the degree of difficulty for each task in the inventory.

When used in conjunction with the primary criterion of percent members performing, TE and TD ratings can provide insight into first-assignment personnel training requirements. Such insights may suggest a need for lengthening or shortening portions of instruction supporting entry-level jobs.

SPECIALTY JOBS

(Career Ladder Structure)

A USAF Occupational Analysis begins with an examination of the career ladder structure. The structure of jobs within the Flight Engineer (Performance Qualified) career ladder was examined on the basis of similarity of tasks performed and the percent of time spent ratings provided by job incumbents, independent of other specialty background factors.

Each individual in the sample performs a set of tasks called a job. For the purpose of organizing individual jobs into similar units of work, an automated job clustering program is used. This hierarchical grouping program is a basic part of the Comprehensive Occupational Data Analysis Program (CODAP) system for job analysis. Each individual job description (all the tasks performed by that individual and the relative amount of time spent on those tasks) in the sample is compared to every other job description in terms of tasks performed and the relative amount of time spent on each task in the JI. The automated system is designed to locate the two job descriptions with the most similar tasks and percent time ratings and combine them to form a composite job description. In successive stages, new members are added to initial groups, or new groups are formed based on the similarity of tasks performed and similar time ratings in the individual job descriptions.

A unique situation was discovered when the procedure described above was applied to the AFSC 1A1X1C sample. With the exception of the SUPERVISORY FLIGHT ENGINEERS job, each group identified via the program was aircraft-oriented and differed, primarily, on the number of tasks performed and the time spent on those tasks. After a close review and comparison of these various aircraft-oriented groups, it was evident that the groups were quite similar. It was determined that the best method of displaying "jobs" and other useful data for the Flight Engineers was simply to subset the sample by current aircraft qualification (as indicated by each respondent) and discuss each of the groups as a "job". The one variance mentioned above was left intact and will be discussed as to how it differs from the other groups. This job structure information can be used to evaluate the accuracy of career ladder documents [AFMAN 36-2108 *Specialty Description*, Career Field Education and Training Plans (CFETP), and Specialty Training Standards (STS)] and to gain a better understanding of current utilization patterns. The above terminology will be used in the discussion of the AFSC 1A1X1C career ladder structure.

Overview of Specialty Jobs

The analysis procedure described above identified nine jobs within the survey sample. The division of jobs performed by DAFSC 1A1X1C personnel is illustrated in Figure 1, and a listing of those jobs is provided below. The group (GP) or stage (ST) number shown beside each title is a reference to computer-printed information; the number of personnel in each group or stage (N) is also shown.

AFSC 1A1X1C SPECIALTY JOBS

(N=1,072)

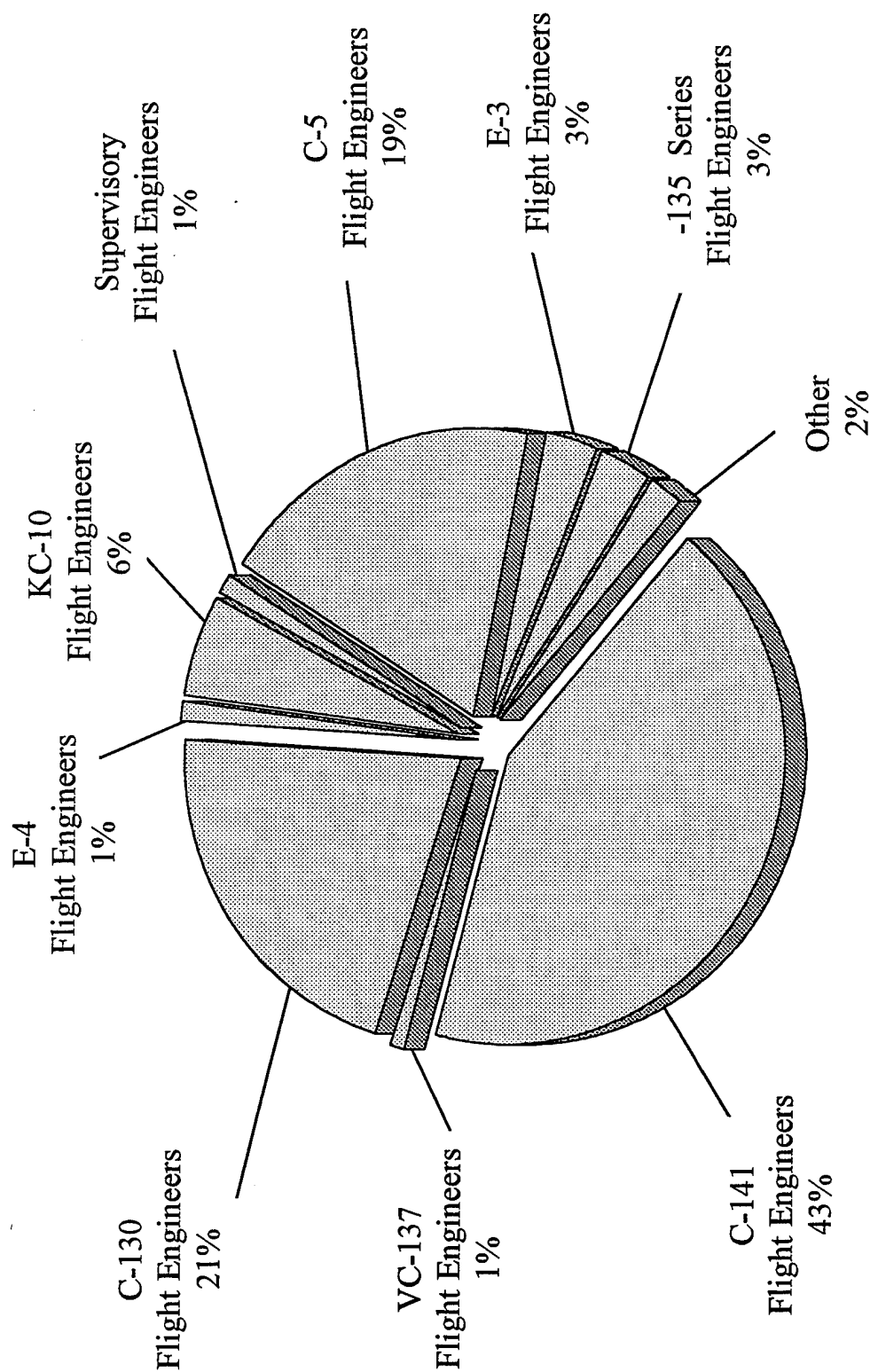


FIGURE 1

- I. C-141 FLIGHT ENGINEERS (GP0040, N=465)
- II. C-5 FLIGHT ENGINEERS (GP0038, N=202)
- III. KC-10 FLIGHT ENGINEERS (GP0045, N=60)
- IV. -135 SERIES FLIGHT ENGINEERS (GP0046, N=30)
- V. E-3 FLIGHT ENGINEERS (GP0036, N=28)
- VI. E-4 FLIGHT ENGINEERS (GP0037, N=9)
- VII. VC-137 FLIGHT ENGINEERS (GP0044, N=15)
- VIII. C-130 FLIGHT ENGINEERS (GP0039, N=229)
- IX. SUPERVISORY FLIGHT ENGINEERS (ST0003, N=7)

The respondents forming these groups or stage account for 98 percent of the survey sample. The remaining 2 percent, for one reason or another, did not identify a current aircraft qualification, thus were not included within one of the aircraft "jobs". Job titles given by respondents which were representative of these personnel include Reserve Forces Advisor, Research Flight Engineer, and NCOIC, Training Flight.

Group Descriptions

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

Another way to illustrate these jobs is to summarize tasks performed into groups of tasks identified as task modules (TMs). This allows for a very concise display of where job incumbents spend most of their time and thus develops a comprehensive overview of each job. The display shows the number of tasks included in a module, the percent time spent performing tasks in that module, and the average percentage of job group members performing each task in the module. These modules were identified through CODAP copformance clustering, which presents the average probability that if you perform one task you also perform a second task or a group of related tasks. The probabilities are calculated based on the actual copformance of tasks by respondents in this survey sample. Representative TMs are listed as part of the job description. The list of modules with respective tasks is presented in Appendix B.

TABLE 3

RELATIVE PERCENT TIME SPENT ON DUTIES BY SPECIALTY JOBS

DUTIES	C-141 FLIGHT ENGINEERS (N=465)	C-5 FLIGHT ENGINEERS (N=202)	KC-10 FLIGHT ENGINEERS (N=60)	-135 SERIES FLIGHT ENGINEERS (N=30)	E-3 FLIGHT ENGINEERS (N=28)
A ORGANIZING AND PLANNING	1	1	1	1	*
B DIRECTING AND IMPLEMENTING	3	2	3	4	2
C INSPECTING AND EVALUATING	1	1	1	1	*
D TRAINING	2	2	2	2	1
E PERFORMING ADMINISTRATIVE ACTIVITIES	2	2	3	2	1
F PERFORMING GENERAL AIRCREW ACTIVITIES	12	10	10	15	15
G PERFORMING GENERAL MAINTENANCE ACTIVITIES	4	3	2	3	2
H PERFORMING MISSION PLANNING AND PERFORMANCE DATA COMPUTATIONS	4	3	5	4	6
I PERFORMING AUXILIARY SYSTEM ACTIVITIES	3	2	*	2	1
J PERFORMING AUXILIARY POWER UNIT (APU) AND GAS TURBINE COMPRESSOR (GTC) SYSTEM ACTIVITIES	7	8	7	1	6
K PERFORMING COMMUNICATION AND NAVIGATION SYSTEM ACTIVITIES	7	6	10	7	4
L PERFORMING ELECTRICAL AND INSTRUMENT SYSTEM ACTIVITIES	7	7	8	9	8
M PERFORMING ENVIRONMENTAL SYSTEM ACTIVITIES	15	15	13	12	19
N PERFORMING FLIGHT CONTROL SYSTEM ACTIVITIES	4	3	3	5	3
O PERFORMING FUEL SYSTEM ACTIVITIES	6	7	7	5	7
P PERFORMING LANDING GEAR (LDG) AND BRAKE SYSTEM ACTIVITIES	6	8	6	6	5
Q PERFORMING MALFUNCTION DETECTION ANALYSIS AND RECORDING SUBSYSTEM (MADARS) ACTIVITIES	0	4	0	0	0
R PERFORMING PNEUDRAULIC OR HYDRAULIC SYSTEM ACTIVITIES	2	3	2	3	3
S PERFORMING POWER PLANT SYSTEM ACTIVITIES	9	8	11	12	9
T PERFORMING PROPELLER SYSTEM ACTIVITIES	0	0	0	0	0
U PERFORMING SPECIAL MISSION ACTIVITIES	*	*	0	*	0
V PERFORMING EMERGENCY PROCEDURE FUNCTIONS	5	5	6	6	8

* Denotes less than .5 percent

TABLE 3 (CONTINUED)
RELATIVE PERCENT TIME SPENT ON DUTIES BY SPECIALTY JOBS

DUTIES	E-4 FLIGHT ENGINEERS (N=9)	VC-137 FLIGHT ENGINEERS (N=15)	C-130 FLIGHT ENGINEERS (N=229)	SUPERVISORY FLIGHT ENGINEERS (N=7)
A ORGANIZING AND PLANNING	2	1	1	12
B DIRECTING AND IMPLEMENTING	3	3	3	29
C INSPECTING AND EVALUATING	2	2	1	10
D TRAINING	3	2	2	22
E PERFORMING ADMINISTRATIVE ACTIVITIES	2	2	2	8
F PERFORMING GENERAL AIRCREW ACTIVITIES	10	10	10	19
G PERFORMING GENERAL MAINTENANCE ACTIVITIES	1	4	3	*
H PERFORMING MISSION PLANNING AND PERFORMANCE DATA COMPUTATIONS	4	4	3	*
I PERFORMING AUXILIARY SYSTEM ACTIVITIES	1	1	3	0
J PERFORMING AUXILIARY POWER UNIT (APU) AND GAS TURBINE COMPRESSOR (GTC) SYSTEM ACTIVITIES	9	6	8	0
K PERFORMING COMMUNICATION AND NAVIGATION SYSTEM ACTIVITIES	6	5	3	0
L PERFORMING ELECTRICAL AND INSTRUMENT SYSTEM ACTIVITIES	7	7	10	0
M PERFORMING ENVIRONMENTAL SYSTEM ACTIVITIES	15	15	15	0
N PERFORMING FLIGHT CONTROL SYSTEM ACTIVITIES	3	4	3	0
O PERFORMING FUEL SYSTEM ACTIVITIES	7	6	4	0
P PERFORMING LANDING GEAR (LDG) AND BRAKE SYSTEM ACTIVITIES	6	7	5	0
Q PERFORMING MALFUNCTION DETECTION ANALYSIS AND RECORDING SUBSYSTEM (MADARS) ACTIVITIES	0	0	0	0
R PERFORMING PNEUDRAULIC OR HYDRAULIC SYSTEM ACTIVITIES	2	2	2	0
S PERFORMING POWER PLANT SYSTEM ACTIVITIES	12	13	12	0
T PERFORMING PROPELLER SYSTEM ACTIVITIES	0	0	5	0
U PERFORMING SPECIAL MISSION ACTIVITIES	*	*	1	0
V PERFORMING EMERGENCY PROCEDURE FUNCTIONS	5	6	4	0

* Denotes less than .5 percent

TABLE 4

SELECTED BACKGROUND DATA FOR SPECIALTY JOBS

	C-141 <u>FLT ENGRS</u>	C-5 <u>FLT ENGRS</u>	KC-10 <u>FLT ENGRS</u>	-135 SERIES <u>FLT ENGRS</u>	E-3 <u>FLT ENGRS</u>
NUMBER IN GROUP	465	202	60	30	28
PERCENT OF SAMPLE	43%	19%	6%	3%	3%
PERCENT IN CONUS	99%	100%	100%	83%	86%
DAFSC DISTRIBUTION:					
1A151C	31%	30%	18%	13%	43%
1A171C	59%	59%	67%	83%	50%
1A190	8%	10%	10%	4%	7%
1A100	2%	1%	5%	0%	0%
PREDOMINANT GRADE(S)	E-5/E-6	E-7/E-6	E-6/E-7/E-5	E-7/E-6	E-4/E-5
AVERAGE MONTHS IN CAREER FIELD	93	79	136	120	73
AVERAGE MONTHS IN SERVICE	158	167	195	185	149
PERCENT IN FIRST ASSIGNMENT (1-48 MOS TICF)	30%	39%	0%	3%	40%
PERCENT SUPERVISING	46%	41	22%	30%	7%
AVERAGE NUMBER OF TASKS PERFORMED	361	402	306	302	263

TABLE 4 (CONTINUED)

SELECTED BACKGROUND DATA FOR SPECIALTY JOBS

	E-4 ELT ENGRS	VC-137 ELT ENGRS	C-130 ELT ENGRS	SUPVRY ELT ENGRS
NUMBER IN GROUP	9	15	229	7
PERCENT OF SAMPLE	1%	1%	21%	1%
PERCENT IN CONUS	100%	100%	74%	86%
DAFSC DISTRIBUTION:				
1A151C	11%	0%	40%	0%
1A171C	56%	47%	51%	86%
1A190	33%	53%	7%	0%
1A100	0%	0%	2%	14%
PREDOMINANT GRADE(S)	E-7/E-6	E-7/E-6	E-6/E-5	E-6/E-5
AVERAGE MONTHS IN CAREER FIELD	143	158	93	83
AVERAGE MONTHS IN SERVICE	200	204	166	153
PERCENT IN FIRST ASSIGNMENT (1-48 MOS TICF)	0%	0%	24%	0%
PERCENT SUPERVISING	22%	67%	11%	71%
AVERAGE NUMBER OF TASKS PERFORMED	369	426	367	57

I. C-141 FLIGHT ENGINEERS (GP0040). The 465 airmen forming this group (43 percent of the survey sample and the largest job identified) are responsible for the core work of the career ladder. Their responsibilities (which are common to most of the other aircraft groups as well) include the performance of various inspections; monitoring and controlling the operation of various engine and aircraft systems; computing, interpreting and recording aircraft performance and weight and balance data; and interacting with the pilot when appropriate. The job is highly technical, with 93 percent of their relative job time devoted to the performance of technical, administrative and general aircrew activities. The scope of the work performed by group members is illustrated by the fact they responded to tasks ranging in difficulty from chocking aircraft tires (TD Rating of 1.84) to interpreting wiring or system schematic diagrams (TD Rating of 6.82). Typical of the average 361 tasks performed are:

- performing preflight inspections of aircraft for fluid leakage
- computing climb, cruise, or descent data
- operating APU or GTC electrical systems
- applying external AC or DC power to aircraft
- analyzing instrument system malfunctions
- monitoring oxygen systems
- making entries on airframe usage logs
- monitoring FSAS system operations

Representative TMs for this job include:

TM	Module Title	No. of Tasks	Percent Time Spent	Avg Pct Mbrs Perf
0001	APU/GTC Systems Monitoring	8	2	90
0004	Lighting/Acft Pressurization Sys Monitoring	9	2	84
0006	Emergency Procedures Functions	21	5	82
0014	Environmental Systems Malfunction Analyses	13	3	80
0021	Environmental Systems Operational Checks (I)	13	3	74
0027	APU/GTC Fuel/Oil Systems Operations	12	2	53

The modules display the breadth of the job performed by personnel in this job.

With an average of almost 8 years time in the career field, 93 percent of these airmen report holding the 5-skill or 7-skill level DAFSC and reflect predominant paygrades of E-4 and E-5 (see Table 4).

II. C-5 FLIGHT ENGINEERS (GP0038). Comprising 19 percent of the survey sample, these 202 airmen are similar to the group discussed above, with responsibilities for many of the same engine and aircraft systems operations. They perform many tasks in common with the previous group and the time spent on those tasks is also very comparable (see Table 3). The

basic difference between the two is that the personnel forming this group also perform a series of tasks peculiar to the C-5 aircraft (note Duty Q in Table 3). Distinctive tasks performed include:

- monitoring MADAR operations
- analyzing MADAR malfunctions
- analyzing wing pressurization system malfunctions
- operating wing pressurization systems
- monitoring LDG kneeling systems operations
- operating LDG kneeling systems
- performing preflight inspections on visor systems
- monitoring visor system operations

Representative TMs defining this job are:

TM	Module Title	No. of Tasks	Percent Time Spent	Avg Pct Mbrs Perf
0001	APU/GTC Systems Monitoring	8	2	92
0061	MADAR Systems Analysis (I)	10	2	89
0004	Lighting/Acft Pressurization Sys Monitoring	9	2	88
0062	LDG Castering/Kneeling System Troubleshooting	4	1	78
0063	MADAR Systems Analysis (II)	4	1	76
0060	Wing Pressurization Systems Operations	6	1	75

These modules reflect the scope of the Flight Engineer's job, displaying both the commonly performed tasks and the tasks peculiar to the C-5 aircraft (TMs 0061, 0062, 0063, and 0060).

C-5 Flight Engineers report an average of over 6 years time in the career field. Fifty-nine percent of these airmen hold the 7-skill level DAFSC, and predominant paygrades for the group are E-7 (34 percent) and E-6 (27 percent).

III. KC-10 FLIGHT ENGINEERS (GP0045) The 60 members (6 percent of the survey sample) forming this group are differentiated from the overall sample because of their performance of tasks pertaining to Air Force satellite communications (AFSATCOM) or secure communications systems and the center-gear system. Along with all the many aircraft-common systems monitoring, inspecting, and operating tasks (an average of 306 tasks are performed by group members), differentiating tasks performed include:

- analyzing AFSATCOM or secure communications systems malfunctions
- operating AFSATCOM or secure communications systems equipment
- performing preflight inspections of AFSATCOM or secure communications systems equipment
- programming AFSATCOM or secure communications systems equipment
- analyzing center-gear system malfunctions
- monitoring center-gear system operations
- performing preflight inspections of center-gear systems

One of the more experienced groups identified (they average over 11 years time spent in the career field), 67 percent report a 7-skill level DAFSC and 10 percent indicate holding DAFSC 1A190.

Selected representative TMs include:

TM	Module Title	No. of Tasks	Percent Time Spent	Avg Pct Mbrs Perf
0011	Air Refueling Systems Activities	4	2	86
0068	AFSATCOM Systems Operations	6	2	86
0006	Emergency Procedures Functions	21	6	84
0021	Environmental Systems Operational Checks (I)	13	3	61
0067	Center Gear Systems Operations	5	1	54

These TMs reflect both common and unique activities of KC-10 Flight Engineers.

IV. -135 SERIES FLIGHT ENGINEERS (GP0046). As has been the case with the previously described jobs, the 30 airmen forming this group perform a broad range of tasks common to flight engineers, regardless of aircraft flown (i.e., computing aircraft center-of-gravity; computing climb, cruise, or descent data; and monitoring and operating air conditioning systems). Typical tasks which characterize this job include:

- analyzing cartridge start system malfunctions
- monitoring cartridge start system operations
- troubleshooting cartridge start system malfunctions
- briefing passengers on flight missions
- reviewing passenger manifests
- directing loading or offloading of cargo

TMs representative of the job include:

TM	Module Title	No. of Tasks	Percent Time Spent	Avg Pct Mbrs Perf
0002	LDG Components Preflight Inspection	4	1	91
0005	Mission Planning Computations	6	2	75
0014	Environmental Systems Malfunction Analyses	13	3	68
0058	Passenger Handling	4	1	54
0021	Environmental Systems Operational Checks (I)	13	2	52
0075	Cartridge Start Systems Operations	5	1	51

Both TMs 0058 and 0075 reflect the tasks performed that are variations from the core tasks performed by the vast majority of the sample.

The majority of these airmen (70 percent) report assignment to AFMC or AMC. With 10 years experience in the career field, 83 percent hold the 7-skill level DAFSC and 50 percent indicate the E-7 paygrade.

V. E-3 FLIGHT ENGINEERS (GP0036). The least experienced group in the survey sample (they report an average of just over 6 years in the career field), these 28 incumbents are responsible for most of the usual flight engineer tasks. They are distinguished from the previously described groups due to their performance of tasks pertaining to the rotodome on the E-3 aircraft. They perform an average of only 263 tasks (second smallest average of all the groups identified). Tasks displaying both the common core responsibilities and the unique functions for the group include:

- performing preflight inspections of aircraft panels, locks, or fasteners
- computing takeoff and landing data (TOLD)
- monitoring fuel consumption
- operating hydraulic cooling systems
- performing preflight inspections of liquid cooling systems
- operating rotodome drive mechanisms
- monitoring rotodome drive mechanism system operations

Representative TMs defining this job are:

TM	Module Title	No. of Tasks	Percent Time Spent	Avg Pct Mbrs Perf
0011	Air Refueling Systems Activities	4	2	87
0004	Lighting/Acft Pressurization Sys Monitoring	9	3	81
0005	Mission Planning Computations	6	2	79
0021	Environmental Systems Operational Checks (I)	13	2	54
0074	Rotodome Drive Mechanisms Operations	6	1	52

TM 0074 contains the tasks which characterizes this group.

Distributed across only two major commands (ACC and PACAF), the predominant paygrades reported by these members are E-4 (32 percent) and E-5 (25 percent).

VI. E-4 FLIGHT ENGINEERS (GP0037). Responsibilities for the performance of tasks pertaining to the trailing wire antenna (TWA) drogue system and landing gear (LDG) tilt system differentiate these nine NCOs from the other groups in the sample. These incumbents also perform many core flight engineer tasks in common with the previously discussed jobs. Examples of both common tasks and tasks peculiar to the E-4 aircraft include:

- monitoring trim systems operations
- operating fuel flow or transfer systems
- performing preflight inspections of pressurization systems
- analyzing TWA drogue system malfunctions
- monitoring TWA drogue system operations
- performing preflight inspections of LDG tilt systems
- monitoring LDG tilt system operations
- troubleshooting LDG tilt system malfunctions

Selected representative TMs for this job include:

TM	Module Title	No. of Tasks	Percent Time Spent	Avg Pct Mbrs Perf
0032	Flight Control Systems Monitoring	5	1	89
0014	Environmental Systems Malfunction Analyses	13	3	80
0024	Files and Log Maintenance	4	1	75
0073	LDG Tilt Systems Operations	6	1	65
0076	Trailing Wire Antenna (TWA) Drogue Sys Operations	4	1	53

TMs 0073 and 0076 reflect those tasks which clearly distinguish this job from those previously discussed.

These predominantly 7-skill level personnel report an average of just under 12 years experience in the career field and 77 percent indicate they hold the E-7 or E-6 paygrade (44 percent and 33 percent respectively).

VII. VC-137 FLIGHT ENGINEERS (GP0044). Along with the performance of the broad array of standard tasks expected of most flight engineers, these 15 members also indicate that they perform tasks involving the maintenance of a number of systems on the aircraft. These tasks are more involved than just routine servicing and minor maintenance activities, and expand the range of the job as well (an average of 426 tasks, highest of any group identified). Examples of the most representative maintenance-type tasks common to these respondents include:

- removing or replacing fuel system components
- removing or replacing aircraft wheel assemblies
- removing or replacing oxygen system components
- removing or replacing power plant system components
- performing aircraft ground handling, towing, or parking operations
- removing or replacing electrical system equipment, such as batteries, generator control panels, or TRs
- removing or replacing air-conditioning system components

TMs defining this group are:

TM	Module Title	No. of Tasks	Percent Time Spent	Avg Pct Mbrs Perf
0018	Power Plant Systems Malfunction Analyses	7	2	91
0005	Mission Planning Computations	6	2	88
0014	Environmental Systems Malfunction Analyses	13	2	83
0035	Communication/Navigation Equipment Repair	4	1	65
0066	Environmental Systems Component Replacement	9	1	52

TMs 0035 and 0066 contain those tasks which differentiate this group from those previously discussed.

The respondents in this group are the most experienced of any group identified (over 13 years in the career field). With a predominant grade of E-7 (73 percent), 53 percent report DAFSC 1A190 and 47 percent hold the 7-skill level.

VIII. C-130 FLIGHT ENGINEERS (GP0039). The 229 members forming this group (21 percent of the total sample) are distinguished from the other survey sample jobs because of their performance of tasks peculiar to the C-130 aircraft's turboprop engines and propellers. In conjunction with the many aircraft-common systems monitoring, operating, and inspection tasks (an average of 367 tasks are performed by these respondents), group differentiating tasks include:

- analyzing propeller anti-ice and deice system malfunctions
- performing operational checks of propeller feathering systems
- monitoring propeller electronic governor system operations
- troubleshooting propeller pitchblock system malfunctions
- analyzing temperature datum (TD) system malfunctions
- operating TD systems
- operating power plant oil cooler doors
- performing preflight inspections of external fuel tanks

TMs which characterize this group are:

TM	Module Title	No. of Tasks	Percent Time Spent	Avg Pct Mbrs Perf
0054	Power Plant/Propeller Systems Operations	37	8	81
0053	Air Turbine Motor (ATM) Operations	4	1	77
0013	Cargo Door/Ramp Systems Operations	5	1	73

The above TMs indicate the concentration of activities on tasks in support of the C-130 aircraft.

With an average of almost 8 years time in the career field, 91 percent of these airmen report holding a 5- or 7-skill level DAFSC and 71 percent indicate a paygrade of E-6, E-7, or E-8.

IX. SUPERVISORY FLIGHT ENGINEERS (ST0003). Spending 73 percent of their relative job time performing tasks pertaining to general supervisory, managerial, and training duties, five of these seven NCOs report supervisory responsibilities. An additional 19 percent of their relative job time is committed to tasks involving general aircrew activities. With very limited technical task performance indicated (which clearly distinguishes these personnel from

the previously discussed groups), typical supervisory and managerial-type tasks performed include:

- coordinating maintenance requirements with crew chiefs
- writing EPRs
- scheduling personnel for TDY assignments, leaves, and passes
- supervising Flight Engineer Specialists (AFSC 11350C)
- conducting OJT
- counseling personnel on personal or military-related problems

Representative TMs for this group include:

TM	Module Title	No. of Tasks	Percent	Avg Pct Mbrs Perf
			Time Spent	
0023	Directing and Coordinating	5	10	60
0048	Work Scheduling	6	7	60
0047	First-Line Supervision	7	10	57
0050	Training	22	21	51
0049	Upper Management	11	9	39

These modules clearly depict the supervisory and managerial orientation of the personnel in this job.

Six of these NCOs report holding a 7-skill level DAFSC and indicate an average of almost 7 years experience in the career field

Comparisons of Specialty Jobs

Utilizing the special job-identifying techniques described at the beginning of this section, nine jobs were identified in the career ladder structure analysis. Eight of the jobs were directly involved in performing the full range of duties and responsibilities of flight engineers. The other job, SUPERVISORY FLIGHT ENGINEERS, was distinctive due to the predominance of supervision, management, and training-type tasks performed.

The eight technical jobs were, by definition, aircraft-specific in terms of tasks performed. However, members of each of those jobs also performed a very large number of tasks on various aircraft systems that were common to all the groups. This large core of commonly performed tasks indicates a very homogeneous career ladder and personnel, overall, are performing the jobs as defined in the current classification structure.

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 *Specialty Description* and the STS, reflect what career ladder personnel are actually doing in the field. It should be noted that there are no data for DAFSC 1A131C. When the mailing list was selected for the AFSC, no DAFSC 3-skill level members were identified in the assigned population. Further, when the final sample returns were evaluated, there were no job inventories returned that indicated any members reporting a 3-skill level DAFSC.

The distribution of skill-level groups across the career ladder jobs is displayed in Table 5, while Table 6 offers another perspective by displaying the relative percent time spent on each duty across the skill-level groups. This career field is unusual in that time spent on the typical supervisory, managerial, training, and administrative duties (see Table 6, Duties A, B, C, D, and E) reflects little change at the 7- and 9-skill level DAFSC and CEM Code 1A100. This indicates this is a career ladder with a high level of technical task performance for all personnel up to and including CEM personnel.

Skill-Level Descriptions

DAFSC 1A151C. Representing 31 percent of the survey sample, the 332 airmen in this group perform an average of 317 tasks. Performing a highly technical job, 77 percent of their relative duty time is devoted to tasks pertaining to activities involving the various systems on the aircraft on which they fly. Tasks involving mission planning and performance data computations and general aircrew and maintenance activities account for an additional 20 percent of their duty time. As shown in Table 5, personnel in this group are represented in seven of the nine jobs discussed in the SPECIALTY JOBS section. Table 7 displays representative tasks performed by these airmen. The high level of common tasks performed by these respondents indicates a very homogeneous career ladder.

DAFSC 1A171C. Seven-skill level personnel, representing 58 percent of the survey sample, perform an average of 377 tasks (somewhat higher than 5-skill level DAFSC members). Even though 48 percent of the group report supervisory responsibilities, only 9 percent of their relative job time is spent on tasks in the usual supervisory, managerial, training, and administrative duties (see Table 6, Duties A, B, C, D, and E). This very low supervisory activity is further highlighted by the fact that only 1 percent of the 622 members forming this group are found in the SUPERVISORY FLIGHT ENGINEERS job (see Table 5). While the display of tasks in Table 8

TABLE 5

DISTRIBUTION OF DAFSC GROUP MEMBERS ACROSS SPECIALTY JOBS

SPECIALTY JOBS	DAFSC 1A151C (N=332)		DAFSC 1A171C (N=622)		DAFSC 1A190 (N=99)		CEM CODE 1A100 (N=19)	
	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT
I. C-141 FLIGHT ENGINEERS	43	44	38	37				
II. C-5 FLIGHT ENGINEERS	18	19	20	10				
III. KC-10 FLIGHT ENGINEERS	3	6	6	16				
IV. -135 SERIES FLIGHT ENGINEERS	1	4	1	0				
V. E-3 FLIGHT ENGINEERS	4	2	2	0				
VI. E-4 FLIGHT ENGINEERS	*	1	3	0				
VII. VC-137 FLIGHT ENGINEERS	0	1	8	0				
VIII. C-130 FLIGHT ENGINEERS	28	19	16	32				
IX. SUPERVISORY FLIGHT ENGINEERS	0	1	0	5				
NOT GROUPED	3	3	6	0				

* Less than .5 percent

TABLE 6

RELATIVE PERCENT TIME SPENT ON DUTIES BY DAFSC GROUPS

DUTIES	DAFSC 1A151C (N=332)	DAFSC 1A171C (N=622)	DAFSC 1A190 (N=99)	CEM CODE 1A100 (N=19)
A ORGANIZING AND PLANNING	*	1	2	3
B DIRECTING AND IMPLEMENTING	1	3	5	5
C INSPECTING AND EVALUATING	*	1	3	5
D TRAINING	*	2	3	3
E PERFORMING ADMINISTRATIVE ACTIVITIES	2	2	2	3
F PERFORMING GENERAL AIRCREW ACTIVITIES	12	11	10	8
G PERFORMING GENERAL MAINTENANCE ACTIVITIES	4	3	3	3
H PERFORMING MISSION PLANNING AND PERFORMANCE DATA COMPUTATIONS	4	4	4	3
I PERFORMING AUXILIARY SYSTEM ACTIVITIES	3	3	3	2
J PERFORMING AUXILIARY POWER UNIT (APU) AND GAS TURBINE COMPRESSOR (GTC) SYSTEM ACTIVITIES	8	6	6	6
K PERFORMING COMMUNICATION AND NAVIGATION SYSTEM ACTIVITIES	5	6	6	5
L PERFORMING ELECTRICAL AND INSTRUMENT SYSTEM ACTIVITIES	8	7	7	6
M PERFORMING ENVIRONMENTAL SYSTEM ACTIVITIES	15	15	13	13
N PERFORMING FLIGHT CONTROL SYSTEM ACTIVITIES	4	4	4	4
O PERFORMING FUEL SYSTEM ACTIVITIES	6	6	6	5
P PERFORMING LANDING GEAR (LDG) AND BRAKE SYSTEM ACTIVITIES	6	6	6	6
Q PERFORMING MALFUNCTION DETECTION ANALYSIS AND RECORDING SUBSYSTEM (MADARS) ACTIVITIES	1	1	1	*
R PERFORMING PNEUDRAULIC OR HYDRAULIC SYSTEM ACTIVITIES	2	2	2	2
S PERFORMING POWER PLANT SYSTEM ACTIVITIES	10	10	9	10
T PERFORMING PROPELLER SYSTEM ACTIVITIES	2	1	1	1
U PERFORMING SPECIAL MISSION ACTIVITIES	1	1	*	1
V PERFORMING EMERGENCY PROCEDURE FUNCTIONS	6	5	4	6

* Denotes less than .5 percent

TABLE 7

REPRESENTATIVE TASKS PERFORMED BY 1A151C PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=332)
H237	COMPUTE TAKEOFF AND LANDING DATA (TOLD)	98
F160	PERFORM PREFLIGHT INSPECTIONS OF AIRCRAFT FOR FLUID LEAKAGE	96
M464	OPERATE AIR-CONDITIONING SYSTEMS	95
M466	OPERATE AUTOMATIC AIRCRAFT PRESSURIZATION SYSTEMS	95
H233	COMPUTE CLIMB, CRUISE OR DESCENT DATA	94
J304	OPERATE APU OR GTC ELECTRICAL SYSTEMS	92
H228	COMPUTE AIRCRAFT EMERGENCY PERFORMANCE DATA	92
L396	MONITOR ELECTRICAL SYSTEMS, OTHER THAN INTERIOR OR EXTERIOR LIGHTING SYSTEMS	90
P665	PERFORM PREFLIGHT INSPECTIONS OF LDG TIRES	88
M448	MONITOR ANTI-ICE SYSTEMS	86
H235	COMPUTE MAXIMUM ENDURANCE OR HOLDING DATA	84
M460	MONITOR OXYGEN SYSTEMS	83
M433	ANALYZE AIR-CONDITIONING SYSTEM MALFUNCTIONS	83
V889	PERFORM, PRACTICE, OR SIMULATE SMOKE ELIMINATION PROCEDURES	82
H239	COMPUTE TIME, DISTANCE, OR FUEL USING PERFORMANCE DATA FORMULAS AND CHARTS	81
S757	MONITOR POWER PLANT INSTRUMENT SYSTEMS	80
M478	OPERATE UNDERFLOOR HEATING SYSTEMS	80
F148	OPERATE GALLEY EQUIPMENT, SUCH AS OVENS OR COFFEE MAKERS	80
M434	ANALYZE ANTI-ICE SYSTEM MALFUNCTIONS	80
J291	ANALYZE APU OR GTC BLEED AIR SYSTEM MALFUNCTIONS	77
V894	RECOMMEND CORRECTIVE ACTION FOR INFLIGHT EMERGENCY CONDITIONS	74
O591	OPERATE FUEL FLOW OR TRANSFER SYSTEMS	73
P635	MONITOR LDG POSITION INDICATORS	71
M527	TROUBLESHOOT ANTI-ICE SYSTEM MALFUNCTIONS	70
H227	COMPUTE AIR REFUELING DATA	65
L414	PERFORM OPERATIONAL CHECKS ON PITOT HEAT	65
G194	INTERPRET WIRING OR SYSTEM SCHEMATIC DIAGRAMS	65
M499	PERFORM PREFLIGHT INSPECTIONS OF ANTI-ICE SYSTEMS	64
L431	TROUBLESHOOT INSTRUMENT SYSTEM MALFUNCTIONS	63
S767	OPERATE POWER PLANT FUEL SYSTEMS	62

* Average Number of Tasks Performed - 317

TABLE 8

REPRESENTATIVE TASKS PERFORMED BY 1A171C PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=622)
H237	COMPUTE TAKEOFF AND LANDING DATA (TOLD)	96
F180	REVIEW AIRCRAFT DATA DOCUMENTATION FORMS (AFTO FORMS 781 SERIES)	95
F129	BRIEF AIRCRAFT COMMANDER OR MAINTENANCE PERSONNEL ON AIRCRAFT SYSTEM MALFUNCTIONS	95
H228	COMPUTE AIRCRAFT EMERGENCY PERFORMANCE DATA	95
M510	PERFORM PREFLIGHT INSPECTIONS OF OXYGEN SYSTEMS	95
H233	COMPUTE CLIMB, CRUISE OR DESCENT DATA	93
O579	MONITOR FUEL CONSUMPTION	92
M475	OPERATE MANUAL AIRCRAFT PRESSURIZATION SYSTEMS	92
S785	PERFORM PREFLIGHT INSPECTIONS OF POWER PLANT COWLINGS	90
M433	ANALYZE AIR-CONDITIONING SYSTEM MALFUNCTIONS	88
P665	PERFORM PREFLIGHT INSPECTIONS OF LDG TIRES	86
S757	MONITOR POWER PLANT INSTRUMENT SYSTEMS	86
G208	PERFORM SINGLE-POINT REFUELING OR DEFUELING OPERATIONS	85
M526	TROUBLESHOOT AIR-CONDITIONING SYSTEM MALFUNCTIONS	83
R704	ANALYZE HYDRAULIC SYSTEM MALFUNCTIONS	81
G206	PERFORM IN-FLIGHT INSPECTIONS OF AIRCRAFT	77
M482	PERFORM OPERATIONAL CHECKS ON AIR-CONDITIONING SYSTEMS	77
L393	ANALYZE INSTRUMENT SYSTEM MALFUNCTIONS	77
S742	ANALYZE POWER PLANT FUEL SYSTEM MALFUNCTIONS	76
R731	TROUBLESHOOT HYDRAULIC SYSTEM MALFUNCTIONS	75
H227	COMPUTE AIR REFUELING DATA	73
H240	DETERMINE ENGINE POWER REQUIREMENTS USING TIME, SPEED, AND DISTANCE FORMULAS AND CHARTS	72
E123	MAKE ENTRIES ON AIRFRAME USAGE LOGS	72
B36	DIRECT PREFLIGHT OR POSTFLIGHT INSPECTIONS OF AIRCRAFT	70
I263	OPERATE NORMAL CARGO OR RAMP SYSTEMS	69
M483	PERFORM OPERATIONAL CHECKS ON ANTI-ICE SYSTEMS	68
M494	PERFORM OPERATIONAL CHECKS ON OXYGEN SYSTEMS	68
O583	MONITOR FUEL LOGS	61
H225	COMPLETE PERFORMANCE PLANNING WORKSHSEETS	57
C75	WRITE EPRs	57
D86	COUNSEL TRAINEES ON TRAINING PROGRESS	52

* Average Number of Tasks Performed - 377

shows a few tasks reflecting supervisory responsibilities, it clearly demonstrates the high degree of technical task performance reported by group members. Table 9 presents tasks which show differences between the 5-skill level and 7-skill level groups, and also reflects that supervisory activity does begin to appear in the 7-skill level members' job.

DAFSC 1A190. Although supervisory responsibility is reported by 78 percent of the 99 members of this group (9 percent of the survey sample), only 15 percent of their relative duty time is spent on tasks pertaining to the usual supervisory, managerial, training, and administrative duties (see Table 6). Performing virtually all of the technical tasks performed by the respondents in the 7-skill level sample population, the job of these senior NCOs is broadened somewhat by the additional supervisory tasks performed (an average of 424 tasks versus 377 for 7-skill level personnel). Table 10 presents representative tasks for these members and Table 11 displays tasks which reflect differences between 7- and 9-skill level group members (primarily supervisory tasks).

CEM CODE 1A100. The 19 senior NCOs forming this group perform an average of 438 tasks (the highest of all the skill level groups), with 206 tasks accounting for over 50 percent of their relative duty time. As has been discussed with the previous skill level groups, although 60 percent report supervisory responsibilities, still, even at the CEM Code level, only 19 percent of their relative duty time is spent on tasks found in the typical supervision, management, training, and administration duty sections of the job inventory (refer to Table 6). Table 12 displays representative tasks performed by group members and shows the range and scope of the job. Note that very high percentages of the group are performing basic flight engineer technical tasks, such as computing takeoff and landing data (TOLD) and monitoring power plant instrument systems, as well as the expected supervisory-type tasks (i.e., establish organizational policies). Table 13 presents tasks which differentiate between DAFSC 1A190 and CEM Code 1A100 personnel.

Summary

The skill-level progression for the members of this AFSC is certainly not typical of most career ladders. All skill level groups responded in like numbers to the vast majority of the technical tasks in the job inventory. While still performing a primarily technical job, the DAFSC 1A190 and CEM Code 1A100 groups do report the highest amount of relative duty time spent on tasks pertaining to supervision, management, and training. The high numbers of tasks performed in common by all of the skill level groups indicates a very homogeneous career ladder.

TABLE 9

TASKS WHICH BEST DIFFERENTIATE BETWEEN
DAFSCs 1A151C AND 1A171C PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS	DAFSC 1A151C (N=332)	DAFSC 1A171C (N=622)	DIFF
B46 SUPERVISE FLIGHT ENGINEER SPECIALISTS (AFSC 11350C)	10	55	-45
D86 COUNSEL TRAINEES ON TRAINING PROGRESS	9	52	-43
C75 WRITE EPRs	15	57	-42
B45 SUPERVISE APPRENTICE FLIGHT ENGINEER SPECIALISTS (AFSC 11330C)	18	57	-39
D83 CONDUCT OJT	11	48	-37
D874 DETERMINE TRAINING REQUIREMENTS	7	40	-33
D95 MAINTAIN TRAINING RECORDS, CHARTS, GRAPHS, AIDS, DEVICES, OR FILES	9	40	-31
A46 DETERMINE OR ESTABLISH WORK PRIORITIES	15	43	-28
A16 SCHEDULE PERSONNEL FOR TDY ASSIGNMENTS, LEAVES, OR PASSES	10	36	-26
A14 PLAN OR PREPARE BRIEFINGS	12	37	-25
S797 TROUBLESHOOT POWER PLANT CONTROL SYSTEM MALFUNCTIONS	49	71	-22
B36 DIRECT PREFLIGHT OR POSTFLIGHT INSPECTIONS OF AIRCRAFT	49	70	-21

TABLE 10

REPRESENTATIVE TASKS PERFORMED BY 1A190 PERSONNEL

TASKS	PERCENT MEMBERS PERFORMING (N=99)
M464 OPERATE AIR-CONDITIONING SYSTEMS	99
H237 COMPUTE TAKEOFF AND LANDING DATA (TOLD)	97
M453 MONITOR ENVIRONMENTAL BLEED-AIR SYSTEMS	92
M498 PERFORM PREFLIGHT INSPECTIONS OF AIR-CONDITIONING SYSTEMS	90
M442 ANALYZE PRESSURIZATION SYSTEM MALFUNCTIONS	90
L393 ANALYZE INSTRUMENT SYSTEM MALFUNCTIONS	85
P666 PERFORM PREFLIGHT INSPECTIONS OF LDG WHEEL ASSEMBLIES	84
M535 TROUBLESHOOT PRESSURIZATION SYSTEM MALFUNCTIONS	83
B48 SUPERVISE FLIGHT ENGINEER TECHNICIANS (AFSC 11370C)	83
g194 INTERPRET WIRING OR SYSTEM SCHEMATIC DIAGRAMS	79
C75 WRITE EPRs	78
G202 OPERATE POWERED AGE	77
B46 SUPERVISE FLIGHT ENGINEER SPECIALISTS (AFSC 11350C)	76
A15 PLAN OR SCHEDULE WORK ASSIGNMENTS OR PRIORITIES	75
B21 CONDUCT SUPERVISORY ORIENTATIONS OF NEWLY ASSIGNED PERSONNEL	75
F131 COMPUTE AIRCRAFT CENTER-OF-GRAVITY	73
H227 COMPUTE AIR REFUELING DATA	71
B22 COORDINATE CREW ASSIGNMENTS WITH FLIGHT SCHEDULING	68
D86 COUNSEL TRAINEES ON TRAINING PROGRESS	66
C71 INDORSE ENLISTED PERFORMANCE REPORTS (EPRs)	64
A1 ASSIGN PERSONNEL TO DUTY POSITIONS	63
H236 COMPUTE PRESENT POSITION COORDINATES	63
S767 OPERATE POWER PLANT FUEL SYSTEMS	63
F127 BRIEF AIRCRAFT COMMANDER ON AIRCRAFT WEIGHT AND BALANCE STATUS	61
K378 PROGRAM FSAS EQUIPMENT	58
G203 PERFORM AIRCRAFT GROUND HANDLING, TOWING, OR PARKING OPERATIONS	57
G217 REMOVE OR REPLACE ACCESS DOORS, COWLINGS, FAIRINGS, INSPECTION PLATES, PANELS, OR WINDOWS	56
D83 CONDUCT OJT	54
J323 SERVICE APU OR GTC SYSTEMS	54
K334 ANALYZE RADAR SYSTEM MALFUNCTIONS	52
K342 MONITOR NAVIGATION EQUIPMENT, OTHER THAN RADAR	52

* Average Number of Tasks Performed - 424

TABLE 11

TASKS WHICH BEST DIFFERENTIATE BETWEEN
DAFSCs 1A171C AND 1A190 PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS	DAFSC 1A171C (N=622)	DAFSC 1A190 (N=99)	DIFF
B19 BRIEF UNIT COMMANDER ON STATUS OF FLIGHT ENGINEER ACTIVITIES, OTHER THAN TRAINING	31	82	-51
B48 SUPERVISE FLIGHT ENGINEER TECHNICIANS (AFSC 11370C)	38	83	-45
A1 ASSIGN PERSONNEL TO DUTY POSITIONS	18	63	-45
C71 INDORSE ENLISTED PERFORMANCE REPORTS (EPRs)	20	64	-44
A18 WRITE JOB DESCRIPTIONS	17	60	-43
A7 DEVELOP ORGANIZATIONAL OR FUNCTIONAL CHARTS	15	54	-39
A15 PLAN OR SCHEDULE WORK ASSIGNMENTS OR PRIORITIES	37	75	-38
B20 CONDUCT MEETINGS, SUCH AS STAFF MEETINGS, SYMPOSIUMS, CONFERENCES, OR WORKSHOPS	22	58	-36
A9 ESTABLISH ORGANIZATIONAL POLICIES	20	56	-36
C70 EVALUATE WORK SCHEDULES	16	48	-32
C62 EVALUATE OPERATIONAL READINESS OF CREWMEMBERS OR AIRCRAFT	27	58	-31
A6 DEVELOP FLIGHT SCHEDULING METHODS	27	55	-28
F156 PERFORM FUNCTIONAL CHECKFLIGHT (FCF) DUTIES	43	70	-27
A14 PLAN OR PREPARE BRIEFINGS	37	60	-23

TABLE 12

REPRESENTATIVE TASKS PERFORMED BY 1A100 PERSONNEL

TASKS	PERCENT MEMBERS PERFORMING (N=19)
E126 MONITOR FLIGHTCREW INFORMATION FILES (FCIFs)	100
V894 RECOMMEND CORRECTIVE ACTION FOR INFLIGHT EMERGENCY CONDITIONS	95
H237 COMPUTE TAKEOFF AND LANDING DATA (TOLD)	95
M466 OPERATE AUTOMATIC AIRCRAFT PRESSURIZATION SYSTEMS	95
P655 PERFORM PREFLIGHT INSPECTIONS OF LDG BRAKE OR ANTISKID SYSTEMS	95
H228 COMPUTE AIRCRAFT EMERGENCY PERFORMANCE DATA	95
M510 PERFORM PREFLIGHT INSPECTIONS OF OXYGEN SYSTEMS	89
C53 CORRECT DISCREPANCIES OR CONTRADICTIONS IN PROCEDURES REPORTED BY CREWMEMBERS	89
H233 COMPUTE CLIMB, CRUISE OR DESCENT DATA	89
F180 REVIEW AIRCRAFT DATA DOCUMENTATION FORMS (AFTO FORMS 781 SERIES)	89
L392 ANALYZE ELECTRICAL SYSTEM MALFUNCTIONS, OTHER THAN FOR INTERIOR OR EXTERIOR LIGHTING SYSTEMS	89
S738 ANALYZE POWER PLANT CONTROL SYSTEM MALFUNCTIONS	89
M526 TROUBLESHOOT AIR-CONDITIONING SYSTEM MALFUNCTIONS	89
S757 MONITOR POWER PLANT INSTRUMENT SYSTEMS	89
A5 DEVELOP AIRCREW FLIGHT MANUALS OR DIRECTIVES	89
D93 EVALUATE TRAINING METHODS, TECHNIQUES, OR PROGRAMS	84
O591 OPERATE FUEL FLOW OR TRANSFER SYSTEMS	84
L410 PERFORM OPERATIONAL CHECKS ON ELECTRICAL POWER SYSTEMS	84
P697 TROUBLESHOOT LDG SYSTEM MALFUNCTIONS	84
A9 ESTABLISH ORGANIZATIONAL POLICIES	79
A14 PLAN OR PREPARE BRIEFINGS	79
C52 CONDUCT STAFF ASSISTANCE VISITS	74
C55 EVALUATE AIRCRAFT PERFORMANCE DATA	74
E106 COMPILE INFORMATION FOR RECORDS, REPORTS, OR LOGS	68
C72 INVESTIGATE ACCIDENTS OR INCIDENTS	68
B47 SUPERVISE FLIGHT ENGINEER SUPERINTENDENTS (AFSC 11399)	68
A3 DETERMINE LOGISTICS REQUIREMENTS, SUCH AS SPACE, PERSONNEL, EQUIPMENT, OR SUPPLIES	63
C59 EVALUATE INSPECTION REPORT FINDINGS	58
K388 TROUBLESHOOT RADAR SYSTEM MALFUNCTIONS	58

* Average Number of Tasks Performed - 438

TABLE 13

TASKS WHICH BEST DIFFERENTIATE BETWEEN
DAFSC 1A190 AND CEM CODE 1A100 PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS	DAFSC 1A190 (N=99)	CEM CODE 1A100 (N=19)	DIFF
C75 WRITE EPRs	78	26	+52
B22 COORDINATE CREW ASSIGNMENTS WITH FLIGHT SCHEDULING	68	21	+47
B21 CONDUCT SUPERVISORY ORIENTATION OF NEWLY ASSIGNED PERSONNEL	75	32	+43
A15 PLAN OR SCHEDULE WORK ASSIGNMENTS OR PRIORITIES	75	42	+33
A16 SCHEDULE PERSONNEL FOR TDY ASSIGNMENTS, LEAVES, OR PASSES	71	42	+29
A6 DEVELOP FLIGHT SCHEDULING METHODS	55	26	+29

C72 INVESTIGATE ACCIDENTS OR INCIDENTS	22	68	-46
C76 WRITE STAFF STUDIES, SURVEYS, OR SPECIAL REPORTS, OTHER THAN TRAINING REPORTS	38	79	-41
B47 SUPERVISE FLIGHT ENGINEER SUPERINTENDENTS (AFSC 11399)	33	68	-35
C59 EVALUATE INSPECTION REPORT FINDINGS	27	58	-31
C68 EVALUATE SAFETY OR SECURITY PROGRAMS	29	58	-29
B35 DIRECT MAINTENANCE OF TECHNICAL ORDER (TO) FILES	31	53	-22

SPECIAL ANALYSIS

This career ladder utilizes predominantly three of the available skill level prefixes as an important part of the process of managing and classifying personnel. These prefixes include: "X" - *Aircrew*; "K" - *Aircrew Instructor*; and "Q" - *Aircrew Standardization/Flight Examiner*. In order to contrast the data based on the prefix held, personnel were grouped based on the prefix reported with their DAFSC. The data were then analyzed with a view toward determining differences and similarities among the three groups defined.

Table 14 displays selected background characteristics of the three groups and shows how group members are dispersed across the nine jobs described in the **SPECIALTY JOBS** section of this report. Review of the demographics for the groups reflects the increase in experience levels as personnel move from the "X" to the "K" and "Q" prefixes. It is also evident that all three prefixes are represented in each of the nine specialty jobs identified.

Table 15 displays how the relative duty time of the three groups is distributed. Review of the table reveals no substantial differences across the prefix groups in terms of time spent on tasks in the various duty sections of the job inventory. These data indicate that flight engineers perform a vast majority of the total spectrum of inventory tasks in common, regardless of their assigned DAFSC prefix.

Table 16 compares responses to representative tasks from the JI covering duties dealing with a variety of aircraft systems and the supervisory, managerial, and training activities. Here, again, it is evident that the percentages of members in the three groups performing tasks from the duties pertaining to the aircraft systems are comparable. The only notable differences in task performance occur in the "K" and "Q" prefix groups in Duties A, B, C, and D. As noted earlier, experience levels rise as personnel move to the "K" and "Q" prefix groups, and with that experience, clearly some supervision becomes a part of the group's responsibilities. This is particularly true for "Q" prefix group members (see highlighted numbers in Table 16).

In summary, these data (examined from various perspectives) clearly show that members holding any of the three prefixes perform a vast majority of the JI tasks in common. The primary difference in task performance occurs in some of the supervisory, managerial, and training activities.

ANALYSIS OF AFMAN 36-2108 *SPECIALTY DESCRIPTION*

Survey data were compared to the AFMAN 36-2108 *Specialty Description* for Flight Engineer (C Shred - Performance Qualified), dated 31 October 1994. The overall specialty description for the 3-, 5-, 7-, 9-skill levels and CEM accurately describes the technical and supervisory nature of jobs at the various levels. The description also reflects the primary tasks and responsibilities discussed in the **SPECIALTY JOBS** section of this report.

TABLE 14
 SELECTED BACKGROUND DATA ON DAFSC PREFIX GROUPS
 "X" - AIRCREW
 "K" - AIRCREW INSTRUCTOR
 "Q" - AIRCREW STANDARDIZATION/FLIGHT EXAMINER

	<u>"X"</u> <u>PREFIX</u>	<u>"K"</u> <u>PREFIX</u>	<u>"Q"</u> <u>PREFIX</u>
NUMBER IN GROUP	645	255	162
PERCENT OF TOTAL SAMPLE	60%	24%	15%
AVERAGE MONTHS IN CAREER FIELD	74	118	145
AVERAGE MONTHS IN SERVICE	147	184	211
AVERAGE NUMBER OF TASKS PERFORMED	348	378	408
PERCENT HOLDING DAFSC: 1A151C	48%	7%	1%
1A171C	43%	90%	69%
1A190	9%	2%	21%
1A100	0%	0%	9%
PERCENT IN CONUS	93%	92%	95%

DISTRIBUTION ACROSS SPECIALTY JOBS:

C-141 FLIGHT ENGINEERS (N=465)	64%	20%	15%
C-5 FLIGHT ENGINEERS (N=202)	72%	18%	10%
KC-10 FLIGHT ENGINEERS (N=60)	45%	40%	15%
- 135 SERIES FLIGHT ENGINEERS (N=30)	50%	27%	17%
E-3 FLIGHT ENGINEERS (N=28)	75%	21%	4%
E-4 FLIGHT ENGINEERS (N=9)	67%	21%	11%
VC-137 FLIGHT ENGINEERS (N=15)	47%	13%	33%
C-130 FLIGHT ENGINEERS (N=229)	47%	32%	19%
SUPERVISORY FLIGHT ENGINEERS (N=7)	14%	43%	29%

TABLE 15

RELATIVE PERCENT TIME SPENT ON DUTIES BY DAFSC PREFIX GROUPS

DUTIES	PREFIX "X" (N=645)	PREFIX "K" (N=255)	PREFIX "Q" (N=162)	TOTAL SAMPLE (N=1,072)
A ORGANIZING AND PLANNING	1	1	2	1
B DIRECTING AND IMPLEMENTING	2	3	4	3
C INSPECTING AND EVALUATING	1	1	2	1
D TRAINING	1	4	3	2
E PERFORMING ADMINISTRATIVE ACTIVITIES	2	2	3	2
F PERFORMING GENERAL AIRCREW ACTIVITIES	12	10	10	11
G PERFORMING GENERAL MAINTENANCE ACTIVITIES	4	3	3	3
H PERFORMING MISSION PLANNING AND PERFORMANCE DATA COMPUTATIONS	4	3	3	4
I PERFORMING AUXILIARY SYSTEM ACTIVITIES	2	3	3	2
J PERFORMING AUXILIARY POWER UNIT (APU) AND GAS TURBINE COMPRESSOR (GTC) SYSTEM ACTIVITIES	7	7	6	7
K PERFORMING COMMUNICATION AND NAVIGATION SYSTEM ACTIVITIES	6	5	5	6
L PERFORMING ELECTRICAL AND INSTRUMENT SYSTEM ACTIVITIES	8	8	7	8
M PERFORMING ENVIRONMENTAL SYSTEM ACTIVITIES	15	14	14	15
N PERFORMING FLIGHT CONTROL SYSTEM ACTIVITIES	4	4	4	4
O PERFORMING FUEL SYSTEM ACTIVITIES	6	6	5	6
P PERFORMING LANDING GEAR (LDG) AND BRAKE SYSTEM ACTIVITIES	6	5	6	6
Q PERFORMING MALFUNCTION DETECTION ANALYSIS AND RECORDING SUBSYSTEM (MADARS) ACTIVITIES	1	1	1	1
R PERFORMING PNEUDRAULIC OR HYDRAULIC SYSTEM ACTIVITIES	2	2	2	2
S PERFORMING POWER PLANT SYSTEM ACTIVITIES	10	10	10	10
T PERFORMING PROPELLER SYSTEM ACTIVITIES	1	2	1	1
U PERFORMING SPECIAL MISSION ACTIVITIES	*	1	1	*
V PERFORMING EMERGENCY PROCEDURE FUNCTIONS	5	5	5	5

* Denotes less than .5 percent

TABLE 16

COMPARISON OF SELECTED REPRESENTATIVE TASKS PERFORMED BY DAFSC PREFIX GROUPS
(PERCENT MEMBERS PERFORMING)

TASKS	PREFIX "X" (N=645)	PREFIX "K" (N=255)	PREFIX "Q" (N=162)	TOTAL SAMPLE (N=1,072)
<u>FROM DUTY A - ORGANIZING AND PLANNING</u>				
A5 DEVELOP AIRCREW FLIGHT MANUALS OR DIRECTIVES	9	19	52	18
A10 ESTABLISH PERFORMANCE STANDARDS	13	27	67	25
<u>FROM DUTY B - DIRECTING AND IMPLEMENTING</u>				
B19 BRIEF UNIT COMMANDER ON STATUS OF FLIGHT ENGINEER ACTIVITIES, OTHER THAN TRAINING	18	26	71	28
B25 COORDINATE MAINTENANCE REQUIREMENTS WITH CREW CHIEFS	71	80	81	75
B36 DIRECT PREFLIGHT OR POSTFLIGHT INSPECTIONS OF AIRCRAFT	60	69	75	64
B44 INTERPRET POLICIES, DIRECTIVES, OR PROCEDURES FOR SUBORDINATES	20	42	63	32
<u>FROM DUTY C - INSPECTING AND EVALUATING</u>				
C55 EVALUATE AIRCRAFT PERFORMANCE DATA	29	42	72	39
C58 EVALUATE DISCREPANCIES OR CONTRADICTIONS IN PROCEDURES REPORTED BY CREWMEMBERS	13	21	57	22
C62 EVALUATE OPERATIONAL READINESS OF CREWMEMBERS OR AIRCRAFT	15	27	65	25
<u>FROM DUTY D - TRAINING</u>				
D82 CONDUCT JOB PROFICIENCY TRAINING	13	68	56	33
D83 CONDUCT OJT	20	68	53	37

TABLE 16 (CONTINUED)

COMPARISON OF SELECTED REPRESENTATIVE TASKS PERFORMED BY DAFSC PREFIX GROUPS
(PERCENT MEMBERS PERFORMING)

TASKS	PREFIX "X" (N=645)	PREFIX "K" (N=255)	PREFIX "Q" (N=168)	TOTAL SAMPLE (N=1,072)
<u>FROM DUTY E - PERFORMING ADMINISTRATIVE ACTIVITIES</u>				
E106 COMPILE INFORMATION FOR RECORDS, REPORTS, OR LOGS	27	41	56	35
E117 MAINTAIN CURRENT STATUS OF FLIGHT MANUALS, SAFETY AND OPERATIONAL SUPPLEMENTS, AND FLIGHTCREW CHECKLISTS	56	65	79	62
E118 MAINTAIN FLIGHT EVALUATION FORMS (FEFs)	4	8	64	14
E123 MAKE ENTRIES ON AIRFRAME USAGE LOGS	65	72	81	69
<u>FROM DUTY F - PERFORMING GENERAL AIRCREW ACTIVITIES</u>				
F148 OPERATE GALLEY EQUIPMENT, SUCH AS OVENS OR COFFEE MAKERS	83	86	82	84
F160 PERFORM PREFLIGHT INSPECTIONS OF AIRCRAFT FOR FLUID LEAKAGE	96	95	96	96
F183 SECURE EQUIPMENT FOR DESCENT OR LANDING	64	63	63	63
<u>FROM DUTY H - PERFORMING MISSION PLANNING AND PERFORMANCE DATA COMPUTATIONS</u>				
H227 COMPUTE AIR REFUELING DATA	72	69	64	70
H233 COMPUTE CLIMB, CRUISE OR DESCENT DATA	94	93	93	94
H237 COMPUTE TAKEOFF AND LANDING DATA (TOLD)	97	96	95	96
<u>FROM DUTY I - PERFORMING AUXILIARY SYSTEM ACTIVITIES</u>				
I247 ANALYZE DOOR WARNING SYSTEM MALFUNCTIONS	76	73	83	76
I254 MONITOR CARGO DOOR OR RAMP SYSTEM OPERATIONS	67	71	77	69
I263 OPERATE NORMAL CARGO DOOR OR RAMP SYSTEMS	64	71	75	67
I287 TROUBLESHOOT DOOR WARNING SYSTEM MALFUNCTIONS	61	65	67	63

TABLE 16 (CONTINUED)

COMPARISON OF SELECTED REPRESENTATIVE TASKS PERFORMED BY DAFSC PREFIX GROUPS
(PERCENT MEMBERS PERFORMING)

TASKS	PREFIX "X" (N=645)	PREFIX "K" (N=255)	PREFIX "Q" (N=162)	TOTAL SAMPLE (N=1,072)
<u>FROM DUTY L - PERFORMING ELECTRICAL AND INSTRUMENT SYSTEM ACTIVITIES</u>				
L393 ANALYZE INSTRUMENT SYSTEM MALFUNCTIONS	73	80	80	75
L398 MONITOR INSTRUMENT SYSTEM OPERATIONS	79	82	81	80
L404 OPERATE INSTRUMENT SYSTEMS	55	61	66	58
L431 TROUBLESHOOT INSTRUMENT SYSTEM MALFUNCTIONS	69	78	78	72
<u>FROM DUTY M - PERFORMING ENVIRONMENTAL SYSTEM ACTIVITIES</u>				
M441 ANALYZE OXYGEN SYSTEM MALFUNCTIONS	73	77	83	76
M476 OPERATE OXYGEN SYSTEMS	84	82	91	84
M510 PERFORM PREFLIGHT INSPECTIONS OF OXYGEN SYSTEMS	95	92	96	94
M534 TROUBLESHOOT OXYGEN SYSTEM MALFUNCTIONS	64	70	75	67
<u>FROM DUTY R - PERFORMING PNEUDRAULIC OR HYDRAULIC SYSTEM ACTIVITIES</u>				
R704 ANALYZE HYDRAULIC SYSTEM MALFUNCTIONS	76	81	86	78
R713 OPERATE HYDRAULIC SYSTEMS TO INCLUDE EMERGENCY SYSTEM OPERATIONS	78	82	88	81
R728 SERVICE HYDRAULIC SYSTEM RESERVOIRS	60	57	64	60
R731 TROUBLESHOOT HYDRAULIC SYSTEM MALFUNCTIONS	70	69	74	70
<u>FROM DUTY S - PERFORMING POWER PLANT SYSTEM ACTIVITIES</u>				
S742 ANALYZE POWER PLANT FUEL SYSTEM MALFUNCTIONS	68	78	82	72
S755 MONITOR POWER PLANT FUEL SYSTEMS	86	86	94	87
S767 OPERATE POWER PLANT FUEL SYSTEMS	61	69	63	63
S801 TROUBLESHOOT POWER PLANT FUEL SYSTEM MALFUNCTIONS	69	75	81	72

TRAINING ANALYSIS

Occupational survey data are one of the 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 assignment. Factors which may be used in evaluating training include the overall description of the job being performed by first-assignment personnel and their overall distribution across career ladder jobs, percentages of first-job (1-24 months TICF) or first-assignment (1-48 months TICF) members performing specific tasks, as well as TE and TD ratings (previously explained in the **SURVEY METHODOLOGY** section).

To assist specifically in evaluation of the STS, senior AFSC 1A1X1C NCOs, on TDY to AFOMS to perform a minor review of the Specialty Knowledge Test (SKT), matched tasks from the JI to the appropriate sections and subsections of the STS. Subject Matter Experts (SME) at Altus AFB provided assistance in matching tasks from the JI to appropriate areas of the Basic Flight Engineer (BFE) Course Objective Hierarchy Index. It was these matchings upon which comparison to those documents was based. A complete computer listing displaying the percent members performing tasks, TE and TD ratings for each task, along with the STS and BFE Course Objective Hierarchy Index matchings, has been forwarded to the technical school for their use in further detailed reviews of appropriate training documents. A summary of this information is presented below.

First-Assignment Personnel

In this study, there are 289 members in their first assignment (1-48 months TICF), representing 27 percent of the total survey sample. The job performed by these personnel is highly technical in nature, with approximately 80 percent of their relative duty time spent on tasks pertaining to various aircraft systems. An additional 18 percent of their relative time is devoted to tasks involving general aircrew and maintenance activities and associated administrative activities (see Table 17). Distribution of these personnel across the career ladder jobs is displayed in Figure 2, which also displays that by far the largest percentages of first-assignment airmen are performing in the C-141 FLIGHT ENGINEERS job. Table 18 displays some of the average 321 tasks performed by the group. Table 19 displays responses reflecting the aircraft on which these members hold current qualification ratings.

Training Emphasis (TE) and Task Difficulty (TD) Data

TE and TD data are secondary factors 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 rank-ordering of those tasks in the JI considered important for first-assignment personnel training (TE) (see Table 20 for the top-rated tasks), along with a measure of the difficulty of the JI tasks (TD) (see selected high rated tasks presented in Table 21). When

TABLE 17

RELATIVE PERCENT TIME SPENT ON DUTIES BY FIRST-ASSIGNMENT PERSONNEL
(N=289)

DUTIES	PERCENT TIME SPENT
A ORGANIZING AND PLANNING	*
B DIRECTING AND IMPLEMENTING	2
C INSPECTING AND EVALUATING	*
D TRAINING	*
E PERFORMING ADMINISTRATIVE ACTIVITIES	2
F PERFORMING GENERAL AIRCREW ACTIVITIES	12
G PERFORMING GENERAL MAINTENANCE ACTIVITIES	4
H PERFORMING MISSION PLANNING AND PERFORMANCE DATA COMPUTATIONS	4
I PERFORMING AUXILIARY SYSTEM ACTIVITIES	3
J PERFORMING AUXILIARY POWER UNIT (APU) AND GAS TURBINE COMPRESSOR (GTC) SYSTEM ACTIVITIES	8
K PERFORMING COMMUNICATION AND NAVIGATION SYSTEM ACTIVITIES	5
L PERFORMING ELECTRICAL AND INSTRUMENT SYSTEM ACTIVITIES	8
M PERFORMING ENVIRONMENTAL SYSTEM ACTIVITIES	16
N PERFORMING FLIGHT CONTROL SYSTEM ACTIVITIES	4
O PERFORMING FUEL SYSTEM ACTIVITIES	6
P PERFORMING LANDING GEAR (LDG) AND BRAKE SYSTEM ACTIVITIES	6
Q PERFORMING MALFUNCTION DETECTION ANALYSIS AND RECORDING SUBSYSTEM (MADARS) ACTIVITIES	1
R PERFORMING PNEUDRAULIC OR HYDRAULIC SYSTEM ACTIVITIES	2
S PERFORMING POWER PLANT SYSTEM ACTIVITIES	10
T PERFORMING PROPELLER SYSTEM ACTIVITIES	1
U PERFORMING SPECIAL MISSION ACTIVITIES	*
V PERFORMING EMERGENCY PROCEDURE FUNCTIONS	6

* Denotes less than .5 percent

DISTRIBUTION OF 1A1X1C FIRST-ASSIGNMENT PERSONNEL ACROSS SPECIALTY JOBS

(N=289)

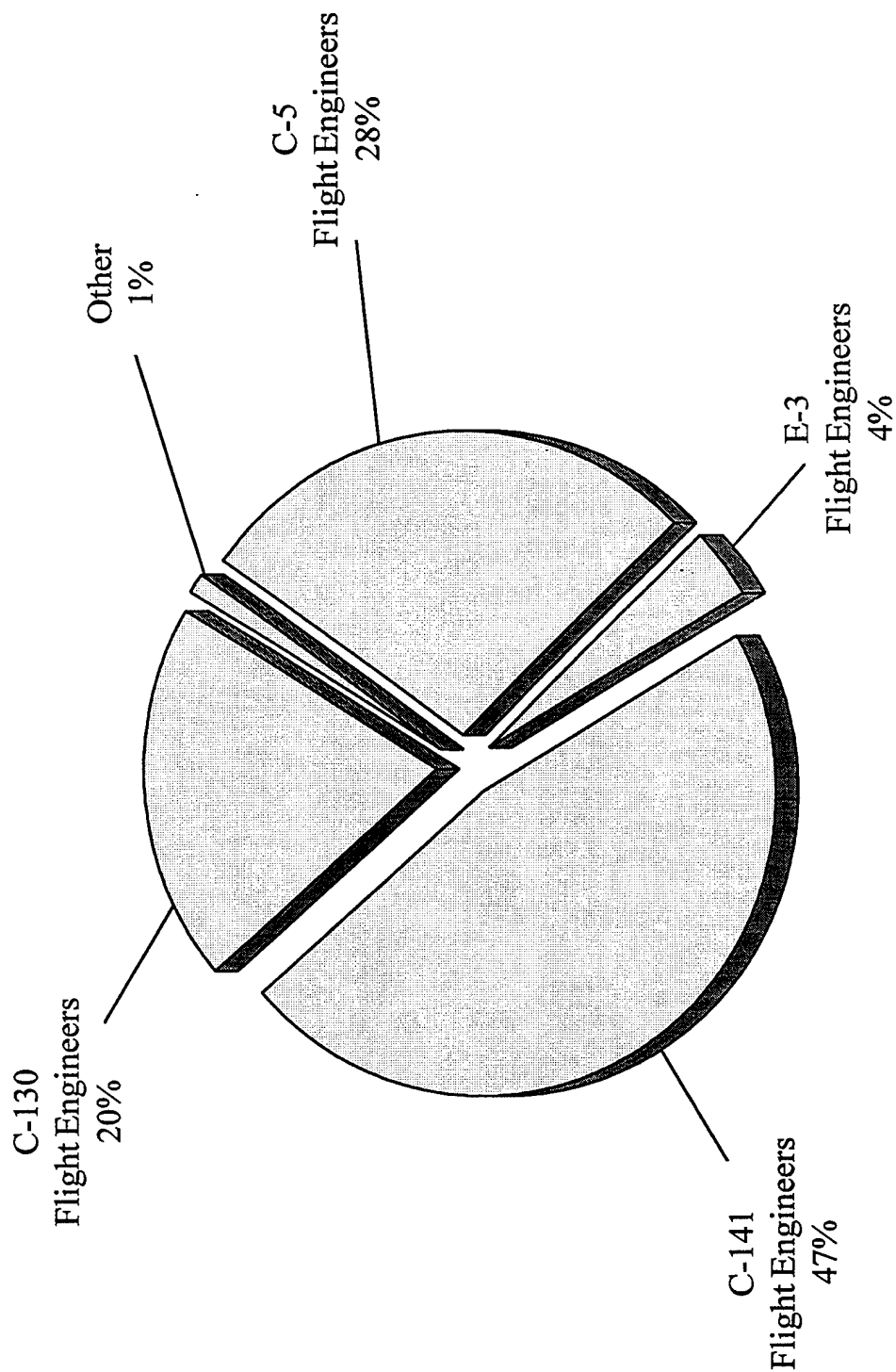


FIGURE 2

TABLE 18
 REPRESENTATIVE TASKS PERFORMED BY 1A1X1C
 FIRST-ASSIGNMENT PERSONNEL
 (N=289)

TASKS		PERCENT MEMBERS PERFORMING
H237	COMPUTE TAKEOFF AND LANDING DATA (TOLD)	98
F164	PERFORM PREFLIGHT INSPECTIONS OF COCKPIT OR CABIN COMPARTMENTS	97
M449	MONITOR AUTOMATIC AIRCRAFT PRESSURIZATION SYSTEMS	95
H233	COMPUTE CLIMB, CRUISE, OR DESCENT DATA	95
M464	OPERATE AIR-CONDITIONING SYSTEMS	95
F183	VERIFY SAFETY PINS AND STREAMERS ARE REMOVED PRIOR TO FLIGHT OR INSTALLED AFTER FLIGHT	94
G184	APPLY EXTERNAL AC OR DC CURRENT TO AIRCRAFT	94
F180	REVIEW AIRCRAFT DATA DOCUMENTATION FORMS (AFTO FORMS 781 SERIES)	93
M510	PERFORM PREFLIGHT INSPECTIONS OF OXYGEN SYSTEMS	93
H228	COMPUTE AIRCRAFT EMERGENCY PERFORMANCE DATA	92
M459	MONITOR MANUAL AIRCRAFT PRESSURIZATION SYSTEMS	91
O579	MONITOR FUEL CONSUMPTION	89
G208	PERFORM SINGLE-POINT REFUELING OR DEFUELING OPERATIONS	87
S755	MONITOR POWER PLANT FUEL SYSTEMS	82
M433	ANALYZE AIR-CONDITIONING SYSTEM MALFUNCTIONS	82
P666	PERFORM PREFLIGHT INSPECTIONS OF LDG WHEEL ASSEMBLIES	81
M476	OPERATE OXYGEN SYSTEMS	80
M434	ANALYZE ANTI-ICE SYSTEM MALFUNCTIONS	80
S757	MONITOR POWER PLANT INSTRUMENT SYSTEMS	79
J292	ANALYZE APU OR GTC ELECTRICAL SYSTEM MALFUNCTIONS	78
J310	PERFORM OPERATIONAL CHECKS ON APU OR GTC ELECTRICAL SYSTEMS	75
J324	TROUBLESHOOT APU OR GTC BLEED AIR SYSTEM MALFUNCTIONS	75
O591	OPERATE FUEL FLOW OR TRANSFER SYSTEMS	73
O588	OPERATE AIR REFUELING SYSTEMS	71
M499	PERFORM PREFLIGHT INSPECTIONS OF ANTI-ICE SYSTEMS	69
M511	PERFORM PREFLIGHT INSPECTIONS OF PRESSURIZATION SYSTEMS	68
L410	PERFORM OPERATIONAL CHECKS ON ELECTRICAL POWER SYSTEMS	67

Average Number of Tasks Performed - 321

TABLE 19

AIRCRAFT ON WHICH FIRST-ASSIGNMENT PERSONNEL
HOLD CURRENT QUALIFICATION RATINGS
(N=289)

AIRCRAFT	PERCENT MEMBERS RESPONDING
C-141	47
C-5	28
C-130	20
E-3	4
NONE	1

TABLE 20

TECHNICAL TASKS RATED HIGHEST IN TRAINING EMPHASIS (TE)

TASKS	TNG EMP*	PERCENT MEMBERS PERFORMING	TASK DIFF**
		1ST JOB (N=172)	1ST ASG (N=289)
H237 COMPUTE TAKEOFF AND LANDING DATA (TOLD)	7.42	98	98
H228 COMPUTE AIRCRAFT EMERGENCY PERFORMANCE DATA	7.06	91	92
V877 PERFORM, PRACTICE, OR SIMULATE ENGINE FIRE, SEVERE DAMAGE, OR SEPARATION EMERGENCY PROCEDURES	6.67	86	87
V889 PERFORM, PRACTICE, OR SIMULATE SMOKE ELIMINATION PROCEDURES	6.48	85	83
F166 PERFORM PREFLIGHT INSPECTIONS OF EMERGENCY EQUIPMENT, SUCH AS PARACHUTES, OXYGEN BOTTLES, CRASH AXES, OR FIRE EXTINGUISHERS	6.45	95	96
F145 OPERATE EMERGENCY EQUIPMENT, SUCH AS PARACHUTES, OXYGEN BOTTLES, FIRE EXTINGUISHERS, FIRST-AID KITS, CRASH AXES, OR ROPES	6.45	78	81
H233 COMPUTE CLIMB, CRUISE OR DESCENT DATA	6.42	95	95
V874 PERFORM, PRACTICE, OR SIMULATE ELECTRICAL FIRE PROCEDURES, OTHER THAN CABIN FIRES	6.39	86	85
V888 PERFORM, PRACTICE, OR SIMULATE SINGLE-ENGINE FAILURE EMERGENCY PROCEDURES	6.36	88	87
M476 OPERATE OXYGEN SYSTEMS	6.33	76	80

* Mean TE Rating is 2.63, and Standard Deviation is 1.84 (High TE = 4.47)

** Average TD Rating is 5.00

TABLE 21

SELECTED TASKS RATED HIGH IN DIFFICULTY

TASKS	TASK DIFF*	PERCENT MEMBERS PERFORMING				
		1ST JOB (N=172)	1ST ASG (N=289)	DAFSC 1A151C (N=332)	DAFSC 1A171C (N=622)	
P680 TROUBLESHOOT LDG TILT SYSTEM MALFUNCTIONS	7.69	3	2	2	4	
Q695 PERFORM MADARS PROPULSION POWER PLANT SYSTEM ANALYSES	7.23	26	24	16	18	
T808 ANALYZE PROPELLER ELECTRONIC GOVERNOR SYSTEM MALFUNCTIONS	7.21	16	14	20	17	
C75 WRITE EPRs	6.95	11	15	15	57	
G194 INTERPRET WIRING OR SYSTEM SCHEMATIC DIAGRAMS	6.82	70	69	65	73	
P677 TROUBLESHOOT LDG KNEELING SYSTEM MALFUNCTIONS	6.69	18	19	13	17	
N540 ANALYZE AFCS OR AUTOPILOT SYSTEM MALFUNCTIONS	6.60	41	48	47	56	
L430 TROUBLESHOOT ELECTRICAL SYSTEM MALFUNCTIONS, OTHER THAN INTERIOR OR EXTERIOR LIGHTING SYSTEMS	6.56	69	74	73	82	
M535 TROUBLESHOOT PRESSURIZATION SYSTEM MALFUNCTIONS	6.52	63	69	65	79	
P679 TROUBLESHOOT LDG SYSTEM MALFUNCTIONS	6.48	58	60	59	68	
P670 REMOVE OR REPLACE LDG SYSTEM COMPONENTS, SUCH AS SWITCH CARDS, RELAYS, DOORS, OR TIRES	6.38	15	14	11	20	

* Average TD Rating is 5.00

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

To assist technical school personnel, AFOMS has developed a computer program that incorporates these secondary factors and the percentage of first-assignment personnel performing each task to produce an Automated Training Indicator (ATI) for each task. These indicators correspond to training decisions listed and defined in the Training Decision Logic Table found in Attachment 1, AETCR 52-22, and allow course personnel to quickly focus their attention on those tasks which are most likely to qualify for initial resident course consideration.

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

Specialty Training Standard (STS)

A comprehensive review of STS 1A1X1C, dated November 1994, compared STS items to survey data (based on the previously mentioned assistance from subject-matter experts in matching JI tasks to STS elements). STS paragraphs 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 AETCR 52-22 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 AFS).

Overall, the STS provides very comprehensive coverage of the work performed by personnel in this career ladder, with survey data supporting practically all of the essential paragraphs or subparagraphs. Even though some elements did not have high percentages of personnel performing matched tasks, the fact that the supporting tasks were a part of an identifiable job being performed in the career ladder supports the retention of the STS element involving those tasks.

Only two elements of the STS were not supported by occupational survey data and do require a review by training personnel and SMEs. Table 22 displays these elements with survey data related to tasks matched to them. These STS elements should be carefully considered regarding whether retention in the STS is warranted.

TABLE 22

EXAMPLES OF STS ELEMENTS NOT SUPPORTED BY SURVEY DATA
(LESS THAN 20 PERCENT MEMBERS PERFORMING)

STS ITEM	PERCENT MEMBERS PERFORMING					
	1ST JOB (N=172)	1ST ASG (N=289)	DAFSC 1A151C (N=332)	DAFSC 1A171C (N=622)	TNG EMP*	TSK DIFF**
9c(3) PREDICT AIRCRAFT PERFORMANCE USING: ELECTRONIC PERFORMANCE COMPUTERS						
H238 Compute time, distance, or fuel using CPU-26 A/P air navigation computers	3	4	6	6	.76	6.66
21b(6) SERVICE PROPELLER SYSTEM						
T826 Service propeller oil systems	6	5	8	10	.55	5.52

* Mean TE Rating is 2.63, and Standard Deviation is 1.84 (High TE = 4.47)

** Average TD Rating is 5.00

Tasks not matched to any element of the STS are listed at the end of the STS computer listing. These were reviewed to determine if there were any tasks concentrated around any particular functions or jobs. The few tasks that require review pertain to special mission activities. Those technical tasks performed by 20 percent or more respondents of the STS target groups, but which were not referenced to any STS element, are displayed in Table 23. Training personnel and SMEs should consider these unreferenced tasks to determine if inclusion in the STS is justified.

Basic Flight Engineer (BFE) Course Objective Hierarchy Index

Based on the previously mentioned assistance from the Altus AFB SMEs in matching inventory tasks to the BFE Course Objective Hierarchy Index, dated September 1994, a computer product was generated displaying the results of the matching process. Information furnished for consideration includes percent members performing data for first-job (1-24 months TICF) and first-assignment (1-48 months TICF) personnel, as well as TE, TD, and ATI ratings for individual tasks.

BFE Course Objective Hierarchy Index elements were compared against the standard set forth in Attachment 1, AETCR 52-22, dated 17 February 1989 (30 percent or more of the criterion first-assignment group performing tasks trained, along with sufficiently high TE and TD ratings on those tasks). Per this guidance, tasks trained in the course which do not meet these criteria must be considered for elimination from the formal course, if not justified on some other acceptable basis.

Review of the tasks matched to this training document reveals that all of the elements in the Index are well supported by survey data based on the percentages of first-job or first-assignment airmen performing tasks or high TE or TD ratings for pertinent tasks

TABLE 23

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

TASKS	PERCENT MEMBERS PERFORMING						TSK DIFF**
	1ST JOB (N=172)	1ST ASG (N=289)	DAFSC 1A151C (N=332)	DAFSC 1A171C (N=622)	TNG EMP*		
U865 PERFORM STATIC LINE OR HIGH ALTITUDE LOW OPENING (HALO) PARADROP PROCEDURES	19	21	28	25	1.42	6.07	
U856 PERFORM PARADROP OPERATIONS	20	19	24	23	.85	5.71	
U863 PERFORM SIMULATED COMBAT OPERATIONS	15	16	23	26	2.03	5.97	

* Mean TE Rating is 2.63, and Standard Deviation is 1.84 (High TE = 4.47)

** Average TD Rating is 5.00

ANALYSIS OF MAJOR COMMANDS (MAJCOM)

Tasks and background data of the seven MAJCOMs with the largest AFSC 1A1X1C populations were compared to determine whether job content varied as a function of command assignment.

The jobs performed across the commands were very similar, with a vast majority of the JI tasks performed in common. The largest percentages of duty time in most commands were committed to the performance of tasks involving general aircrew, environmental systems, and power plant system activities (see Duties F, M, and S, Table 24).

Differences in tasks performed among the major commands were affected by the aircraft utilized. AFSOC personnel responses were notable in that they reflected the highest amount of duty time spent on tasks involving special mission activities (Duty U, Table 24). Both AMC and AETC members differ from other commands because of higher percentages of duty time spent performing tasks pertaining to the Malfunction Detection Analysis and Recording Subsystem (MADARS) (see Duty Q), a system on the C-5 aircraft. Similarly, both commands' members reported minimal or no time spent on tasks pertaining to propeller system activities (see Duty T), a system applicable to the C-130 aircraft.

TABLE 24

PERCENTAGE OF TIME SPENT ON DUTIES BY MAJCOM GROUPS

DUTIES	AMC (N=672)	ACC (N=182)	AFSOC (N=42)	AFMC (N=41)	AETC (N=73)	PACAF (N=44)	USAFE (N=18)
A ORGANIZING AND PLANNING	1	1	2	2	1	1	1
B DIRECTING AND IMPLEMENTING	3	3	3	3	4	3	5
C INSPECTING AND EVALUATING	1	1	1	2	2	1	1
D TRAINING	2	2	3	2	3	2	2
E PERFORMING ADMINISTRATIVE ACTIVITIES	2	2	2	2	2	1	2
F PERFORMING GENERAL AIRCREW ACTIVITIES	11	11	9	12	11	10	10
G PERFORMING GENERAL MAINTENANCE ACTIVITIES	4	3	2	3	3	3	3
H PERFORMING MISSION PLANNING AND PERFORMANCE DATA COMPUTATIONS	4	3	2	3	4	3	2
I PERFORMING AUXILIARY SYSTEM ACTIVITIES	3	2	3	3	3	3	3
J PERFORMING AUXILIARY POWER UNIT (APU) AND GAS TURBINE COMPRESSOR (GTC) SYSTEM ACTIVITIES	7	7	7	4	7	8	8
K PERFORMING COMMUNICATION AND NAVIGATION SYSTEM ACTIVITIES	6	4	4	6	6	3	3
L PERFORMING ELECTRICAL AND INSTRUMENT SYSTEM ACTIVITIES	7	9	9	8	7	10	10
M PERFORMING ENVIRONMENTAL SYSTEM ACTIVITIES	15	15	14	15	15	15	14
N PERFORMING FLIGHT CONTROL SYSTEM ACTIVITIES	4	3	3	4	4	3	4
O PERFORMING FUEL SYSTEM ACTIVITIES	7	5	6	4	6	4	4
P PERFORMING LANDING GEAR (LDG) AND BRAKE SYSTEM ACTIVITIES	6	5	5	5	6	5	5
Q PERFORMING MALFUNCTION DETECTION ANALYSIS AND RECORDING SUBSYSTEM (MADARS) ACTIVITIES	1	0	0	0	1	0	0
R PERFORMING PNEUDRAULIC OR HYDRAULIC SYSTEM ACTIVITIES	2	2	2	2	2	2	2
S PERFORMING POWER PLANT SYSTEM ACTIVITIES	9	12	12	11	9	13	12
T PERFORMING PROPELLER SYSTEM ACTIVITIES	0	4	5	2	*	4	5
U PERFORMING SPECIAL MISSION ACTIVITIES	*	1	3	1	*	1	1
V PERFORMING EMERGENCY PROCEDURE FUNCTIONS	5	5	3	6	4	5	3

* Denotes less than .5 percent

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. Table 25 presents job satisfaction data for AFSC 1A1X1C TICF groups, together with TAFMS data for a comparative sample of Aircrew career ladders surveyed in 1993. (NOTE: As a lateral-entry career ladder, AFSC 1A1X1C data would normally be compared with other lateral-entry career ladders surveyed. However, no other similar AFSCs were surveyed in 1993. Even though most of the more senior personnel in lateral-entry career ladders have already made career decisions regarding aspects of military service life, comparisons to other Aircrew TAFMS time groups still provides a relative sense of job satisfaction similarities or differences of personnel who have performed within their career ladders for comparable elements of time).

An indication of how job satisfaction perceptions have changed over time is provided in Table 26, where TICF data for 1994 survey respondents are presented, along with data from respondents to the last occupational survey involving this career ladder, published in 1988. Finally, Table 27 presents job satisfaction responses from personnel in the specialty jobs discussed in the **SPECIALTY JOBS** section of this report. An examination of these data can show how overall job satisfaction may be influenced by the type of job performed.

Review of Table 25 reflects that responses from AFSC 1A1X1C TICF groups are quite high and practically all responses are higher than those in the comparative sample groups.

Comparison of job satisfaction indicator responses of current survey TICF groups to those in the 1988 survey (see Table 26) indicates that responses are highly positive and generally comparable to the 1988 corresponding groups.

Review of the job satisfaction data for personnel in the jobs identified in the **SPECIALTY JOBS** analysis (see Table 27) reveals that airmen responded very positively to all the indicators listed.

When there are serious problems in a career ladder, survey respondents are usually quite free with write-in comments to complain about perceived problems in the field. Thirty percent of the survey sample used the write-in feature to convey some type of information, yet only 2 percent of the comments received (representing less than 1 percent of the total sample) could be characterized as complaints pertaining to the career ladder. No particular trends were noted among the comments received.

TABLE 25

COMPARISON OF JOB SATISFACTION INDICATORS BY T1CF AND TAFMS GROUPS
(PERCENT MEMBERS RESPONDING)

	1-48 MONTHS		49-96 MONTHS		97+ MONTHS	
	T1CF 1994 1A1X1C (N=289)	TAFMS COMP SAMPLE** (N=233)	T1CF 1994 1A1X1C (N=306)	TAFMS COMP SAMPLE** (N=214)	T1CF 1994 1A1X1C (N=477)	TAFMS COMP SAMPLE** (N=565)
<u>EXPRESSED JOB INTEREST:</u>						
INTERESTING	96	86	94	90	88	87
SO-SO	3	8	4	6	8	8
DULL	1	6	2	4	4	5
<u>PERCEIVED UTILIZATION OF TALENTS:</u>						
FAIRLY WELL TO PERFECTLY	97	85	96	89	92	89
LITTLE OR NOT AT ALL	3	15	4	11	8	11
<u>PERCEIVED UTILIZATION OF TRAINING:</u>						
FAIRLY WELL TO PERFECTLY	99	94	96	94	94	89
LITTLE OR NOT AT ALL	1	6	4	6	6	11
<u>SENSE OF ACCOMPLISHMENT GAINED FROM WORK:</u>						
SATISFIED	95	84	90	87	80	81
NEUTRAL	2	5	4	4	5	6
DISSATISFIED	3	11	6	9	15	13
<u>REENLISTMENT INTENTIONS:</u>						
YES, OR PROBABLY YES	88	71	84	82	64	76
NO, OR PROBABLY NO	10	29	6	18	9	7
PLAN TO RETIRE	2	0	10	0	27	17

** Comparative sample of Aircrew career ladders surveyed in 1993 (includes AFSCs 1T2X1, Pararescue; 1A4X1, Airborne Warning Command and Control Systems; 1A5X3, Airborne Radar Systems; and 1A0X1, In-Flight Refueling Operators)

TABLE 26

COMPARISON OF CURRENT SURVEY AND 1988 T1CF GROUPS
(PERCENT MEMBERS RESPONDING POSITIVELY)

JOB SATISFACTION INFORMATION:	1-48 MOS T1CF		49-96 MOS T1CF		97+ MOS T1CF	
	1994 (N=289)	1988 (N=609)	1994 (N=306)	1988 (N=482)	1994 (N=477)	1988 (N=544)
JOB FAIRLY INTERESTING OR BETTER	96	95	94	95	88	91
TALENTS UTILIZED FAIRLY WELL OR BETTER	97	96	96	96	92	94
TRAINING UTILIZED FAIRLY WELL OR BETTER	99	97	96	98	94	95
JOB IS SATISFYING	95	90	90	88	80	85
FAVORABLY CONSIDERING REENLISTMENT	88	82	84	85	64	66

TABLE 27

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

	C-141 FLIGHT ENGINEERS (N=465)	C-5 FLIGHT ENGINEERS (N=202)	KC-10 FLIGHT ENGINEERS (N=60)	- 135 SERIES FLIGHT ENGINEERS (N=30)	E-3 FLIGHT ENGINEERS (N=28)
<u>EXPRESSED JOB INTEREST:</u>					
INTERESTING	93	93	85	100	79
SO-SO	5	4	10	0	7
DULL	2	3	5	0	14
<u>PERCEIVED UTILIZATION OF TALENTS:</u>					
FAIRLY WELL TO PERFECTLY LITTLE OR NOT AT ALL	93 7	97 3	90 10	87 13	82 18
<u>PERCEIVED UTILIZATION OF TRAINING:</u>					
FAIRLY WELL TO PERFECTLY LITTLE OR NOT AT ALL	97 3	99 1	94 6	90 10	89 11
<u>SENSE OF ACCOMPLISHMENT GAINED FROM WORK:</u>					
SATISFIED	89	89	80	77	71
NEUTRAL	3	3	5	7	0
DISSATISFIED	8	8	15	16	29
<u>REENLISTMENT INTENTIONS:</u>					
YES, OR PROBABLY YES	78	78	63	70	68
NO, OR PROBABLY NO	9	4	10	23	21
WILL RETIRE	13	18	27	7	11

TABLE 27 (CONTINUED)

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

	E-4 FLIGHT ENGINEERS (N=9)	VC-137 FLIGHT ENGINEERS (N=15)	C-130 FLIGHT ENGINEERS (N=229)	SUPERVISORY FLIGHT ENGINEERS (N=7)
<u>EXPRESSED JOB INTEREST:</u>				
INTERESTING	100	100	91	86
SO-SO	0	0	6	0
DULL	0	0	3	14
<u>PERCEIVED UTILIZATION OF TALENTS:</u>				
FAIRLY WELL TO PERFECTLY LITTLE OR NOT AT ALL	100 0	100 0	96 4	86 14
<u>PERCEIVED UTILIZATION OF TRAINING:</u>				
FAIRLY WELL TO PERFECTLY LITTLE OR NOT AT ALL	78 22	100 0	96 4	86 14
<u>SENSE OF ACCOMPLISHMENT GAINED FROM WORK:</u>				
SATISFIED	67	100	87	86
NEUTRAL	11	0	6	0
DISSATISFIED	22	0	7	14
<u>REENLISTMENT INTENTIONS:</u>				
YES, OR PROBABLY YES	78	80	76	100
NO, OR PROBABLY NO	0	13	7	0
PLAN TO RETIRE	22	7	17	0

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. Career ladder training documents appear, on the whole, to be well supported by survey data. As was pointed out in the **JOB SATISFACTION ANALYSIS** section, responses by sample personnel pertaining to utilization of training were quite high, thus indicating support for the overall training system.

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APPENDIX A

**SELECTED REPRESENTATIVE TASKS PERFORMED
BY SPECIALTY JOB GROUPS**

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TABLE I

GROUP ID NUMBER AND TITLE: GP0040, C-141 FLIGHT ENGINEERS
 GROUP SIZE: 465 PERCENT OF SAMPLE: 43%
 PREDOMINANT GRADE(S): E-5/E-6 AVERAGE TICE: 93 MONTHS
 AVERAGE TAFMS: 158 MONTHS

THE FOLLOWING ARE IN DESCENDING ORDER BY PERCENT MEMBERS PERFORMING:

<u>REPRESENTATIVE TASKS</u>		<u>PERCENT MEMBERS PERFORMING</u>
F154	Perform aircrew scanning duties	98
G184	Apply external alternating current (AC) or direct current (DC) power to aircraft	98
M464	Operate air-conditioning systems	97
H228	Compute aircraft emergency performance data	96
H233	Compute climb, cruise, or descent data	95
J304	Operate APU or GTC electrical systems	95
O579	Monitor fuel consumption	93
H239	Compute time, distance, or fuel using performance data formulas and charts	92
F152	Participate in premission briefings	89
N561	Perform preflight inspections of trim systems	88
O581	Monitor fuel flow or transfer system operations	88
M461	Monitor underfloor heating systems	86
M476	Operate oxygen systems	86
L397	Monitor emergency power generator system operations	85
M442	Analyze pressurization system malfunctions	83
H232	Compute airdrop data	83
M526	Troubleshoot air-conditioning system malfunctions	82
O593	Operate refueling systems, other than air refueling systems	82
K340	Monitor FSAS system operations	80
L419	Perform preflight inspections of electrical power systems	80
M527	Troubleshoot anti-ice system malfunctions	80
R704	Analyze hydraulic system malfunctions	79
P618	Analyze LDG brake or antiskid system malfunctions	78
G202	Operate powered AGE	77
L407	Perform operational checks on batteries or battery relays	76
G194	Interpret wiring or system schematic diagrams	75
G210	Perform thru-flight or postflight inspections of aircraft	74
N557	Perform operational checks on wing spoiler system	73
H231	Compute aircraft weight and balance data using charts, load adjusters, or calculators	72
R728	Service hydraulic system reservoirs	72

TABLE II

GROUP ID NUMBER AND TITLE: GP0038, C-5 FLIGHT ENGINEERS
 GROUP SIZE: 202 PERCENT OF SAMPLE: 19%
 PREDOMINANT GRADE(S): E-7/E-6 AVERAGE TICF: 79 MONTHS
 AVERAGE TAFMS: 167 MONTHS

THE FOLLOWING ARE IN DESCENDING ORDER BY PERCENT MEMBERS PERFORMING:

<u>REPRESENTATIVE TASKS</u>	<u>PERCENT MEMBERS PERFORMING</u>
H237 Compute takeoff and landing data (TOLD)	99
M466 Operate automatic aircraft pressurization systems	97
Q698 Perform preflight inspections of MADARS	97
G184 Apply AC or DC power to aircraft	95
H233 Compute climb, cruise or descent data	95
Q687 Perform MADARS engine vibration analyses	95
N558 Perform preflight inspections of AFCS or autopilot systems	93
P656 Perform preflight inspections of LDG casting systems	93
J305 Operate APU or GTC fire extinguishing systems	91
O588 Operate air refueling systems	89
P634 Monitor LDG kneeling system operations	88
Q690 Perform MADARS flight instrument system analyses	87
P661 Perform preflight inspections of LDG kneeling systems	86
N561 Perform preflight inspections of trim systems	85
S757 Monitor power plant instrument systems	84
L397 Monitor emergency power generator system operations	83
P643 Operate LDG kneeling systems	82
S783 Perform preflight inspections of power plant air intakes	79
S763 Monitor thrust reverser system operations	78
O594 Operate wing pressurization systems	76
N540 Analyze automatic flight control system (AFCS) or autopilot system malfunctions	73
I257 Monitor visor system operations	73
R723 Perform preflight inspections of RAT systems	71
P682 Troubleshoot nosewheel steering system malfunctions	70
M452 Monitor electronic cooling systems	67
I246 Analyze cargo door or ramp system malfunctions	62
I278 Perform preflight inspections of visor systems	60
R733 Troubleshoot RAT system malfunctions	57

TABLE III

GROUP ID NUMBER AND TITLE: GP0045, KC-10 FLIGHT ENGINEERS
 GROUP SIZE: 60 PERCENT OF SAMPLE: 6%
 PREDOMINANT GRADE(S): E-6/E-7/E-5 AVERAGE TICF: 136 MONTHS
 AVERAGE TAFMS: 195 MONTHS

THE FOLLOWING ARE IN DESCENDING ORDER BY PERCENT MEMBERS PERFORMING:

<u>REPRESENTATIVE TASKS</u>	<u>PERCENT MEMBERS PERFORMING</u>
M447 Monitor air-conditioning systems	100
H237 Compute takeoff and landing data (TOLD)	97
H227 Compute air refueling data	97
M466 Operate automatic aircraft pressurization systems	97
H233 Compute climb, cruise or descent data	97
M464 Operate air-conditioning systems	95
H228 Compute aircraft emergency performance data	95
M465 Operate anti-ice systems	95
K349 Operate AFSATCOM or secure communications system equipment	93
K337 Monitor AFSATCOM or secure communications system equipment	93
O578 Monitor air refueling system operations	92
S735 Adjust power plant controls during flight	90
F148 Operate galley equipment, such as ovens or coffee makers	90
K358 Perform operational checks on AFSATCOM or secure communications system equipment	88
J292 Analyze APU or GTC electrical system malfunctions	85
K367 Perform preflight inspections of AFSATCOM or secure communications systems equipment	83
M511 Perform preflight inspections of pressurization systems	83
K377 Program AFSATCOM or secure communications systems equipment	82
P631 Monitor center-gear system operations	80
G184 Apply external AC or DC power to aircraft	78
K336 Interpret terminal enroute procedures (TERPS)	75
K330 Analyze AFSATCOM or secure communications system malfunctions	73
M482 Perform operational checks on air-conditioning systems	72
L393 Analyze instrument system malfunctions	68
P654 Perform preflight inspections of center-gear systems	67
S796 Troubleshoot power plant bleed-air system malfunctions	62
L431 Troubleshoot instrument system malfunctions	60
F168 Perform preflight inspections of life support, survival, or personal equipment	58
O596 Perform operational checks on air refueling systems	55
N560 Perform preflight inspections of SFCSS	53

TABLE IV

GROUP ID NUMBER AND TITLE: GP0046, -135 SERIES FLIGHT ENGINEERS
 GROUP SIZE: 30 PERCENT OF SAMPLE: 3%
 PREDOMINANT GRADE(S): E-7/E-6 AVERAGE TICF: 120 MONTHS
 AVERAGE TAFMS: 185 MONTHS

THE FOLLOWING ARE IN DESCENDING ORDER BY PERCENT MEMBERS PERFORMING:

<u>REPRESENTATIVE TASKS</u>	<u>PERCENT MEMBERS PERFORMING</u>
H237 Compute takeoff and landing data (TOLD)	100
F131 Compute aircraft center-of-gravity	100
F183 Verify safety pins and streamers are removed prior to flight or installed after flight	100
M433 Analyze air-conditioning system malfunctions	97
O579 Monitor fuel consumption	93
L421 Perform preflight inspections of instrument systems	93
H235 Compute maximum endurance or holding data	93
L419 Perform preflight inspections of electrical power systems	90
S764 Operate power plant control systems	87
H233 Compute climb, cruise or descent data	83
O581 Monitor fuel flow or transfer system operations	80
M470 Operate environmental bleed-air systems	77
M526 Troubleshoot air-conditioning system malfunctions	73
F133 Fasten cargo nets or tiedown straps	73
N549 Monitor trim system operations	70
R708 Monitor cartridge start system operations	70
V887 Perform, practice, or simulate rapid descent procedures	70
O591 Operate fuel flow or transfer systems	67
M534 Troubleshoot oxygen system malfunctions	67
H236 Compute present position coordinates	63
G208 Perform single-point refueling or defueling operations	63
F130 Brief passengers on flight mission	60
K366 Perform operational checks on radar systems	60
R703 Analyze cartridge start system malfunctions	60
N555 Perform operational checks on trim systems	57
I263 Operate normal cargo door or ramp systems	53
R730 Troubleshoot cartridge start system malfunctions	50
F181 Review passenger manifests	50
G211 Position powered or nonpowered AGE	50

TABLE V

GROUP ID NUMBER AND TITLE: GP0036, E-3 FLIGHT ENGINEERS
 GROUP SIZE: 28 PERCENT OF SAMPLE: 3%
 PREDOMINANT GRADE(S): E-4/E-5 AVERAGE TICF: 73 MONTHS
 AVERAGE TAFMS: 149 MONTHS

THE FOLLOWING ARE IN DESCENDING ORDER BY PERCENT MEMBERS PERFORMING:

<u>REPRESENTATIVE TASKS</u>	<u>PERCENT MEMBERS PERFORMING</u>
F131 Compute aircraft center-of-gravity	100
F161 Perform preflight inspections of aircraft panels, locks, or fasteners	100
H227 Compute air refueling data	96
M453 Monitor environmental bleed-air systems	96
O588 Operate air refueling systems	96
M510 Perform preflight inspections of oxygen systems	96
H237 Compute takeoff and landing data (TOLD)	93
F183 Verify safety pins and streamers are removed prior to flight or installed after flight	93
H228 Compute aircraft emergency performance data	93
M460 Monitor oxygen systems	93
V872 Perform, practice, or simulate cabin fire procedures	93
O579 Monitor fuel consumption	89
H233 Compute climb, cruise or descent data	86
R715 Operate rotodome drive mechanisms	86
P666 Perform preflight inspections of LDG wheel assemblies	82
S764 Operate power plant control systems	79
J299 Monitor APU or GTC fire extinguishing system operations	75
M436 Analyze electronic cooling system malfunctions	71
R711 Monitor rotodome drive mechanism system operations	68
M458 Monitor liquid cooling systems	68
M434 Analyze anti-ice system malfunctions	64
S782 Perform power plant starts, runups, or shutdowns	57
O596 Perform operational checks on air refueling systems	57
M473 Operate hydraulic cooling systems	57
G210 Perform thru-flight or postflight inspections of aircraft	54
G206 Perform in-flight inspections of aircraft	50
M474 Operate liquid cooling systems	50

TABLE VI

GROUP ID NUMBER AND TITLE: GP0037, E-4 FLIGHT ENGINEERS
 GROUP SIZE: 9 PERCENT OF SAMPLE: 1%
 PREDOMINANT GRADE(S): E-7/E-6 AVERAGE TICF: 143 MONTHS
 AVERAGE TAFMS: 200 MONTHS

THE FOLLOWING ARE IN DESCENDING ORDER BY PERCENT MEMBERS PERFORMING:

<u>REPRESENTATIVE TASKS</u>	<u>PERCENT MEMBERS PERFORMING</u>
H237 Compute takeoff and landing data (TOLD)	100
K338 Monitor aircraft take-offs, departure, or arrival procedures	100
F131 Compute aircraft center-of-gravity	100
F160 Perform preflight inspections of aircraft for fluid leakage	100
O588 Operate air refueling systems	100
F183 Verify safety pins and streamers are removed prior to flight or installed after flight	100
L392 Analyze electrical system malfunctions, other than for interior or exterior lighting systems	100
H233 Compute climb, cruise or descent data	100
S735 Adjust power plant controls during flight	89
K346 Monitor TWA drogue system operations	89
N546 Monitor flight control position instrument systems	89
P637 Monitor LDG tilt system operations	89
M495 Perform operational checks on pressurization systems	89
O591 Operate fuel flow or transfer systems	89
P664 Perform preflight inspections of LDG tilt systems	89
S776 Perform operational checks on power plant fuel systems	89
P629 Monitor brake antiskid system operations	78
K336 Interpret terminal enroute procedures (TERPS)	78
S797 Troubleshoot power plant control system malfunctions	78
P624 Analyze LDG tilt system malfunctions	78
V872 Perform, practice, or simulate cabin fire procedures	78
M465 Operate anti-ice systems	78
P680 Troubleshoot LDG tilt system malfunctions	78
M472 Operate forced-air cooling systems	67
M484 Perform operational checks on cabin heater systems	67
P674 Troubleshoot body-gear system malfunctions	67
M500 Perform preflight inspections of cabin heater systems	67
F132 Demonstrate use of life preservers, parachutes, or oxygen masks to passengers	56
F181 Review passenger manifests	56
K335 Analyze trailing wire antenna (TWA) drogue system malfunctions	56

TABLE VII

GROUP ID NUMBER AND TITLE: GP0044, VC-137 FLIGHT ENGINEERS
 GROUP SIZE: 15 PERCENT OF SAMPLE: 1%
 PREDOMINANT GRADE(S): E-7/E-6 AVERAGE TICF: 158 MONTHS
 AVERAGE TAFMS: 204 MONTHS

THE FOLLOWING ARE IN DESCENDING ORDER BY PERCENT MEMBERS PERFORMING:

<u>REPRESENTATIVE TASKS</u>	<u>PERCENT MEMBERS PERFORMING</u>
H237 Compute takeoff and landing data (TOLD)	100
H233 Compute climb, cruise or descent data	100
F127 Brief aircraft commander on aircraft weight and balance status	100
S764 Operate power plant control systems	93
P665 Perform preflight inspections of LDG tires	93
M470 Operate environmental bleed-air systems	93
S742 Analyze power plant fuel system malfunctions	93
G187 Direct aircraft towing or parking operations	87
N561 Perform preflight inspections of trim tab systems	87
L393 Analyze instrument system malfunctions	87
M535 Troubleshoot pressurization system malfunctions	87
L427 Remove or replace electrical system equipment, such as batteries, generator control panels, units, or TRs	87
G203 Perform aircraft ground handling, towing, or parking operations	80
S780 Perform operational checks on thrust reverser systems	80
P653 Perform operational checks on nosewheel steering systems	73
E112 Complete trip reports of staff summary sheets	73
P645 Operate nosewheel steering system	73
P669 Remove or replace aircraft wheel assemblies	73
S793 Remove or replace power plant system components	73
M517 Remove or replace anti-ice system components	73
M516 Remove or replace air-conditioning system components	67
R725 Remove or replace hydraulic system components	67
M519 Remove or replace environmental bleed-air system components	67
G217 Remove or replace access doors, cowlings, fairings, inspection plates, panels or windows	67
J312 Perform operational checks on APU or GTC fuel systems	60
M524 Remove or replace oxygen system components	60
E114 Coordinate enroute base support with ground agencies	53
F174 Pick up or turn in coffee jugs, water jugs or ovens	53

TABLE VIII

GROUP ID NUMBER AND TITLE: GP0039, C-130 FLIGHT ENGINEERS
 GROUP SIZE: 229 PERCENT OF SAMPLE: 21%
 PREDOMINANT GRADE(S): E-6/E-7/E-8 AVERAGE TICF: 93 MONTHS
 AVERAGE TAFMS: 166 MONTHS

THE FOLLOWING ARE IN DESCENDING ORDER BY PERCENT MEMBERS PERFORMING:

<u>REPRESENTATIVE TASKS</u>	<u>PERCENT MEMBERS PERFORMING</u>
F161 Perform preflight inspections of aircraft panels, locks, or fasteners	97
H237 Compute takeoff and landing data (TOLD)	96
G184 Apply external AC or DC power to aircraft	96
T811 Monitor propeller anti-ice or deice loadmeter operations	93
T814 Monitor propeller negative torque system operations	93
S762 Monitor TD system operations	91
O579 Monitor fuel consumption	88
S769 Operate power plant oil cooler doors	87
O603 Perform preflight inspections of external fuel tanks	86
T822 Perform operational checks on propeller feathering systems	86
S746 Analyze temperature datum (TD) system malfunctions	86
L393 Analyze instrument system malfunctions	85
T816 Operate propeller anti-ice or deice loadmeters	82
T809 Analyze propeller negative torque system malfunctions	82
S744 Analyze power plant oil cooler door system malfunctions	80
I263 Operate normal cargo door or ramp systems	78
L401 Operate electric ATMs	76
L417 Perform preflight inspections of electric ATMs	76
I246 Analyze cargo door or ramp system malfunctions	76
J327 Troubleshoot APU or GTC fuel system malfunctions	74
L408 Perform operational checks on electric ATMs	73
H235 Compute maximum endurance or holding data	71
O591 Operate fuel flow or transfer systems	70
N544 Analyze trim tab system malfunctions	68
N567 Troubleshoot trim tab system malfunctions	66
S778 Perform operational checks on power plant oil cooler door	64
I269 Perform operational checks on door warning systems	63
J322 Prime APU or GTC oil systems	59
I253 Monitor ADS operations	53
J321 Prime APU or GTC fuel systems	50

TABLE IX

GROUP ID NUMBER AND TITLE: ST0003, SUPERVISORY FLIGHT ENGINEERS
 GROUP SIZE: 7 PERCENT OF SAMPLE: 1%
 PREDOMINANT GRADE(S): E-6/E-5 AVERAGE TICF: 83 MONTHS
 AVERAGE TAFMS: 153 MONTHS

THE FOLLOWING ARE IN DESCENDING ORDER BY PERCENT MEMBERS PERFORMING:

<u>REPRESENTATIVE TASKS</u>	<u>PERCENT MEMBERS PERFORMING</u>
B46 Supervise Flight Engineer Specialists (AFSC 11350C)	86
B25 Coordinate maintenance requirements with crew chiefs	86
A14 Plan or prepare briefings	86
D83 Conduct OJT	71
D82 Conduct job proficiency training	71
B28 Direct crewmembers or passengers during emergency procedures	71
A16 Schedule personnel for TDY assignments, leaves, or passes	71
B44 Interpret policies, directives, or procedures for subordinates	71
B45 Supervise Apprentice Flight Engineer Specialists (AFSC 11330C)	71
D86 Counsel trainees on training progress	71
B27 Counsel personnel on personal or military-related problems	71
A4 Determine or establish work priorities	71
B30 Direct inflight inspections of aircraft	57
C75 Write EPRs	57
B29 Direct evaluations of aircraft performance or systems performance data	57
B32 Direct maintenance of administrative files	57
E117 Maintain current status of flight manuals, safety and operational supplements, and flightcrew checklists	57
E106 Compile information for records, reports, or logs	57
D77 Administer or score tests	57
D81 Conduct classroom training	57
E126 Monitor flightcrew information files (FCICs)	57
D85 Conduct requalification or transition training	57
B41 Implement safety or security programs	57
F134 Fasten seats, seat belts, or shoulder harnesses	43
E112 Complete trip reports or staff summary sheets	43
F133 Fasten cargo nets or tiedown straps	43
F140 Load or offload crew gear	43

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APPENDIX B

LISTING OF TASK MODULES AND TASK STATEMENTS

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

The title of each TM is our best estimate as to the generic subject 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 APU/GTC Systems Monitoring

- 1 J297 Monitor APU or GTC bleed air system operations
- 2 J298 Monitor APU or GTC electrical system operations
- 3 J299 Monitor APU or GTC fire extinguishing system operations
- 4 J303 Operate APU or GTC bleed air systems
- 5 J304 Operate APU or GTC electrical systems
- 6 J315 Perform preflight inspections of APU or GTC bleed air systems
- 7 J316 Perform preflight inspections of APU or GTC electrical systems
- 8 J317 Perform preflight inspections of APU or GTC fire extinguishing systems

0002 LDG Components Preflight Inspection

- 1 P655 Perform preflight inspections of LDG brake or antiskid systems
- 2 P659 Perform preflight inspections of LDG doors
- 3 P665 Perform preflight inspections of LDG tires
- 4 P666 Perform preflight inspections of LDG wheel assemblies

0003 Electrical Components Preflight Inspection

- 1 L416 Perform preflight inspections of batteries or battery relays
- 2 L419 Perform preflight inspections of electrical power systems
- 3 L422 Perform preflight inspections of interior or exterior lighting systems
- 4 L425 Perform preflight inspections of wiring, circuit breakers, or control panels

0004 Lighting/Acft Pressurization Sys Monitoring

- 1 L 98 Monitor instrument system operations
- 2 L399 Monitor interior or exterior lighting system operations
- 3 L405 Operate interior or exterior lighting systems
- 4 M448 Monitor anti-ice systems
- 5 M454 Monitor environmental fire or overheat detection system operations
- 6 M459 Monitor manual aircraft pressurization systems
- 7 M460 Monitor oxygen systems
- 8 M475 Operate manual aircraft pressurization systems
- 9 M476 Operate oxygen systems

0005 Mission Planning Computations

- 1 H226 Complete range computations
- 2 H229 Compute aircraft performance data for nonstandard configurations
- 3 H235 Compute maximum endurance or holding data
- 4 H239 Compute time, distance, or fuel using performance data formulas and charts
- 5 H240 Determine engine power requirements using time, speed, and distance formulas and charts
- 6 H241 Determine fuel consumption using time, speed, and distance formulas and charts

0006 Emergency Procedures Functions

- 1 V870 Perform, practice, or simulate APU or GTC fire emergency procedures
- 2 V872 Perform, practice, or simulate cabin fire procedures
- 3 V874 Perform, practice, or simulate electrical fire procedures, other than cabin fires
- 4 V875 Perform, practice, or simulate electrical system malfunction emergency procedures
- 5 V877 Perform, practice, or simulate engine fire, severe damage, or separation emergency procedures
- 6 V878 Perform, practice, or simulate engine ground fire emergency procedures
- 7 V879 Perform, practice, or simulate fuel flow system emergency procedures
- 8 V880 Perform, practice, or simulate hydraulic system emergency procedures
- 9 V881 Perform, practice, or simulate in-flight door warning emergency procedures
- 10 V882 Perform, practice, or simulate LDG emergency extension procedures
- 11 V883 Perform, practice, or simulate LDG wheel brake emergency procedures
- 12 V886 Perform, practice, or simulate rapid aircraft depressurization emergency procedures
- 13 V887 Perform, practice, or simulate rapid descent procedures
- 14 V888 Perform, practice, or simulate single-engine failure emergency procedures
- 15 V889 Perform, practice, or simulate smoke elimination procedures
- 16 V890 Perform, practice, or simulate thrust reverser failure emergency procedures
- 17 V891 Perform, practice, or simulate total engine failure emergency procedures
- 18 V892 Perform, practice, or simulate wing flap or slat malfunction emergency procedures
- 19 V893 Recommend corrective action for ground emergency conditions
- 20 V894 Recommend corrective action for inflight emergency conditions
- 21 V895 Report emergency conditions

0007 Anti-ice/Deice/Heating Sys Operations/Monitoring

- 1 M450 Monitor deice systems
- 2 M461 Monitor underfloor heating systems
- 3 M465 Operate anti-ice systems
- 4 M478 Operate underfloor heating systems

0008 LDG Systems Preflight Inspection

- 1 P660 Perform preflight inspections of LDG emergency systems
- 2 P662 Perform preflight inspections of LDG normal systems
- 3 P663 Perform preflight inspections of LDG position indicating systems
- 4 P667 Perform preflight inspections of nosewheel steering systems

0009 Brake Systems Monitoring

- 1 P629 Monitor brake antiskid system operations
- 2 P630 Monitor brake pressures
- 3 P635 Monitor LDG position indicators
- 4 P636 Monitor LDG system normal extensions or retractions

0010 Power Plant Components Monitoring

- 1 S749 Monitor power plant compressor section operations
- 2 S750 Monitor power plant control operations
- 3 S753 Monitor power plant fire or overheat detection system operations
- 4 S756 Monitor power plant ignition system operations

0011 Air Refueling Systems Activities

- 1 H227 Compute air refueling data
- 2 O578 Monitor air refueling system operations
- 3 O588 Operate air refueling systems
- 4 O602 Perform preflight inspections of air refueling systems

0012 Thrust Reverser/Temperature Monitoring

- 1 O584 Monitor fuel temperature conditions
- 2 S 51 Monitor power plant exhaust temperatures (EGTs)
- 3 S759 Monitor power plant thrust reversing system operations
- 4 S763 Monitor thrust reverser system operations

0013 Cargo Door/Ramp Systems Operations

- 1 I254 Monitor cargo door or ramp system operations
- 2 I255 Monitor door warning system operations
- 3 I263 Operate normal cargo door or ramp systems
- 4 I275 Perform preflight inspections of cargo doors, ramps, or latches
- 5 I276 Perform preflight inspections of door or ramp warning systems

0014 Environmental Systems Malfunction Analyses

- 1 L392 Analyze electrical system malfunctions, other than for interior or exterior lighting systems
- 2 L393 Analyze instrument system malfunctions
- 3 L394 Analyze interior or exterior lighting system malfunctions
- 4 M433 Analyze air-conditioning system malfunctions
- 5 M434 Analyze anti-ice system malfunctions
- 6 M435 Analyze deice system malfunctions
- 7 M437 Analyze environmental bleed-air system malfunctions
- 8 M439 Analyze environmental fire or overheat detection system malfunctions
- 9 M441 Analyze oxygen system malfunctions
- 10 M442 Analyze pressurization system malfunctions
- 11 M444 Analyze underfloor heating system malfunctions
- 12 M446 Analyze windshield heat system malfunctions
- 13 R704 Analyze hydraulic system malfunctions

0015 APU/GTC Systems Malfunction Analyses

- 1 J291 Analyze APU or GTC bleed air system malfunctions
- 2 J292 Analyze APU or GTC electrical system malfunctions
- 3 J293 Analyze APU or GTC fire detection system malfunctions
- 4 J294 Analyze APU or GTC fuel system malfunctions
- 5 J296 Analyze APU or GTC oil system malfunctions

0016 Environmental Systems Troubleshooting

- 1 M526 Troubleshoot air-conditioning system malfunctions
- 2 M527 Troubleshoot anti-ice system malfunctions
- 3 M530 Troubleshoot environmental bleed-air system malfunctions
- 4 M535 Troubleshoot pressurization system malfunctions

0017 Power Plant Systems Troubleshooting

- 1 S796 Troubleshoot power plant bleed-air system malfunctions
- 2 S797 Troubleshoot power plant control system malfunctions
- 3 S799 Troubleshoot power plant fire or overheat detection system malfunctions
- 4 S801 Troubleshoot power plant fuel system malfunctions
- 5 S802 Troubleshoot power plant ignition system malfunctions
- 6 S804 Troubleshoot power plant starter system malfunctions

0018 Power Plant Systems Malfunction Analyses

- 1 S737 Analyze power plant bleed-air system malfunctions
- 2 S738 Analyze power plant control system malfunctions
- 3 S739 Analyze power plant fire extinguishing system malfunctions
- 4 S740 Analyze power plant fire or overheat detection system malfunctions
- 5 S742 Analyze power plant fuel system malfunctions
- 6 S743 Analyze power plant ignition system malfunctions
- 7 S745 Analyze power plant starter system malfunctions

0019 LDG Systems Malfunction Analyses

- 1 P618 Analyze LDG brake or antiskid system malfunctions
- 2 P622 Analyze LDG position indicating system malfunctions
- 3 P623 Analyze LDG system malfunctions
- 4 P626 Analyze nosewheel steering system malfunctions

0020 Cargo Door/Ramp Systems Analyses/Troubleshooting

- 1 I246 Analyze cargo door or ramp system malfunctions
- 2 I247 Analyze door warning system malfunctions
- 3 I286 Troubleshoot cargo door or ramp system malfunctions
- 4 I287 Troubleshoot door warning system malfunctions

0021 Environmental Systems Operational Checks (I)

- 1 J309 Perform operational checks on APU or GTC bleed air systems
- 2 J310 Perform operational checks on APU or GTC electrical systems
- 3 J311 Perform operational checks on APU or GTC fire detection systems
- 4 K359 Perform operational checks on cockpit voice recorders
- 5 L407 Perform operational checks on batteries or battery relays
- 6 L410 Perform operational checks on electrical power systems
- 7 L413 Perform operational checks on interior or exterior lighting systems
- 8 L414 Perform operational checks on pitot heat
- 9 M482 Perform operational checks on air-conditioning systems
- 10 M483 Perform operational checks on anti-ice systems
- 11 M488 Perform operational checks on environmental bleed-air systems
- 12 M494 Perform operational checks on oxygen systems
- 13 R716 Perform operational checks on hydraulic systems to include emergency systems

0022 Fuel Dump Systems Operations

- 1 O580 Monitor fuel dump system operations
- 2 O585 Monitor nonstandard fuel system configurations
- 3 O590 Operate fuel dump systems
- 4 O591 Perform fuel system operation cold weather procedures

0023 Directing and Coordinating

- 1 B25 Coordinate maintenance requirements with crew chiefs
- 2 B28 Direct crewmembers or passengers during emergency procedures
- 3 B30 Direct inflight inspections of aircraft
- 4 B36 Direct preflight or postflight inspections of aircraft
- 5 B37 Direct refueling or defueling operations

0024 Files and Log Maintenance

- 1 E117 Maintain current status of flight manuals, safety and operational supplements, and flightcrew checklists
- 2 E123 Make entries on airframe usage logs
- 3 E124 Make entries on engine conditioning monitoring logs
- 4 E126 Monitor flightcrew information files (FCIFs)

0025 Emergency Power Generator Operations

- 1 L397 Monitor emergency power generator system operations
- 2 L403 Operate emergency power generators
- 3 L411 Perform operational checks on emergency electrical power generators
- 4 L420 Perform preflight inspections of emergency electrical power generators

0026 Environmental Systems Operational Checks (II)

- 1 M485 Perform operational checks on deice systems
- 2 M490 Perform operational checks on environmental fire or overheat detection systems
- 3 M495 Perform operational checks on pressurization systems
- 4 M496 Perform operational checks on underfloor heating systems

0027 APU/GTC Fuel/Oil Systems Operations

- 1 J300 Monitor APU or GTC fuel system operations
- 2 J302 Monitor APU or GTC oil system operations
- 3 J305 Operate APU or GTC fire extinguishing systems
- 4 J306 Operate APU or GTC fuel systems
- 5 J308 Operate APU or GTC oil systems
- 6 J312 Perform operational checks on APU or GTC fuel systems
- 7 J314 Perform operational checks on APU or GTC oil systems
- 8 J318 Perform preflight inspections of APU or GTC fuel systems
- 9 J320 Perform preflight inspections of APU or GTC oil systems
- 10 J326 Troubleshoot APU or GTC fire detection system malfunctions
- 11 J327 Troubleshoot APU or GTC fuel system malfunctions
- 12 J329 Troubleshoot APU or GTC oil system malfunctions

0028 TR/Instrument Systems Operations

- 1 L404 Operate instrument systems
- 2 L406 Operate TR system operations
- 3 L412 Perform operational checks on instrument systems
- 4 L415 Perform operational checks on TRs

0029 General Aircraft Servicing

- 1 F155 Perform fireguard duties
- 2 G201 Operate nonpowered AGE
- 3 G202 Operate powered AGE
- 4 G211 Position powered or nonpowered AGE
- 5 G214 Remove airframe or engine covers
- 6 O609 Service fuel systems
- 7 P627 Chock aircraft tires
- 8 R728 Service hydraulic system reservoirs
- 9 S794 Service power plant oil systems

0030 Radar Systems Operations

- 1 K344 Monitor radar system operations
- 2 K355 Operate radar equipment
- 3 K366 Perform operational checks on radar systems
- 4 K375 Perform preflight inspections of radar equipment

0031 Trim Tab Systems Operations

- 1 N544 Analyze trim tab system malfunctions
- 2 N550 Monitor trim tab system operations
- 3 N556 Perform operational checks on trim tab system
- 4 N562 Perform preflight inspections of trim tab systems
- 5 N567 Troubleshoot trim tab system malfunctions

0032 Flight Control Systems Monitoring

- 1 N545 Monitor AFCS or autopilot system operations
- 2 N546 Monitor flight control position instrument systems
- 3 N547 Monitor PFCS operations
- 4 N548 Monitor SFCS operations
- 5 N549 Monitor trim system operations

0033 Power Plant Operations

- 1 S735 Adjust power plant controls during flight
- 2 S764 Operate power plant control systems
- 3 S768 Operate power plant ignition systems
- 4 S782 Perform power plant starts, runups, or shutdowns

0034 Navigation Equipment Operations

- 1 K342 Monitor navigation equipment, other than radar
- 2 K353 Operate navigation equipment, other than radar
- 3 K365 Perform operational checks on navigation systems, other than radar
- 4 K374 Perform preflight inspections of navigation equipment, other than radar

0035 Communications/Navigation Equipment Repair

- 1 L426 Remove or replace electrical components, such as switch cards, relays, or fuses
- 2 L427 Remove or replace electrical system equipment, such as batteries, generator control panels, units, or TRs
- 3 L428 Remove or replace instrument system equipment, such as instrument indicators or transmitters
- 4 L429 Remove or replace interior or exterior lighting system components

0036 Aerospace Ground Equipment (AGE) Servicing

- 1 G185 Chock aerospace ground equipment (AGE)
- 2 G190 Identify powered AGE malfunctions
- 3 G191 Inspect nonpowered AGE for operating condition or serviceability
- 4 G192 Inspect powered AGE for operating condition or serviceability
- 5 G199 Monitor powered AGE

0037 Radar/Navigation Systems Troubleshooting

- 1 K333 Analyze navigation system malfunctions, other than radar
- 2 K334 Analyze radar system malfunctions
- 3 K387 Troubleshoot navigation system malfunctions, other than radar
- 4 K388 Troubleshoot radar system malfunctions

0038 Rain Removal Equipment Operations

- 1 M477 Operate rain removal equipment
- 2 M512 Perform preflight inspections of rain removal equipment
- 3 M529 Troubleshoot electronic cooling system malfunctions
- 4 M536 Troubleshoot rain removal equipment malfunctions

0039 APU/GTC Hydraulic Systems Operations

- 1 J295 Analyze APU or GTC hydraulic system malfunctions
- 2 J301 Monitor APU or GTC hydraulic system operations
- 3 J307 Operate APU or GTC hydraulic systems
- 4 J313 Perform operational checks on APU or GTC hydraulic systems
- 5 J319 Perform preflight inspections of APU or GTC hydraulic systems
- 6 J323 Service APU or GTC systems
- 7 J328 Troubleshoot APU or GTC hydraulic system malfunctions

0040 Ventilating Systems Operations

- 1 M462 Monitor ventilating systems
- 2 M479 Operate ventilating systems
- 3 M514 Perform preflight inspections of ventilating systems
- 4 M538 Troubleshoot ventilating system malfunctions

0041 Electronic Cooling Systems Operations

- 1 M451 Monitor draw-through cooling systems
- 2 M456 Monitor forced-air cooling systems
- 3 M457 Monitor hydraulic cooling systems
- 4 M469 Operate electronic cooling systems
- 5 M487 Perform operational checks on electronic cooling systems
- 6 M503 Perform preflight inspections of electronic cooling systems

0042 Environmental Fire Protection Systems Operation

- 1 M455 Monitor environmental fire suppression system operations
- 2 M471 Operate environmental fire extinguishing systems
- 3 M489 Perform operational checks on environmental fire extinguishing systems
- 4 M491 Perform operational checks on environmental fire suppression systems
- 5 M505 Perform preflight inspections of environmental fire extinguishing equipment
- 6 M507 Perform preflight inspections of environmental fire suppression bottles
- 7 M531 Troubleshoot environmental fire extinguishing system malfunctions
- 8 M533 Troubleshoot environmental fire suppression system malfunctions

0043 Power Plant Systems Operational Checks

- 1 S771 Perform operational checks on EPR or torque indicating systems, such as reverse thrust limiter systems
- 2 S772 Perform operational checks on power plant control systems
- 3 S773 Perform operational checks on power plant fire extinguishing systems
- 4 S774 Perform operational checks on power plant fire or overheat detection systems
- 5 S776 Perform operational checks on power plant fuel systems
- 6 S777 Perform operational checks on power plant ignition systems
- 7 S780 Perform operational checks on thrust reverser systems

0044 Pneudraulic Systems Operations

- 1 R705 Analyze pneudraulic system malfunctions
- 2 R710 Monitor pneudraulic system operations to include emergency system operations
- 3 R714 Operate pneudraulic systems to include emergency system operations
- 4 R717 Perform operational checks on pneudraulic systems to include emergency systems
- 5 R732 Troubleshoot pneudraulic system malfunctions
- 6 V884 Perform, practice, or simulate pneudraulic system emergency procedures

0045 Cargo Handling

- 1 F133 Fasten cargo nets or tiedown straps
- 2 F138 Load or offload cargo using systems other than winch systems
- 3 F139 Load or offload cargo using winch systems
- 4 F141 Load or offload litters
- 5 F142 Load or offload personnel
- 6 F143 Load or offload special equipment
- 7 F163 Perform preflight inspections of cargo
- 8 F176 Prepare aircraft for cargo loading or offloading
- 9 F177 Prepare cargo for loading or offloading
- 10 F 178 Release cargo nets or tiedown straps

0046 Aircraft Performance Evaluation

- 1 B29 Direct evaluations of aircraft performance or systems performance data
- 2 C55 Evaluate aircraft performance data
- 3 E119 Maintain local forms, records, or regulations
- 4 E121 Maintain technical order (TO) files or other technical publication files

0047 First-Line Supervision

- 1 B19 Brief unit commander on status of flight engineer activities, other than training
- 2 B21 Conduct supervisory orientations of newly assigned personnel
- 3 B27 Counsel personnel on personal or military-related problems
- 4 B45 Supervise Apprentice Flight Engineer Specialists (AFSC 11330C)
- 5 B46 Supervise Flight Engineer Specialists (AFSC 11350C)
- 6 B48 Supervise Flight Engineer Technicians (AFSC 11370C)
- 7 C75 Write EPRs

0048 Work Scheduling

- 1 A4 Determine or establish work priorities
- 2 A6 Develop flight scheduling methods
- 3 A14 Plan or prepare briefings
- 4 A15 Plan or schedule work assignments or priorities
- 5 A16 Schedule personnel for temporary duty (TDY) assignments, leaves, or passes
- 6 B22 Coordinate crew assignments with flight scheduling

0049 Upper Management

- 1 A9 Establish organizational policies
- 2 A12 Establish work methods, control, or inspection procedures
- 3 B20 Conduct meetings, such as staff meetings, symposiums, conferences, or workshops
- 4 B40 Implement quality control procedures
- 5 B44 Interpret policies, directives, or procedures for subordinates
- 6 C53 Correct discrepancies or contradictions in procedures reported by crewmembers
- 7 C58 Evaluate discrepancies or contradictions in procedures reported by crewmembers
- 8 C62 Evaluate operational readiness of crewmembers or aircraft
- 9 C63 Evaluate personnel for compliance with performance standards
- 10 C76 Write staff studies, surveys, or special reports, other than training reports
- 11 E112 Complete trip reports or staff summary sheets

0050 Training

- 1 A5 Develop aircrew flight manuals or directives
- 2 A10 Establish performance standards
- 3 D77 Administer or score tests
- 4 D80 Brief unit personnel on training matters
- 5 D81 Conduct classroom training

0050 Training (Continued)

- 6 D82 Conduct job proficiency training
- 7 D83 Conduct OJT
- 8 D84 Conduct refresher, tactical, or special mission training
- 9 D85 Conduct requalification or transition training
- 10 D86 Counsel trainees on training progress
- 11 D87 Determine training requirements
- 12 D89 Direct training programs
- 13 D90 Establish or maintain study guides or reference files
- 14 D91 Establish training standards
- 15 D92 Evaluate progress of trainees
- 16 D93 Evaluate training methods, techniques, or programs
- 17 D95 Maintain training records, charts, graphs, aids, devices, or files
- 18 D98 Plan or schedule training, such as OJT or proficiency training
- 19 D99 Prepare lesson plans
- 20 D100 Procure training aids, devices, space, or equipment
- 21 D104 Write test questions
- 22 D105 Write training reports

0051 General Administrative Management

- 1 A7 Develop organizational or functional charts
- 2 B32 Direct maintenance of administrative files
- 3 B33 Direct maintenance of equipment, supplies, or workspace
- 4 B34 Direct maintenance of status boards, graphs, or charts

0052 T.O./Publications/Forms Management

- 1 A11 Establish publication libraries
- 2 B35 Direct maintenance of technical order (TO) files
- 3 C73 Review compliance with aircraft operation and movement regulations
- 4 C74 Review maintenance reports
- 5 E118 Maintain flight evaluation forms (FEFs)

0053 Air Turbine Motor (ATM) Operations

- 1 L395 Monitor electric air turbine motor (ATM) system operations
- 2 L401 Operate electric ATMs
- 3 L408 Perform operational checks on electric ATMs
- 4 L417 Perform preflight inspections of electric ATMs

0054 Power Plant/Propeller Systems Operations

- 1 O603 Perform preflight inspections of external fuel tanks
- 2 S744 Analyze power plant oil cooler door system malfunctions
- 3 S746 Analyze temperature datum (TD) system malfunctions
- 4 S758 Monitor power plant oil cooler door operations
- 5 S762 Monitor TD system operations
- 6 S769 Operate power plant oil cooler doors
- 7 S770 Operate TD systems
- 8 S778 Perform operational checks on power plant oil cooler door
- 9 S779 Perform operational checks on TD systems
- 10 S790 Perform preflight inspections of power plant oil cooler doors
- 11 S792 Position TD systems
- 12 S803 Troubleshoot power plant oil cooler door system malfunctions
- 13 S805 Troubleshoot TD system malfunctions
- 14 T807 Analyze propeller anti-ice or deice system malfunctions
- 15 T808 Analyze propeller electronic governor system malfunctions
- 16 T809 Analyze propeller negative torque system malfunctions
- 17 T810 Analyze propeller pitchlock system malfunctions
- 18 T811 Monitor propeller anti-ice or deice loadmeter operations
- 19 T812 Monitor propeller anti-ice or deice system operations
- 20 T813 Monitor propeller electronic governor system operations
- 21 T814 Monitor propeller negative torque system operations
- 22 T815 Monitor propeller pitchlock system operations
- 23 T816 Operate propeller anti-ice or deice loadmeters
- 24 T817 Operate propeller anti-ice or deice systems
- 25 T818 Operate propeller electronic governor systems
- 26 T819 Operate propeller negative torque systems

0054 Power Plant/Propeller Systems Operations (Continued)

- 27 T820 Perform operational checks on propeller anti-ice or deice systems
- 28 T821 Perform operational checks on propeller electronic governor systems
- 29 T822 Perform operational checks on propeller feathering systems
- 30 T823 Perform operational checks on propeller negative torque systems
- 31 T824 Perform operational checks on propeller pitchlock systems
- 32 T825 Perform operational checks on propeller system controls
- 33 T827 Troubleshoot propeller anti-ice or deice system malfunctions
- 34 T828 Troubleshoot propeller electronic governor system malfunctions
- 35 T829 Troubleshoot propeller negative torque system malfunctions
- 36 T830 Troubleshoot propeller pitchlock system malfunctions
- 37 V885 Perform, practice, or simulate propeller failure procedures

0055 Aerial Delivery Systems (ADS) Operations

- 1 I245 Analyze aerial delivery system (ADS) malfunctions
- 2 I253 Monitor ADS operations
- 3 I260 Operate ADSs
- 4 I285 Troubleshoot ADS malfunctions

0056 Exit Spoiler/Air Deflector Systems Operations

- 1 I248 Analyze exit spoiler or air deflector system malfunctions
- 2 I256 Monitor exit spoiler or air deflector system operations
- 3 I261 Operate exit spoiler or air deflector systems
- 4 I270 Perform operational checks on exit spoiler or air deflector system
- 5 I277 Perform preflight inspections of exit spoiler or air deflector system
- 6 I288 Troubleshoot exit spoiler or air deflector system malfunctions

0057 Special Missions Operations

- 1 U851 Perform insertion or extraction operations
- 2 U854 Perform night vision goggle operations
- 3 U855 Perform operational checks on special mission equipment
- 4 U864 Perform special operation low-level (SOLL) operations
- 5 U868 Reconfigure aircraft for special missions
- 6 U869 Remove or replace special mission equipment components

0058 Passenger Handling

- 1 B31 Direct loading or offloading of cargo
- 2 F130 Brief passengers on flight mission
- 3 F132 Demonstrate use of life preservers, parachutes, or oxygen masks to passengers
- 4 F181 Review passenger manifests

0059 Non-Electronic Cooling Systems Operations

- 1 M468 Operate draw-through cooling systems
- 2 M472 Operate forced-air cooling systems
- 3 M486 Perform operational checks on draw-through cooling systems
- 4 M492 Perform operational checks on forced-air cooling systems
- 5 M502 Perform preflight inspections of draw-through cooling systems
- 6 M508 Perform preflight inspections of forced-air cooling systems

0060 Wing Pressurization Systems Operations

- 1 O575 Analyze wing pressurization system malfunctions
- 2 O587 Monitor wing pressurization system operations
- 3 O594 Operate wing pressurization systems
- 4 O601 Perform operational checks on wing pressurization systems
- 5 O607 Perform preflight inspections of wing pressurization systems
- 6 O616 Troubleshoot wing pressurization system malfunctions

0061 MADAR Systems Analyses (I)

- 1 Q683 Analyze (MADARS) malfunctions
- 2 Q687 Perform MADARS engine vibration analyses
- 3 Q688 Perform MADARS environmental system analyses
- 4 Q689 Perform MADARS flight control system analyses
- 5 Q690 Perform MADARS flight instrument system analyses
- 6 Q691 Perform MADARS hydraulic system analyses
- 7 Q692 Perform MADARS landing gear system analyses
- 8 Q693 Perform MADARS mechanical system analyses
- 9 Q695 Perform MADARS propulsion power plant system analyses
- 10 Q701 Troubleshoot MADARS malfunctions

0062 LDG Castering/Kneeling Systems Troubleshooting

- 1 P619 Analyze LDG castering system malfunctions
- 2 P621 Analyze LDG kneeling system malfunctions
- 3 P675 Troubleshoot LDG castering system malfunctions
- 4 P677 Troubleshoot LDG kneeling system malfunctions

0063 MADAR Systems Analyses (II)

- 1 Q685 Perform MADARS communication system analyses
- 2 Q686 Perform MADARS electronic system analyses
- 3 Q694 Perform MADARS navigation system analyses
- 4 Q696 Perform MADARS radar system analyses

0064 Fuel Inerting Systems Operations

- 1 O572 Analyze fuel inerting system malfunctions
- 2 O582 Monitor fuel inerting system operations
- 3 O592 Operate fuel inerting systems
- 4 O599 Perform operational checks on fuel inerting systems
- 5 O605 Perform preflight inspections of fuel inerting systems
- 6 O613 Troubleshoot fuel inerting system malfunctions

0065 LDG Crosswind Systems Operations

- 1 P620 Analyze LDG crosswind system malfunctions
- 2 P633 Monitor LDG crosswind system operations
- 3 P657 Perform preflight inspections of LDG crosswind systems
- 4 P676 Troubleshoot LDG crosswind system malfunctions

0066 Environmental Systems Component Replacement

- 1 M516 Remove or replace air-conditioning system components
- 2 M517 Remove or replace anti-ice system components
- 3 M518 Remove or replace deice system components
- 4 M519 Remove or replace environmental bleed-air system components
- 5 M520 Remove or replace environmental fire extinguishing system components
- 6 M521 Remove or replace environmental fire or overheat detection system components
- 7 M522 Remove or replace environmental fire suppression system components
- 8 M523 Remove or replace heating or ventilating system components
- 9 M524 Remove or replace oxygen system components

0067 Center Gear Systems Operations

- 1 P617 Analyze center-gear system malfunctions
- 2 P631 Monitor center-gear system operations
- 3 P639 Operate center-gear systems
- 4 P646 Perform operational checks on center-gear systems
- 5 P654 Perform preflight inspections of center-gear systems

0068 AFSATCOM Systems Operations

- 1 K330 Analyze Air Force satellite communication (AFSATCOM) or secure communications system malfunctions
- 2 K337 Monitor AFSATCOM or secure communications system operations
- 3 K349 Operate AFSATCOM or secure communications system equipment

0068 AFSATCOM Systems Operations (Continued)

- 4 K358 Perform operational checks on AFSATCOM or secure communications system equipment
- 5 K367 Perform preflight inspections of AFSATCOM or secure communications systems equipment
- 6 K377 Program AFSATCOM or secure communications systems equipment

0069 Quality Assurance

- 1 C59 Evaluate inspection report findings
- 2 C67 Evaluate quality assurance procedures
- 3 C68 Evaluate safety or security programs
- 4 C69 Evaluate suggestions

0070 Weapons Systems Operations

- 1 I250 Analyze weapon system malfunctions
- 2 I258 Monitor weapon systems operations
- 3 I265 Operate weapon systems
- 4 I272 Perform operational checks on weapon systems
- 5 I279 Perform preflight inspections of weapon systems
- 6 I290 Troubleshoot weapon system malfunctions

0071 VC-137 Ground Servicing

- 1 G186 Connect or disconnect portable hydraulic test stands to or from aircraft
- 2 G196 Jack or level aircraft
- 3 G197 Launch or recover aircraft
- 4 G215 Remove or install aircraft external fuel tanks
- 5 G216 Remove or install aircraft pods
- 6 G223 Service powered AGE
- 7 G224 Take joint oil analysis program (JOAP) samples

0072 Pyrotechnics Handling

- 1 U831 Arm or dearm pyrotechnics, such as illumination, smoke, and decoy flares or chaffs
- 2 U832 Arm or dearm weapon systems
- 3 U833 Deploy pyrotechnics
- 4 U857 Perform preflight inspections of ammunition or pyrotechnics

0073 LDG Tilt Systems Operations

- 1 P624 Analyze LDG tilt system malfunctions
- 2 P637 Monitor LDG tilt system operations
- 3 P644 Operate LDG tilt systems
- 4 P652 Perform operational checks on LDG tilt systems
- 5 P664 Perform preflight inspections of LDG tilt systems
- 6 P680 Troubleshoot LDG tilt system malfunctions

0074 Rotodome Drive Mechanism Operations

- 1 R707 Analyze rotodome drive mechanism malfunctions
- 2 R711 Monitor rotodome drive mechanism system operations
- 3 R715 Operate rotodome drive mechanisms
- 4 R719 Perform operational checks on rotodome drive mechanisms
- 5 R724 Perform preflight inspections of rotodome drive mechanisms
- 6 R734 Troubleshoot rotodome drive mechanism malfunctions

0075 Cartridge Start Systems Operations

- 1 R703 Analyze cartridge start system malfunctions
- 2 R708 Monitor cartridge start system operations
- 3 R712 Operate cartridge start systems
- 4 R720 Perform preflight inspections of cartridge start systems
- 5 R730 Troubleshoot cartridge start system malfunctions

0076 Trailing Wire Antenna (TWA) Drogue Sys Operations

- 1 K335 Analyze trailing wire antenna (TWA) drogue system malfunctions
- 2 K346 Monitor TWA drogue system operations
- 3 K376 Perform preflight inspections of TWA drogue systems
- 4 K389 Troubleshoot TWA drogue system malfunctions

0077 Tasks Not Referenced

- 1 A1 Assign personnel to duty positions
- 2 A2 Assign sponsors for incoming personnel
- 3 A3 Determine logistics requirements, such as space, personnel, equipment, or supplies
- 4 A8 Draft budget requirements
- 5 A13 Plan layouts of facilities
- 6 A17 Write contingency plans
- 7 A18 Write job descriptions
- 8 B23 Coordinate flight operations with ramp coordinators
- 9 B24 Coordinate life support, fleet service, or security requirements with supporting agencies
- 10 B26 Coordinate supply requests with supply activities
- 11 B38 Direct submission of operational hazard reports (OHRs) or unsatisfactory reports (URs)
- 12 B39 Implement cost-reduction programs
- 13 B41 Implement safety or security programs
- 14 B42 Implement suggestion programs
- 15 B43 Interpret layout drawings or blueprints
- 16 B47 Supervise Flight Engineer Superintendents (AFSC 11399)
- 17 B49 Supervise military personnel with AFSCs other than AFSC 113X0C
- 18 C50 Analyze workload requirements
- 19 C51 Complete USAF Graduate Evaluation Program forms and questionnaires
- 20 C52 Conduct staff assistance visits
- 21 C54 Evaluate aircraft engineering change proposals (ECPs)
- 22 C56 Evaluate budget requirements
- 23 C57 Evaluate contractor developed programs
- 24 C60 Evaluate job descriptions
- 25 C61 Evaluate maintenance of workspace, equipment, or supplies

0077 Tasks Not Referenced (Continued)

- 26 C64 Evaluate personnel for promotion, demotion, or reclassification
- 27 C65 Evaluate procedures for inventory, storage, or inspection of property items
- 28 C66 Evaluate proposed maintenance repairs or minor modifications
- 29 C70 Evaluate work schedules
- 30 C71 Indorse enlisted performance reports (EPRs)
- 31 C72 Investigate accidents or incidents
- 32 D78 Assign course instructors
- 33 D79 Assign on-the-job training (OJT) trainers
- 34 D88 Develop resident course or career development course (CDC) curriculum materials
- 35 D94 Maintain training equipment
- 36 D96 Operate simulators or air training devices (ATDs)
- 37 D97 Participate in life-support training seminars
- 38 D101 Select individuals for specialized training
- 39 D102 Verify CDC completions
- 40 D103 Write job qualification standards (JQSs)
- 41 E106 Compile information for records, reports, or logs
- 42 E107 Complete activity reports
- 43 E108 Complete equipment authorization lists (EALs)
- 44 E109 Complete ground safety reports or occupational hazard reports (OHRs)
- 45 E110 Complete man-hour accounting forms
- 46 E111 Complete requisitions for aircraft parts or equipment
- 47 E113 Complete work orders
- 48 E114 Coordinate enroute base support with ground agencies
- 49 E115 Inventory equipment, tools, or supplies
- 50 E116 Maintain administrative files
- 51 E120 Maintain personnel rosters
- 52 E122 Make entries on airframe fatigue logs
- 53 E125 Make entries on structural analysis forms
- 54 F127 Brief aircraft commander on aircraft weight and balance status
- 55 F128 Brief aircraft commander or crew on premission status of aircraft
- 56 F129 Brief aircraft commander or maintenance personnel on aircraft system malfunctions
- 57 F131 Compute aircraft center-of-gravity
- 58 F134 Fasten seats, seat belts, or shoulder harnesses
- 59 F135 Fire weapons for qualification
- 60 F136 Inspect ramp areas for foreign object damage (FOD)
- 61 F137 Interpret marshaling signals

0077 Tasks Not Referenced (Continued)

- 62 F140 Load or offload crew gear
- 63 F144 Open or close crew entrance doors
- 64 F145 Operate emergency equipment, such as parachutes, oxygen bottles, fire extinguishers, first-aid kits, crash axes, or ropes
- 65 F146 Operate emergency escape hatches
- 66 F147 Operate flightline motor vehicles
- 67 F148 Operate galley equipment, such as ovens or coffee makers
- 68 F149 Participate in crew operation debriefings
- 69 F150 Participate in maintenance debriefings
- 70 F151 Participate in preflight or postflight intelligence briefings
- 71 F152 Participate in premission briefings
- 72 F153 Participate in weather briefings
- 73 F154 Perform aircrew scanning duties
- 74 F156 Perform functional checkflight (FCF) duties
- 75 F157 Perform high altitude procedures in altitude chambers
- 76 F158 Perform marshaling duties
- 77 F159 Perform preflight inspections of aircraft for chocking
- 78 F160 Perform preflight inspections of aircraft for fluid leakage
- 79 F161 Perform preflight inspections of aircraft panels, locks, or fasteners
- 80 F162 Perform preflight inspections of aircraft structures for erosion, corrosion, damage, or cracks
- 81 F164 Perform preflight inspections of cockpit or cabin compartments
- 82 F165 Perform preflight inspections of crew relief areas
- 83 F166 Perform preflight inspections of emergency equipment, such as parachutes, oxygen bottles, crash axes, or fire extinguishers
- 84 F167 Perform preflight inspections of emergency exit systems
- 85 F168 Perform preflight inspections of life support, survival, or personal equipment
- 86 F169 Perform preflight inspections of liferaft release mechanisms
- 87 F170 Perform preflight inspections of seats, seat belts, or shoulder harnesses
- 88 F171 Perform wing walking duties
- 89 F172 Pick up flight lunches
- 90 F173 Pick up or turn in aircraft life support equipment
- 91 F174 Pick up or turn in coffee jugs, water jugs, or ovens
- 92 F175 Position emergency equipment, such as parachutes, oxygen bottles, fire extinguishers, first-aid kits, crash axes, or ropes
- 93 F179 Request aircrew transportation
- 94 F180 Review aircraft data documentation forms (AFTO Forms 781 series)

0077 Tasks Not Referenced (Continued)

- 95 F182 Secure equipment for descent or landing
- 96 F183 Verify safety pins and streamers are removed prior to flight or installed after flight
- 97 G184 Apply external alternating current (AC) or direct current (DC) power to aircraft
- 98 G187 Direct aircraft towing or parking operations
- 99 G188 Drain fuel sumps
- 100 G189 Ground aircraft
- 101 G193 Inspect specialized support equipment, other than AGE, for serviceability
- 102 G194 Interpret wiring or system schematic diagrams
- 103 G195 Inventory composite tool kits (CTKs)
- 104 G198 Maintain handtools
- 105 G200 Moor aircraft
- 106 G203 Perform aircraft ground handling, towing, or parking operations
- 107 G204 Perform aircraft pretransfer or post-transfer inspections
- 108 G205 Perform hot refueling or defueling operations
- 109 G206 Perform in-flight inspections of aircraft
- 110 G207 Perform over-the-wing refueling or defueling operations
- 111 G208 Perform single-point refueling or defueling operations
- 112 G209 Perform special maintenance inspections
- 113 G210 Perform thru-flight or postflight inspections of aircraft
- 114 G212 Reference illustrated parts breakdown (IPB) manuals
- 115 G213 Reference technical orders (TO) or aircraft maintenance manuals
- 116 G217 Remove or replace access doors, cowlings, fairings, inspection plates, panels, or windows
- 117 G218 Remove or replace airframe tubing or hoses
- 118 G219 Remove or replace powered AGE components
- 119 G220 Remove or replace structural hardware, such as bolts, fasteners, or screws
- 120 G221 Select maintenance brevity codes for AFTO Forms 781 (AFORM Aircrew/Mission Flight Data Document)
- 121 G222 Service flightline motor vehicles
- 122 H225 Complete performance planning worksheets
- 123 H228 Compute aircraft emergency performance data
- 124 H230 Compute aircraft weight and balance data using aircraft installed computers
- 125 H231 Compute aircraft weight and balance data using charts, load adjusters, or calculators
- 126 H232 Compute airdrop data

0077 Tasks Not Referenced (Continued)

- 127 H233 Compute climb, cruise or descent data
- 128 H234 Compute flight payloads or offloads
- 129 H236 Compute present position coordinates
- 130 H237 Compute takeoff and landing data (TOLD)
- 131 H238 Compute time, distance, or fuel using CPU-26 A/P air navigation computers
- 132 H242 Interpret map symbology
- 133 H243 Program life history recorders
- 134 H244 Program stress recorders
- 135 I249 Analyze visor system malfunctions
- 136 I251 Analyze winch system malfunctions
- 137 I252 Install weapon systems
- 138 I257 Monitor visor system operations
- 139 I259 Monitor winch system operations
- 140 I262 Operate manual cargo door or ramp systems
- 141 I264 Operate visor systems
- 142 I266 Operate winch systems
- 143 I267 Perform operational checks on ADSs
- 144 I268 Perform operational checks on cargo door or ramp systems
- 145 I269 Perform operational checks on door warning systems
- 146 I271 Perform operational checks on visor systems
- 147 I273 Perform preflight inspections of ADSs
- 148 I274 Perform preflight inspections of airframe installed cargo handling equipment
- 149 I278 Perform preflight inspections of visor systems
- 150 I280 Remove or replace ADS components
- 151 I281 Remove or replace cargo door or ramp system components
- 152 I282 Remove or replace exit spoiler or air deflector system components
- 153 I283 Remove or replace visor system components
- 154 I284 Remove or replace weapon system components
- 155 I289 Troubleshoot visor system malfunctions
- 156 J321 Prime APU or GTC fuel systems
- 157 J322 Prime APU or GTC oil systems
- 158 J324 Troubleshoot APU or GTC bleed air system malfunctions
- 159 J325 Troubleshoot APU or GTC electrical system malfunctions
- 160 K331 Analyze communications system malfunctions, other than AFSATCOM or secure communications
- 161 K332 Analyze fuel savings advisory system (FSAS) malfunctions

0077 Tasks Not Referenced (Continued)

- 162 K336 Interpret terminal enroute procedures (TERPs)
- 163 K338 Monitor aircraft take-offs, departure, or arrival procedures
- 164 K339 Monitor communications systems, other than AFSATCOM or secure communications systems
- 165 K340 Monitor FSAS system operations
- 166 K341 Monitor interphone system operations
- 167 K343 Monitor public address (PA) system operations
- 168 K345 Monitor radios, such as frequency modulating (FM), high frequency (HF), ultrahigh frequency (UHF), or very high frequency (VHF)
- 169 K347 Monitor TWA electric power supply system air driven pumps (ADPs)
- 170 K348 Operate radios
- 171 K350 Operate communications systems equipment, other than AFSATCOM or secure communications systems equipment
- 172 K351 Operate FSAS equipment
- 173 K352 Operate interphone systems
- 174 K354 Operate PA systems
- 175 K356 Operate TWA drogues
- 176 K357 Operate TWA electric power supply system ADPs
- 177 K360 Perform operational checks on communication systems, other than AFSATCOM or secure communication systems
- 178 K361 Perform operational checks on crash data position indicator and recording (CDPIR) systems
- 179 K362 Perform operational checks on crash position indicators (CPIs)
- 180 K363 Perform operational checks on emergency locator transmitters (ELTs)
- 181 K364 Perform operational checks on FSASs
- 182 K368 Perform preflight inspections of CDPIR systems
- 183 K369 Perform preflight inspections of cockpit voice recorders
- 184 K370 Perform preflight inspections of communication systems equipment, other than AFSATCOM or secure communication systems
- 185 K371 Perform preflight inspections of CPIs
- 186 K372 Perform preflight inspections of ELTs
- 187 K373 Perform preflight inspections of FSAS equipment
- 188 K378 Program FSAS equipment
- 189 K379 Remove or replace AFSATCOM or secure communications systems components
- 190 K380 Remove or replace communication system components, other than AFSATCOM or secure communication systems

0077 Tasks Not Referenced (Continued)

- 191 K381 Remove or replace FSAS components
- 192 K382 Remove or replace navigation system components, other than radar
- 193 K383 Remove or replace radar system components
- 194 K384 Troubleshoot AFSATCOM or secure communications system malfunctions
- 195 K385 Troubleshoot communications system malfunctions, other than AFSATCOM or secure communication systems
- 196 K386 Troubleshoot FSAS malfunctions
- 197 K390 Update AFSATCOM or secure communication systems equipment
- 198 K391 Update FSAS equipment
- 199 L396 Monitor electrical systems, other than interior or exterior lighting systems
- 200 L400 Monitor transformer rectifier (TR) system operations
- 201 L402 Operate electrical systems, other than interior or exterior lighting systems
- 202 L409 Perform operational checks on electrical inverter systems
- 203 L418 Perform preflight inspections of electrical inverter systems
- 204 L421 Perform preflight inspections of instrument systems
- 205 L423 Perform preflight inspections of pitot probes, temperature probes, or instrument system static ports
- 206 L424 Perform preflight inspections of TRs
- 207 L430 Troubleshoot electrical system malfunctions, other than interior or exterior lighting systems
- 208 L431 Troubleshoot instrument system malfunctions
- 209 L432 Troubleshoot interior or exterior lighting system malfunctions
- 210 M436 Analyze electronic cooling system malfunctions
- 211 M438 Analyze environmental fire extinguishing system malfunctions
- 212 M440 Analyze environmental fire suppression system malfunctions
- 213 M443 Analyze rain removal equipment malfunctions
- 214 M445 Analyze ventilating system malfunctions
- 215 M447 Monitor air-conditioning systems
- 216 M449 Monitor automatic aircraft pressurization systems
- 217 M452 Monitor electronic cooling systems
- 218 M453 Monitor environmental bleed-air systems
- 219 M458 Monitor liquid cooling systems
- 220 M463 Monitor windshield heat systems
- 221 M464 Operate air-conditioning systems
- 222 M466 Operate automatic aircraft pressurization systems
- 223 M467 Operate deice systems
- 224 M470 Operate environmental bleed-air systems

0077 Tasks Not Referenced (Continued)

- 225 M473 Operate hydraulic cooling systems
- 226 M474 Operate liquid cooling systems
- 227 M480 Operate windshield heat systems
- 228 M481 Operate windshield wipers
- 229 M484 Perform operational checks on cabin heater systems
- 230 M493 Perform operational checks on liquid cooling systems
- 231 M497 Perform operational checks on windshield heat systems
- 232 M498 Perform preflight inspections of air-conditioning systems
- 233 M499 Perform preflight inspections of anti-ice systems
- 234 M500 Perform preflight inspections of cabin heater systems
- 235 M501 Perform preflight inspections of deice systems
- 236 M504 Perform preflight inspections of environmental bleed-air systems
- 237 M506 Perform preflight inspections of environmental fire or overheat detection systems
- 238 M509 Perform preflight inspections of liquid cooling systems
- 239 M510 Perform preflight inspections of oxygen systems
- 240 M511 Perform preflight inspections of pressurization systems
- 241 M513 Perform preflight inspections of underfloor heating systems
- 242 M515 Perform preflight inspections of windshield heat systems
- 243 M525 Service windshield washer or rain removal fluids
- 244 M528 Troubleshoot deice system malfunctions
- 245 M532 Troubleshoot environmental fire or overheat detection system malfunctions
- 246 M534 Troubleshoot oxygen system malfunctions
- 247 M537 Troubleshoot underfloor heating system malfunctions
- 248 M539 Troubleshoot windshield heat system malfunctions
- 249 N540 Analyze automatic flight control system (AFCS) or autopilot system malfunctions
- 250 N541 Analyze primary flight control system (PFCS) malfunctions
- 251 N542 Analyze secondary flight control system (SFCS) malfunctions
- 252 N543 Analyze trim system malfunctions
- 253 N551 Perform operational checks on AFCS or autopilot systems
- 254 N552 Perform operational checks on PFCSs
- 255 N553 Perform operational checks on SFCSs
- 256 N554 Perform operational checks on speed brake control system
- 257 N555 Perform operational checks on trim systems
- 258 N557 Perform operational checks on wing spoiler system
- 259 N558 Perform preflight inspections of AFCS or autopilot systems
- 260 N559 Perform preflight inspections of PFCSs

0077 Tasks Not Referenced (Continued)

- 261 N560 Perform preflight inspections of SFCSs
- 262 N561 Perform preflight inspections of trim systems
- 263 N563 Troubleshoot AFCS or autopilot system malfunctions
- 264 N564 Troubleshoot PFCS malfunctions
- 265 N565 Troubleshoot SFCS malfunctions
- 266 N566 Troubleshoot trim system malfunctions
- 267 O568 Adjust fuel density settings
- 268 O569 Analyze air refueling system malfunctions
- 269 O570 Analyze fuel dump system malfunctions
- 270 O571 Analyze fuel flow system malfunctions
- 271 O573 Analyze fuel transfer system malfunctions
- 272 O574 Analyze refueling system malfunctions, other than air refueling system malfunctions
- 273 O576 Inspect fuel for contaminants
- 274 O577 Inspect fuel tank level and cap security
- 275 O579 Monitor fuel consumption
- 276 O581 Monitor fuel flow or transfer system operations
- 277 O583 Monitor fuel logs
- 278 O586 Monitor refueling systems operation, other than air refueling system operations
- 279 O589 Operate air-to-air recovery systems
- 280 O591 Operate fuel flow or transfer systems
- 281 O593 Operate refueling systems, other than air refueling systems
- 282 O596 Perform operational checks on air refueling systems
- 283 O597 Perform operational checks on fuel dump systems
- 284 O598 Perform operational checks on fuel flow or transfer systems
- 285 O600 Perform operational checks on refueling systems, other than air refueling systems
- 286 O604 Perform preflight inspections of fuel dump systems
- 287 O606 Perform preflight inspections of refueling systems, other than air refueling systems
- 288 O608 Remove or replace fuel system components
- 289 O610 Troubleshoot air refueling system malfunctions
- 290 O611 Troubleshoot fuel dump system malfunctions
- 291 O612 Troubleshoot fuel flow system malfunctions
- 292 O614 Troubleshoot fuel transfer system malfunctions
- 293 O615 Troubleshoot refueling system malfunctions, other than air refueling system malfunctions

0077 Tasks Not Referenced (Continued)

- 294 P625 Analyze LDG wheel assembly malfunctions
- 295 P628 Install brake deactivation kits
- 296 P632 Monitor LDG castering system operations
- 297 P634 Monitor LDG kneeling system operations
- 298 P638 Monitor nosewheel steering system operations
- 299 P640 Operate LDG castering systems
- 300 P641 Operate LDG crosswind systems
- 301 P642 Operate LDG emergency system extensions
- 302 P643 Operate LDG kneeling systems
- 303 P645 Operate nosewheel steering system
- 304 P647 Perform operational checks on LDG brake or antiskid systems
- 305 P648 Perform operational checks on LDG castering systems
- 306 P649 Perform operational checks on LDG crosswind systems
- 307 P650 Perform operational checks on LDG kneeling systems
- 308 P651 Perform operational checks on LDG normal systems
- 309 P653 Perform operational checks on nosewheel steering systems
- 310 P656 Perform preflight inspections of LDG castering systems
- 311 P658 Perform preflight inspections of LDG cylinders or snubbers
- 312 P661 Perform preflight inspections of LDG kneeling systems
- 313 P668 Remove or replace aircraft brake assemblies
- 314 P669 Remove or replace aircraft wheel assemblies
- 315 P670 Remove or replace LDG system components, such as switch cards, relays, doors, or
tires
- 316 P671 Service aircraft brake systems
- 317 P672 Service aircraft shock struts
- 318 P673 Service aircraft tires
- 319 P674 Troubleshoot body-gear system malfunctions
- 320 P678 Troubleshoot LDG position indicating system malfunctions
- 321 P679 Troubleshoot LDG system malfunctions
- 322 P681 Troubleshoot LDG wheel assembly malfunctions
- 323 P682 Troubleshoot nosewheel steering system malfunctions
- 324 Q684 Monitor MADARS operations
- 325 Q697 Perform operational checks on MADARSs
- 326 Q698 Perform preflight inspections of MADARSs
- 327 Q699 Program MADARSs
- 328 Q700 Remove or replace MADARS components
- 329 Q702 Update MADARSs

0077 Tasks Not Referenced (Continued)

- 330 R706 Analyze ram air turbine (RAT) system malfunctions
- 331 R709 Monitor hydraulic system operations to include emergency system operations
- 332 R713 Operate hydraulic systems to include emergency system operations
- 333 R718 Perform operational checks on RAT systems
- 334 R721 Perform preflight inspections of hydraulic systems to include emergency systems
- 335 R722 Perform preflight inspections of pneudraulic systems or accumulators to include emergency systems
- 336 R723 Perform preflight inspections of RAT systems
- 337 R725 Remove or replace hydraulic system components
- 338 R726 Remove or replace pneudraulic system components
- 339 R727 Service accumulator systems
- 340 R729 Service pneudraulic systems
- 341 R731 Troubleshoot hydraulic system malfunctions
- 342 R733 Troubleshoot RAT system malfunctions
- 343 S736 Analyze engine pressure ratio (EPR) or torque indicating system, such as reverse thrust limiter system malfunctions
- 344 S741 Analyze power plant fire suppression system malfunctions
- 345 S747 Analyze thrust reverser malfunctions
- 346 S748 Monitor EPR or torque indicating system, such as reverse thrust limiter systems operations
- 347 S752 Monitor power plant fire extinguishing systems
- 348 S754 Monitor power plant fire suppression systems
- 349 S755 Monitor power plant fuel systems
- 350 S757 Monitor power plant instrument systems
- 351 S760 Monitor power plant turbine section operations (TITs)
- 352 S761 Monitor power plant vibration indicators
- 353 S765 Operate power plant fire extinguishing systems
- 354 S766 Operate power plant fire suppression systems
- 355 S767 Operate power plant fuel systems
- 356 S775 Perform operational checks on power plant fire suppression systems
- 357 S781 Perform power plant engine analysis log checks
- 358 S783 Perform preflight inspections of power plant air intakes
- 359 S784 Perform preflight inspections of power plant controls, such as cables or throttle levers
- 360 S785 Perform preflight inspections of power plant cowlings
- 361 S786 Perform preflight inspections of power plant exhaust sections

0077 Tasks Not Referenced (Continued)

- 362 S787 Perform preflight inspections of power plant fire extinguishing systems
- 363 S788 Perform preflight inspections of power plant fire or overheat detection systems
- 364 S789 Perform preflight inspections of power plant fire suppression bottles
- 365 S791 Perform preflight inspections of thrust reverser systems
- 366 S793 Remove or replace power plant system components
- 367 S795 Troubleshoot EPR or torque indicating systems, such as reverse thrust limiter system malfunctions
- 368 S798 Troubleshoot power plant fire extinguishing system malfunctions
- 369 S800 Troubleshoot power plant fire suppression system malfunctions
- 370 S806 Troubleshoot thrust reverser malfunctions
- 371 T826 Service propeller oil systems
- 372 U834 Deploy rescue equipment
- 373 U835 Determine landing zone factors (high/low reconnaissance)
- 374 U836 Jettison assisted take-off (ATO) units
- 375 U837 Load or offload ammunition or pyrotechnics
- 376 U838 Load or offload ATO units
- 377 U839 Monitor air-to-air recovery systems
- 378 U840 Monitor ATO units
- 379 U841 Monitor inflight tracking equipment
- 380 U842 Monitor infrared countermeasure equipment
- 381 U843 Monitor projected map displays
- 382 U844 Operate ATO units
- 383 U845 Operate in-flight tracking equipment
- 384 U846 Operate infrared countermeasure equipment
- 385 U847 Operate projected map displays
- 386 U848 Perform atmospheric sampling operations
- 387 U849 Perform flight tests for new flight procedures or equipment validations
- 388 U850 Perform hurricane or typhoon penetration operations
- 389 U852 Perform low altitude parachute extraction system (LAPES) operations
- 390 U853 Perform mid-air retrieval system (MARS) operations
- 391 U856 Perform paradrop operations
- 392 U858 Perform preflight inspections of ATO units
- 393 U859 Perform preflight inspections of overhead delivery systems (ODSs)

0077 Tasks Not Referenced (Continued)

- 394 U860 Perform range support operations
- 395 U861 Perform remote site landings or take-offs
- 396 U862 Perform search and rescue (SAR) operations
- 397 U863 Perform simulated combat operations
- 398 U865 Perform static line or high altitude low opening (HALO) paradrop procedures
- 399 U866 Perform water operations
- 400 U867 Perform water sampling operations
- 401 V871 Perform, practice, or simulate bailout procedures
- 402 V873 Perform, practice, or simulate ditching procedures
- 403 V876 Perform, practice, or simulate emergency driftdown procedures