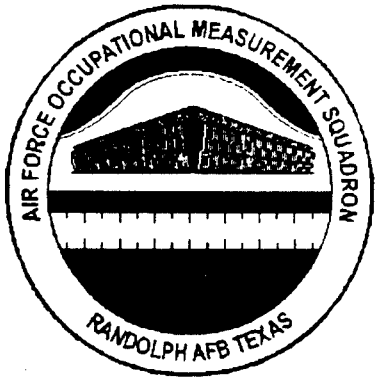

UNITED STATES
AIR FORCE

OCCUPATIONAL SURVEY REPORT

FLIGHT ENGINEER (HELICOPTER QUALIFIED)

AFSC 1A1X1B

AFPT 90-113-014

MARCH 1995

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

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PREFACE

This report presents the results of an Air Force Occupational Survey of the AFSC 1A1X1B, Flight Engineer (Helicopter Qualified) career ladder. 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.

First Lieutenant Shannen Karpel, Inventory Development Specialist, developed the survey instrument; Mr. Daniel Dreher, Occupational Analyst, analyzed the data and wrote the final report. Mr. Wayne Fruge provided computer programming support, and Ms. Linda McDonald provided administrative support. Major Randall C. Agee, Chief, Airman Analysis Section, Occupational Analysis Flight, Air Force Occupational Measurement Squadron (AFOMS), reviewed and approved this report for release.

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

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SUMMARY OF RESULTS

1. *Survey Coverage*: The AFSC 1A1X1B career ladder was surveyed to obtain current job and task data. Results are based on data from 134 of the 276 eligible members of the career ladder.

2. *Specialty Jobs*: Survey data show there are three flight engineer jobs in the career ladder: Entry-level Flight Engineer, H-1 Flight Engineer, and H-53/H-60 Flight Engineer. While H-53 and H-60 Flight Engineers perform many of the same tasks as H-1 Flight Engineers, they are distinguished by tasks related to the airframes and missions performed.

3. *Career Ladder Progression*: Even though Helicopter Flight Engineers of all skill levels perform many common aircrew functions, they demonstrate a somewhat typical career ladder progression. Members holding the 3- and 5-skill levels perform essentially the same flight engineer job, while 7-skill level members have additional supervisory and training responsibilities. The most senior personnel manage the overall career ladder and its training programs.

4. *Training Analysis*: Both the Specialty Training Standard (STS) and entry-level Plan of Instruction (POI) were reviewed. Only one STS entry, dealing with using alternate tracking equipment, was not supported by survey data. While most of the learning objectives in the POI deal with understanding principles of operation and identifying system components, the last block of instruction is performance based and is well supported by survey data.

5. *Job Satisfaction*: Overall, Helicopter Flight Engineer satisfaction indicators are higher than those of members of nonlateral enlisted aircrew specialties surveyed in 1993. Indicators have remained stable over the last 6 years. A lower percentage of entry-level engineers find their job interesting and feel their training is well used. It is interesting to note higher percentages of H-53 and H-60 Flight Engineers feel their training is well used and plan to reenlist than seen for H-1 Flight Engineers. This may be due to more challenging missions of the H-53 and H-60 helicopters.

6. *Implications*: The present classification structure, as described by the AFMAN 36-2108 *Specialty Descriptions*, accurately portrays the jobs in this study. Analysis of career ladder documents indicates both the STS and POI are well supported by OSR data. There are, however, some tasks not matched to the STS that should be reviewed to determine if their inclusion in future revisions is warranted. Overall, job satisfaction responses were higher than those of a comparative sample of enlisted aircrew personnel surveyed in 1993. Entry-level personnel do not find their job as interesting as more senior Flight Engineers.

OCCUPATIONAL SURVEY REPORT (OSR)
FLIGHT ENGINEER (HELICOPTER QUALIFIED)
(AFSC 1A1X1B)

INTRODUCTION

This is a report of an occupational survey of the Flight Engineer (Helicopter Qualified) career ladder conducted by the Occupational Analysis Flight, Air Force Occupational Measurement Squadron (AFOMS). The survey was conducted to update the currency of occupational survey data for this career ladder. The last OSR for this career ladder was published in November 1988.

Background

As described in the AFMAN 36-2108 *Specialty Descriptions*, 3- and 5-skill level members perform visual inspections and operate and monitor engine and aircraft control systems, panels, and indicators. The also perform other related flight crew duties. Seven-skill level members perform the same duties, but make performance computations and supervise lower skill level Flight Engineers. The most senior members remain current in flight engineer duties, as well as managing the career ladder and conducting qualification training.

Helicopter Flight Engineers cross-train into the specialty from the Refueling, Loadmaster, Missile and Space Systems, Aerospace Maintenance, or Propulsion career ladders. Cross trainees must hold the 5- or 7-skill level in their prior specialty before applying for the Flight Engineer specialty. If accepted, they must complete the 3-week long Basic Helicopter Flight Engineer course taught at Kirtland AFB NM, which introduces students to aerodynamic factors of aircraft performance, calculator operations and computations, takeoff and landing data, fuel consumption, performance limitations, and weight and balance computations.

A Utilization and Training Workshop was held for the career ladder in October 1993 where a Career Field Education and Training Plan (CFETP) was drafted which included a revised STS. The draft of this document and the POI were reviewed using current survey data.

SURVEY METHODOLOGY

Inventory Development

The data collection instrument for this occupational survey was Air Force Job Inventory (JI) Air Force Personnel Test (AFPT) 90-113-014, dated June 1993. A tentative task list was prepared after reviewing current career ladder training documents, the previous AFSC 113X0B/C OSR, and prior task list. Since the previous survey included both fixed wing and helicopter Flight Engineers, the developer for this project created a preliminary task list that included only tasks which apply to helicopters. This preliminary task list was refined and validated through interviews with 25 AFSC 1A1X1B subject-matter experts (SMEs) at the following units:

UNIT
542 Operations Group, Kirtland AFB NM
1 Helicopter Squadron, Andrews AFB MD
20 Special Operations Squadron, Hurlburt Field FL
55 Special Operations Squadron, Hurlburt Field FL

The resulting JI contains 591 tasks grouped under 21 duty headings. There is also a background section that requests information on paygrade, job title, time in present job, time in service, job satisfaction, organizational level, types of missions flown, and airframe on which respondents were qualified.

Survey Administration

From August through December 1993, Military Personnel Flights at operational bases administered the inventory to eligible AFSC 1A1X1B personnel. Members eligible for the survey consisted of all assigned Flight Engineers, except personnel in transition for a permanent change of station, any personnel retiring during the time inventories were administered to the field, or personnel in their jobs less than 6 weeks. Participants were selected from a computer-generated mailing list obtained from Headquarters Air Force Military Personnel Center, Randolph AFB TX.

Respondents were first asked to fill in an identification and biographical information section and answer a number of background questions. They were then instructed to go through the booklet and put a check mark beside each task they perform in their current job. When they completed this, they were asked to go back and rate the time they spend performing each task checked using a 9-point scale. The time-spent scale ranged from 1 (a very small amount time spent) to 9 (a very large amount spent).

The computer calculated the relative percent time each respondent spent performing tasks by first totaling the ratings of all tasks marked, dividing the rating of each task by this total, and multiplying the result by 100. Percent time spent ratings from all respondents were combined and used with percent members performing values to describe various groups in the career ladder.

Survey Sample

Personnel were selected to participate in this survey to ensure an accurate representation across major commands (MAJCOMs) and paygrades. Table 1 reflects the MAJCOM distribution of AFSC 1A1X1B personnel, while Table 2 shows the paygrade distribution. The latest MAJCOM restructuring occurred after the survey was mailed. At the time of the survey, Kirtland AFB belonged to what was then MAC, and now it is an AETC base. This explains why no one was assigned to AETC, yet 5 percent of the sample reported being assigned to an AETC base. The other differences are also a result of the MAJCOM restructuring. Even with these minor variations, the survey sample appears satisfactorily representative of the Flight Engineer career ladder.

TABLE 1

MAJCOM DISTRIBUTION OF SAMPLE

COMMAND	PERCENT OF ASSIGNED	PERCENT OF SAMPLE
AFSOC	37%	34%
AMC	35%	24%
ACC	15%	23%
AFMC	6%	9%
PACAF	5%	5%
USAFE	2%	*
AETC	0	5%

Total Assigned	319
Total Eligible For Survey	276
Total in Sample	134
Percent of Assigned in Sample	42%
Percent of Surveyed in Sample	49%

* Denotes less than 1 percent

TABLE 2

PAYGRADE DISTRIBUTION OF SAMPLE

PAYGRADE	PERCENT OF ASSIGNED	PERCENT OF SAMPLE
E-4	25%	20%
E-5	35%	39%
E-6	22%	24%
E-7	15%	14%
E-8	2%	2%
E-9	1%	1%

Task Factor Administration

Job descriptions alone do not provide sufficient data for making decisions about career ladder documents or training programs. Task factor information is needed for a complete analysis of the career ladder. To obtain the needed task factor data, selected senior AFSC 1A1X1B personnel (generally E-6 or E-7 technicians) also completed a training emphasis (TE) or task difficulty (TD) booklet. These booklets were processed separately from the JIs, and TE and TD data, where applicable, were used when analyzing other issues in this report.

Training Emphasis (TE). TE is defined as the degree of emphasis that should be placed on each task for structured training of first-job personnel. Structured training is defined as training provided by resident technical schools, field training detachments, mobile training teams, formal on-the-job training (OJT), or any other organized training method. Nineteen experienced NCOs rated tasks in the inventory on a 10-point scale ranging from 0 (not important to train) to 9 (extremely important to train). Overall agreement among the raters was acceptable. The average TE rating for AFSC 1A1X1B was 3.82, with a standard deviation of 1.81. Tasks with a TE rating of 5.63 or greater are considered to have high TE.

Task Difficulty (TD). TD is defined as the amount of time needed to learn to perform each task satisfactorily. Twenty-two experienced AFSC 1A1X1B NCOs rated the difficulty of the tasks in the inventory using a 9-point scale ranging from 1 (easy to learn) to 9 (very difficult to learn). Interrater agreement for these 22 raters was also acceptable. TD ratings are normally adjusted so tasks of average difficulty have a value of 5.00, and a standard deviation of 1.00. Any task with a TD rating of 6.00 or above is considered difficult to learn.

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

SPECIALTY JOBS
(Career Ladder Structure)

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

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

Overview of Specialty Jobs

Based on the analysis of tasks performed and the amount of time spent performing, the three jobs listed below and shown in Figure 1 were identified in the career ladder. Members of all three jobs perform many common tasks dealing with flight controls, engine controls and instruments, doors, inspections, and hoist systems. The H-53/H-60 Flight Engineer job was distinguished from the other two by the time members spend performing landing gear and weapons systems tasks associated with the airframes. The stage (STG) number shown beside each title is a clustering number assigned by CODAP, while the letter "N" stands for the number of respondents in each stage.

I. ENTRY-LEVEL FLIGHT ENGINEER JOB (STG007, N=12)

II. H-1 FLIGHT ENGINEER JOB (STG014, N=33)

III. H-53/H-60 FLIGHT ENGINEER JOB (STG012, N=82)

These three jobs account for 127 of the 134 respondents in the survey sample. The remaining seven performed tasks or had an emphasis on duties that did not allow them to be clustered with members of the defined jobs. These seven reported having the duty titles of NCOIC Flight Engineers, Group Standardization Evaluation, NCOIC Flight Engineer Section, Flight Examiner, and NCOIC H-53 Academics.

Group Descriptions

The following paragraphs contain brief descriptions of the three jobs identified through the career ladder structure analysis. Appendix A lists representative tasks performed by members with each job. Tables 3 displays time spent on duties, while Table 4 provides background information on members performing each job.

I. ENTRY-LEVEL FLIGHT ENGINEER JOB (STG007, N=12). There were 12 entry-level personnel who had a rather limited job, performing an average of only 139 tasks. They spent almost one-third of their duty time performing general aircrew activities, which included inspecting the aircraft, equipment, and structures before flight; computing weights and balances; and briefing aircrew members. They spent another 9 percent of their time monitoring engine performance instruments. Eleven of the twelve were qualified only on the H-1, 1 was H-53 qualified, and most were involved with either special airlift or survival school support missions. Entry-Level Flight Engineers were distinguished by the time they spent on the following tasks:

perform aircrew scanning duties
compute takeoff and landing data (TOLD)
brief aircrew commander on aircraft weight and balance status
perform preflight inspections of cockpit or cabin compartments
perform preflight inspections of aircraft panels, locks, or fasteners
perform preflight inspections of aircraft for fuel leakage
participate in crew operations debriefings

These are the most junior personnel in the career ladder, averaging only 37 months in the specialty. Seven are in paygrade E-4, one holds the 3-skill level, nine hold the 5-skill level, and two the 7-skill level. Ten reported they are Mission Flight Engineers.

II. H-1 FLIGHT ENGINEER JOB (STG014, N=33). Fifteen of the thirty-three AFSC 1A1X1B personnel performing this job are assigned to the 1st Helicopter Squadron at Andrews AFB, nine are assigned to test squadrons, three are in the 336th Crew Training Group, and the rest are in other CONUS helicopter squadrons. The H-1 Flight Engineer job entails all the airframe preflight inspection, briefing, and computation duties entry-level personnel perform, plus

an average of almost 100 more tasks. What distinguishes this job from the other two is the time members spent performing electrical or instrument system activities. This emphasis is clearly shown by the time members with the job spend performing the following tasks:

perform preflight inspections of power plant fire or overheat detection systems
perform preflight inspections of batteries or battery/relays
perform preflight inspections of interior or exterior lighting systems
analyze generator system malfunctions
perform preflight inspections of electrical inverter systems
perform preflight inspections of electrical power systems

H-1 Flight Engineers average 95 months in the career ladder, over half hold the 7-skill level, 64 percent report having supervisory responsibilities, and three quarters are in paygrades E-5 through E-7.

III. H-53/H-60 FLIGHT ENGINEER JOB (STG012, N=82). Thirty-nine of the eighty-two members with this job are assigned to special operations squadrons, 28 are assigned to rescue squadrons, and the remaining 14 are assigned to either a test squadron or the 542 TCHTS at Kirtland AFB. H-53 and H-60 Flight Engineers perform all the common airframe preflight inspection, briefing, and computation duties as members with the other two jobs, but are distinguished by the time they spend performing tasks related to operating rescue equipment, weapons, and inspecting landing gear systems. These tasks reflect the differences between H-1 and H-53/H-60 airframes and the special operations and rescue missions the two larger helicopters are used for. These Flight Engineers perform an average of 355 tasks, many more than members with either of the other 2 jobs. The differences between the job of these members and that of the other two groups can be clearly seen by the time H-53 and H-60 Flight Engineers spend on the following tasks:

perform night vision goggle operations
operate rescue hoist systems
perform remote site landings, hoverings, or take-offs
perform preflight inspections of rescue hoist systems
perform simulated combat operations
deploy rescue equipment
perform fast-rope operations
perform operational checks on rescue hoist systems

Over half of the H-53 and H-60 Flight Engineers hold the 5-skill level, 34 percent hold the 7-skill level, nearly half are in paygrade E-5, with smaller percentages in grades E-6 through E-9. Nineteen are assigned to overseas bases.

TABLE 3

AVERAGE PERCENT TIME SPENT ON DUTIES BY MEMBERS IN CAREER LADDER JOBS

DUTIES		ENTRY-LEVEL ENGINEERS (STG007)	H-1 ENGINEERS (STG014)	H-53/H-60 ENGINEERS (STG012)
A.	ORGANIZING AND PLANNING	*	2	1
B.	DIRECTING AND IMPLEMENTING	3	5	3
C.	INSPECTING AND EVALUATING	*	3	2
D.	TRAINING	2	4	2
E.	PERFORMING ADMINISTRATIVE ACTIVITIES	*	2	1
F.	PERFORMING GENERAL AIRCREW DUTIES	29	19	14
G.	PERFORMING GENERAL MAINTENANCE ACTIVITIES	6	4	3
H.	PERFORMING MISSION PLANNING AND PERFORMANCE DATA COMPUTATIONS	7	5	4
I.	PERFORMING AUXILIARY SYSTEM ACTIVITIES	5	4	6
J.	PERFORMING AUXILIARY POWER UNIT (APU) OR AUXILIARY POWER PLANT (APP) SYSTEM ACTIVITIES	*	0	5
K.	PERFORMING COMMUNICATION AND NAVIGATION SYSTEM ACTIVITIES	6	5	6
L.	PERFORMING ELECTRICAL AND INSTRUMENT SYSTEM ACTIVITIES	6	10	6
M.	PERFORMING ENVIRONMENTAL SYSTEM ACTIVITIES	2	5	5
N.	PERFORMING FLIGHT CONTROL SYSTEM ACTIVITIES	1	1	4
O.	PERFORMING FUEL SYSTEM ACTIVITIES	4	4	6
P.	PERFORMING LANDING GEAR (LDG) AND BRAKE SYSTEM ACTIVITIES	0	*	2
Q.	PERFORMING PNEUMATIC OR HYDRAULIC SYSTEM ACTIVITIES	*	2	3
R.	PERFORMING POWER PLANT OR ENGINE SYSTEM ACTIVITIES	9	11	9
S.	PERFORMING ROTOR, TRANSMISSION, OR DRIVE SYSTEM ACTIVITIES	3	3	2
T.	PERFORMING SPECIAL MISSION ACTIVITIES	7	4	8
U.	PERFORMING EMERGENCY PROCEDURE ACTIVITIES	7	5	4

* Denotes less than 1 percent

TABLE 4

BACKGROUND DATA ON MEMBERS OF SPECIALTY JOBS

	ENTRY-LEVEL ENGINEER (STG007)	H-1 ENGINEER (STG014)	H-53/H-60 ENGINEER (STG012)
NUMBER IN JOB	12	33	82
AVERAGE TASKS	139	233	355
DAFSC DISTRIBUTION			
1A131B	8%	12%	11%
1A151B	67%	30%	54%
1A171B	25%	52%	34%
1A190	0	6%	0
1A100	0	0	1%
PAYGRADE			
E-4	58%	19%	17%
E-5	33%	21%	48%
E-6	9%	27%	23%
E-7	0	27%	10%
E-8	0	6%	1%
E-9	0	0	1%
TIME IN CAREER FIELD	37 MOS	95 MOS	84 MOS
QUALIFICATION			
H-1	92%	97%	0
H-53	8%	0	41%
H-60	0	0	49%
H-3	0	3%	10%

CAREER LADDER PROGRESSION

Analysis of the work performed by members of the DAFSC groups is an important part of each occupational survey. This analysis identifies differences in tasks performed across the various skill levels, which in turn, may be used to evaluate how well career ladder documents, such as AFMAN 36-2108 *Specialty Descriptions* in Section B of the Career Field Education and Training Plan (CFETP) and the Specialty Training Standard (STS), reflect what career ladder personnel are actually doing in the field.

The distribution of skill-level personnel performing the career ladder jobs is displayed in Table 5, while the relative amount of time members of the skill-level groups spend on each duty is shown in Table 6. Because AFSC 1A1X1B personnel must maintain flying proficiency, members of all skill levels perform many common aircrew and flight engineer tasks. Similar percentages of members of all skill-level groups fly each of the helicopters. The only obvious distinguishing characteristic of the more senior personnel is their increased involvement in administrative, supervisory, and training functions.

Skill-Level Descriptions

DAFSC 1A131B. Nine of the fifteen 3-skill level members have the H-53 and H-60 Flight Engineer job, 4 have the H-1 Flight Engineer job, and 1 performs the Entry-Level job. One respondent did not group with the other jobs. He flew the H-3 helicopter, which is no longer in the inventory. Three-skill level members average 14 months in the career ladder. They perform an average of 250 tasks and spend 17 percent of their time performing general aircrew activities, 13 percent on power plant or engine system activities, 9 percent on electrical and instrument system activities, and smaller amounts of time on other duties (see Table 6). Representative tasks listed in Table 7 are a mixture of typical flight engineer tasks performed on the three helicopters, while some are specific only to the H-1 airframe.

DAFSC 1A151B. Sixty-three respondents reported holding the 5-skill level. They average 65 months in the career ladder. As shown in Table 5, most fly the H-53 and H-60 helicopters. While there is very little difference between the work done by 3- and 5-skill level members, as shown by the time spent on duties (see Table 5) and representative tasks listed in Table 8, a number of 5-skill level members reported having duty titles of Flight Examiner, Stan Eval Flight Engineer, or Instructor.

DAFSC 1A171B. The 51 7-skill level respondents spent most of their duty time performing common flight engineer tasks, but were distinguished by the time they spent on administrative, supervisory, and training tasks (see Table 6). Seven reported having the duty title of Superintendent, eight had the duty titles of Flight Examiner or Instructor, and six had the title of Stan Eval. Representative tasks performed, listed in Table 9, are nearly the same as those performed by more junior personnel. Tasks that best distinguish between 5- and 7-skill level members are listed in Table 10. Higher percentages of 7-skill level members perform the administrative and supervisory tasks listed in the bottom of the table.

TABLE 5

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

JOBS	1A131B (N=15)	1A151B (N=63)	1A171B (N=51)	1A190/00 (N=5)
ENTRY-LEVEL ENGINEER JOB	7%	13%	6%	0
H-I FLIGHT ENGINEER JOB	27%	16%	33%	40%
H-53/H-60 FLIGHT ENGINEER JOB	60%	70%	55%	20%
OTHER	6%	1%	6%	40%

TABLE 6

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

DUTIES		1A131B (N=15)	1A151B (N=63)	1A171B (N=51)	1A190/00 (N=5)
A.	ORGANIZING AND PLANNING	*	*	2	3
B.	DIRECTING AND IMPLEMENTING	2	3	4	6
C.	INSPECTING AND EVALUATING	1	1	3	5
D.	TRAINING	*	2	4	7
E.	PERFORMING ADMINISTRATIVE ACTIVITIES	1	1	1	2
F.	PERFORMING GENERAL AIRCREW ACTIVITIES	17	18	16	12
G.	PERFORMING GENERAL MAINTENANCE ACTIVITIES	3	4	4	3
H.	PERFORMING MISSION PLANNING AND PERFORMANCE DATA COMPUTATIONS	5	5	4	3
I.	PERFORMING AUXILIARY SYSTEM ACTIVITIES	4	6	5	1
J.	PERFORMING AUXILIARY POWER UNIT (APU) OR AUXILIARY POWER PLANT (APP) SYSTEM ACTIVITIES	3	3	3	3
K.	PERFORMING COMMUNICATION AND NAVIGATION SYSTEM ACTIVITIES	7	6	6	5
L.	PERFORMING ELECTRICAL AND INSTRUMENT SYSTEM ACTIVITIES	9	7	7	11
M.	PERFORMING ENVIRONMENTAL SYSTEM ACTIVITIES	4	5	5	6
N.	PERFORMING FLIGHT CONTROL SYSTEM ACTIVITIES	3	3	3	2
O.	PERFORMING FUEL SYSTEM ACTIVITIES	6	5	5	6
P.	PERFORMING LANDING GEAR (LDG) AND BRAKE SYSTEM ACTIVITIES	2	2	1	1
Q.	PERFORMING PNEUDRAULIC OR HYDRAULIC SYSTEM ACTIVITIES	3	2	3	3
R.	PERFORMING POWER PLANT OR ENGINE SYSTEM ACTIVITIES	13	9	9	11
S.	PERFORMING ROTOR, TRANSMISSION, OR DRIVE SYSTEM ACTIVITIES	3	2	2	2
T.	PERFORMING SPECIAL MISSION ACTIVITIES	7	8	6	2
U.	PERFORMING EMERGENCY PROCEDURE ACTIVITIES	5	5	5	3

* Denotes less than 1 percent

TABLE 7

REPRESENTATIVE TASKS PERFORMED BY
3-SKILL LEVEL FLIGHT ENGINEERS

TASKS		PERCENT MEMBERS PERFORMING (N=15)
F146	PERFORM AIRCREW SCANNING DUTIES	100
H224	COMPUTE TAKOFF AND LANDING DATA (TOLD)	100
R492	MONITOR ENGINE TORQUE INDICATING SYSTEMS OPERATIONS	100
K293	MONITOR INTERPHONE SYSTEM OPERATIONS	100
0420	MONITOR FUEL FLOW OR TRANSFER SYSTEM OPERATIONS	100
K297	MONITOR RADIOS, SUCH AS FREQUENCY MODULATION (FM), HIGH FREQUENCY (HF), ULTRA HIGH FREQUENCY (UHF), OR VERY HIGH FREQUENCY (VHF)	100
H156	PERFORM PREFLIGHT INSPECTIONS OF COCKPIT OR CABIN COMPARTMENTS	100
F153	PERFORM PREFLIGHT INSPECTIONS OF AIRCRAFT PANELS, LOCKS, OR FASTENERS	100
S528	PERFORM PREFLIGHT INSPECTIONS OF MAIN ROTOR OR TAIL ROTOR	100
0418	MONITOR FUEL CONSUMPTION	100
H219	COMPUTE AIRCRAFT WEIGHT AND BALANCE DATA USING CHARTS, LOAD ADJUSTERS, OR CALCULATORS	100
R518	PERFORM PREFLIGHT INSPECTIONS OF POWER PLANT COWLINGS	100
F123	BRIEF AIRCRAFT COMMANDER ON AIRCRAFT WEIGHT AND BALANCE STATUS	100
F154	PERFORM PREFLIGHT INSPECTIONS OF AIRCRAFT STRUCTURE FOR EROSION, CORROSION, DAMAGE, OR CRACKS	100
F160	PERFORM PREFLIGHT INSPECTIONS OF LIFE SUPPORT, SURVIVAL, OR PERSONAL EQUIPMENT	100
T546	PERFORM ALERT, COCKING, OR SCRAMBLING OPERATIONS	100
L348	PERFORM PREFLIGHT INSPECTIONS OF WIRING, CIRCUIT BREAKERS, OR CONTROL PANELS	100
L325	MONITOR INTERIOR OR EXTERIOR LIGHTING SYSTEM OPERATIONS	100
F141	PARTICIPATE IN CREW OPERATIONS DEBRIEFINGS	100
F158	PERFORM PREFLIGHT INSPECTIONS OF EMERGENCY EQUIPMENT, SUCH AS PARACHUTES, HEEDs, FIRE EXTINGUISHERS, OR LIFERAFTS	100
U590	RECOMMEND CORRECTIVE ACTION FOR IN-FLIGHT EMERGENCY CONDITIONS	100
U579	PERFORM, PRACTICE, OR SIMULATE ENGINE FIRE OR SEVERE DAMAGE EMERGENCY PROCEDURES	100
U586	PERFORM, PRACTICE, OR SIMULATE SINGLE ENGINE FAILURE EMERGENCY PROCEDURES	100
U582	PERFORM, PRACTICE, OR SIMULATE HYDRAULIC SYSTEM EMERGENCY PROCEDURES	100
F152	PERFORM PREFLIGHT INSPECTIONS OF AIRCRAFT FOR FLUID LEAKAGE	93
R500	MONITOR POWER PLANT INSTRUMENT SYSTEMS	93
S527	MONITOR TRANSMISSION OR DRIVE SYSTEM OPERATIONS	93
R519	PERFORM PREFLIGHT INSPECTIONS OF POWER PLANT EXHAUST SECTIONS	93
R522	PERFORM PREFLIGHT INSPECTIONS OF POWER PLANT OIL COOLER SYSTEMS	93
R516	PERFORM PREFLIGHT INSPECTIONS OF POWER PLANT AIR INTAKES	93
G203	PERFORM PREFLIGHT, THRU-FLIGHT, OR POSTFLIGHT INSPECTIONS OF AIRCRAFT	93
R497	MONITOR POWER PLANT FIRE OVERHEAT DETECTION SYSTEM OPERATIONS	93

TABLE 8

REPRESENTATIVE TASKS PERFORMED BY
5-SKILL LEVEL FLIGHT ENGINEERS

TASKS		PERCENT MEMBERS PERFORMING (N=63)
H224	COMPUTE TAKEOFF AND LANDING DATA (TOLD)	100
F153	PERFORM PREFLIGHT INSPECTIONS OF AIRCRAFT PANELS, LOCKS, OR FASTENERS	98
F141	PARTICIPATE IN CREW OPERATIONS BRIEFINGS	98
F152	PERFORM PREFLIGHT INSPECTIONS OF AIRCRAFT FOR FLUID LEAKAGE	98
H219	COMPUTE AIRCRAFT WEIGHT AND BALANCE DATA USING CHARTS, LOAD ADJUSTERS, OR CALCULATORS	98
F148	PERFORM FIREGUARD DUTIES	98
F146	PERFORM AIRCREW SCANNING DUTIES	97
K300	OPERATE INTERPHONE SYSTEMS	97
F156	PERFORM PREFLIGHT INSPECTIONS OF COCKPIT OR CABIN COMPARTMENTS	97
F123	BRIEF AIRCRAFT COMMANDER ON AIRCRAFT WEIGHT AND BALANCE STATUS	97
F170	REVIEW AIRCRAFT DATA DOCUMENTATION FORMS (AFTO FORMS 781 SERIES)	97
F126	BRIEF PASSENGERS ON FLIGHT MISSIONS	97
O416	INSPECT FUEL TANK LEVEL AND CAP SECURITY	97
U586	PERFORM, PRACTICE, OR SIMULATE SINGLE ENGINE FAILURE EMERGENCY PROCEDURES	97
G180	GROUND AIRCRAFT	97
S528	PERFORM PREFLIGHT INSPECTIONS OF MAIN ROTOR OR TAIL ROTOR	95
F161	PERFORM PREFLIGHT INSPECTIONS OF SEATS, SEAT BELTS, OR SHOULDER HARNESSES	95
F154	PERFORM PREFLIGHT INSPECTIONS OF AIRCRAFT STRUCTURES FOR EROSION, CORROSION, DAMAGE, OR CRACKS	95
F160	PERFORM PREFLIGHT INSPECTIONS OF LIFE SUPPORT, SURVIVAL, OR PERSONAL EQUIPMENT	95
F129	FASTEN SEATS, SEAT BELTS, OR SHOULDER HARNESSES	95
F158	PERFORM PREFLIGHT INSPECTIONS OF EMERGENCY EQUIPMENT, SUCH AS PARACHUTES, HEEDs, FIRE EXTINGUISHERS, OR LIFERAFTS	95
F125	BRIEF AIRCRAFT COMMANDER OR MAINTENANCE PERSONNEL ON AIRCRAFT SYSTEM MALFUNCTIONS	95
U582	PERFORM, PRACTICE, OR SIMULATE HYDRAULIC SYSTEM EMERGENCY PROCEDURES	95
O418	MONITOR FUEL CONSUMPTION	94
L324	MONITOR INSTRUMENT SYSTEM OPERATIONS	94
S527	MONITOR TRANSMISSION OR DRIVE SYSTEM OPERATIONS	94
F128	FASTEN CARGO NETS OR TIEDOWN STRAPS	94
O420	MONITOR FUEL FLOW OR TRANSFER SYSTEM OPERATIONS	92
T546	PERFORM ALERT, COCKING, OR SCRAMBLING OPERATIONS	92
F171	REVIEW PASSENGER MANIFESTS	92
F169	RELEASE CARGO NETS OR TIEDOWN STRAPS	92
U590	RECOMMEND CORRECTIVE ACTION FOR IN-FLIGHT EMERGENCY CONDITIONS	92
I252	PERFORM PREFLIGHT INSPECTIONS OF CARGO SLING SYSTEMS	92

TABLE 9

REPRESENTATIVE TASKS PERFORMED BY
7-SKILL LEVEL FLIGHT ENGINEERS

TASKS		PERCENT MEMBERS PERFORMING (N=51)
F125	BRIEF AIRCRAFT COMMANDER OR MAINTENANCE PERSONNEL ON AIRCRAFT SYSTEM MALFUNCTIONS	100
F141	PARTICIPATE IN CREW OPERATIONS DEBRIEFINGS	100
F158	PERFORM PREFLIGHT INSPECTIONS OF EMERGENCY EQUIPMENT, SUCH AS PARACHUTES, HEEDs, FIRE EXTINGUISHERS, OR LIFERAFTS	100
F146	PERFORM AIRCREW SCANNING DUTIES	98
H224	COMPUTE TAKEOFF AND LANDING DATA (TOLD)	98
K293	MONITOR INTERPHONE SYSTEM OPERATIONS	98
F156	PERFORM PREFLIGHT INSPECTIONS OF COCKPIT OR CABIN COMPARTMENTS	98
F123	BRIEF AIRCRAFT COMMANDER ON AIRCRAFT WEIGHT AND BALANCE STATUS	98
F124	BRIEF AIRCRAFT COMMANDER OR CREW ON PREMISSION STATUS OF AIRCRAFT	98
F160	PERFORM PREFLIGHT INSPECTIONS OF LIFE SUPPORT, SURVIVAL, OR PERSONAL EQUIPMENT	98
K297	MONITOR RADIOS, SUCH AS FREQUENCY MODULATION (FM), HIGH FREQUENCY (HF), ULTRA HIGH FREQUENCY (UHF), OR VERY HIGH FREQUENCY (VHF)	96
F170	REVIEW AIRCRAFT DATA DOCUMENTATION FORMS (AFTO FORMS 781 SERIES)	96
F154	PERFORM PREFLIGHT INSPECTIONS OF AIRCRAFT STRUCTURES FOR EROSION, CORROSION, DAMAGE, OR CRACKS	96
G203	PERFORM PREFLIGHT, THRU-FLIGHT, OR POSTFLIGHT INSPECTIONS OF AIRCRAFT	96
F149	PERFORM FUNCTIONAL CHECKFLIGHT (FCF) DUTIES	96
K300	OPERATE INTERPHONE SYSTEMS	94
F126	BRIEF PASSENGERS ON FLIGHT MISSIONS	94
F155	PERFORM PREFLIGHT INSPECTIONS OF CARGO	94
K294	MONITOR NAVIGATION EQUIPMENT, OTHER THAN RADAR	94
F137	OPEN OR CLOSE CREW ENTRANCE DOORS	94
0418	MONITOR FUEL CONSUMPTION	94
F129	FASTEN SEATS, SEAT BELTS, OR SHOULDER HARNESSES	94
F161	PERFORM PREFLIGHT INSPECTIONS OF SEATS, SEAT BELTS, OR SHOULDER HARNESSES	94
L324	MONITOR INSTRUMENT SYSTEM OPERATIONS	94
R492	MONITOR ENGINE TORQUE INDICATING SYSTEMS OPERATIONS	92
0420	MONITOR FUEL FLOW OR TRANSFER SYSTEM OPERATIONS	92
K304	OPERATE RADIOS	92
U586	PERFORM, PRACTICE, OR SIMULATE SINGLE ENGINE FAILURE EMERGENCY PROCEDURES	92
0416	INSPECT FUEL TANK LEVEL AND CAP SECURITY	92
R519	PERFORM PREFLIGHT INSPECTIONS OF POWER PLANT EXHAUST SECTIONS	92
S526	MONITOR MAIN ROTOR OR TAIL ROTOR SYSTEM OPERATIONS	92

TABLE 10

TASKS WHICH BEST DIFFERENTIATE BETWEEN
DAFSC 1A151B AND 1A171B PERSONNEL

TASKS		1A151B (N=63)	1A171B (N=51)	DIFFERENCE
T539	LOAD OR OFFLOAD AMMUNITION OR PYROTECHNICS	82	57	25
T556	PERFORM PREFLIGHT INSPECTIONS OF AMMUNITION OR PYROTECHNICS	79	55	24
T535	DEPLOY PYROTECHNICS	86	65	21
C62	EVALUATE PERSONNEL FOR COMPLIANCE WITH PERFORMANCE STANDARDS	24	65	-41
B27	COUNSEL PERSONNEL ON PERSONAL OR MILITARY-RELATED MATTERS	24	63	-39
C61	EVALUATE OPERATIONAL READINESS OF CREW MEMBERS OR AIRCRAFT	24	63	-39
C55	EVALUATE AIRCRAFT PERFORMANCE DATA	46	84	-38
A10	ESTABLISH PERFORMANCE STANDARDS	22	59	-37
D104	WRITE TEST QUESTIONS	30	65	-35
D76	ADMINISTER OR SCORE TESTS	29	63	-34
B19	BRIEF UNIT COMMANDER ON STATUS OF FLIGHT ENGINEER ACTIVITIES, OTHER THAN TRAINING	27	61	-34

DAFSC 1A190/CEM. Four DAFSC 1A190 personnel and one CEM were in the sample. Being aircrew members, they also have to maintain flying proficiency, so they perform many of the same tasks as members holding the other skill levels. What distinguishes these most senior members of the career ladder is they spend more time performing directing and implementing, inspecting and evaluating, and training duties than members holding the other skill levels. Two 9-skill level members reported being squadron-level superintendents, one was in a group Stan Eval position, and the fourth was Chief of enlisted aircrew training at HQ AFSOC. The CEM was the AFSOC Command Flight Engineer. Their management and training responsibilities are shown by representative tasks they perform, listed in Table 11, a mixture of typical flight engineer, training, and management tasks.

Summary

All Helicopter Flight Engineers, regardless of skill level, perform many common aircrew functions and demonstrate a typical aircrew career ladder progression. Members holding the 3- and 5-skill levels perform essentially the same flight engineer job, while 7-skill level members have additional supervisory and training responsibilities. The most senior personnel manage the overall career ladder and its training programs.

ANALYSIS OF AFMAN 36-2108 *SPECIALTY DESCRIPTIONS*

Survey data were compared to the AFMAN 36-2108 *Specialty Descriptions* for the Helicopter Flight Engineer career ladder, dated 15 March 1991. Descriptions for the skill levels are generally accurate, depicting the technical aspects of the job, as well as the increase in supervisory responsibilities previously described in the DAFSC analysis. The descriptions also capture the primary responsibilities of members in the three jobs identified by the job structure analysis.

TABLE 11

REPRESENTATIVE TASKS PERFORMED BY
DAFSC 1A190/CEM PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=5)
D87	DETERMINE TRAINING REQUIREMENTS	100
D91	ESTABLISH TRAINING STANDARDS	100
K300	OPERATE INTERPHONE SYSTEMS	100
L329	OPERATE INSTRUMENT SYSTEMS	100
L327	OPERATE ELECTRICAL SYSTEMS, OTHER THAN INTERIOR OR EXTERIOR LIGHTING SYSTEMS	100
L324	MONITOR INSTRUMENT SYSTEM OPERATIONS	100
K293	MONITOR INTERPHONE SYSTEM OPERATIONS	100
L323	MONITOR GENERATOR SYSTEMS	100
D93	EVALUATE TRAINING METHODS, TECHNIQUES, OR PROGRAMS	100
K297	MONITOR RADIOS, SUCH AS FREQUENCY MODULATION (FM), HIGH FREQUENCY (HF), ULTRAHIGH FREQUENCY (UHF), OR VERY HIGH FREQUENCY (VHF)	100
F146	PERFORM AIRCREW SCANNING DUTIES	100
F144	PARTICIPATE IN PREMISSION BRIEFINGS	100
F141	PARTICIPATE IN CREW OPERATIONS DEBRIEFINGS	100
G203	PERFORM PREFLIGHT, THRU-FLIGHT, OR POST FLIGHT INSPECTIONS OF AIRCRAFT	100
O418	MONITOR FUEL CONSUMPTION	100
D79	BRIEF UNIT PERSONNEL ON TRAINING MATTERS	100
K294	MONITOR NAVIGATION EQUIPMENT, OTHER THAN RADAR	100
O420	MONITOR FUEL FLOW OR TRANSFER SYSTEM OPERATIONS	100
A10	ESTABLISH PERFORMANCE STANDARDS	100
L328	OPERATE GENERATOR SYSTEMS	100
F142	PARTICIPATE IN MAINTENANCE DEBRIEFINGS	100
L325	MONITOR INTERIOR OR EXTERIOR LIGHTING SYSTEM OPERATIONS	100
B36	DIRECT PREFLIGHT OR POSTFLIGHT INSPECTIONS OF AIRCRAFT	100
C62	EVALUATE PERSONNEL FOR COMPLIANCE WITH PERFORMANCE STANDARDS	100
C61	EVALUATE OPERATIONAL READINESS OF CREWMEMBERS OR AIRCRAFT	80
E116	MAINTAIN FLIGHT MANUALS, SAFETY AND OPERATIONAL SUPPLEMENTS, AND FLIGHT CREW CHECKLISTS	80
A12	ESTABLISH WORK METHODS, CONTROLS, OR INSPECTION PROCEDURES	80

TRAINING ANALYSIS

Occupational survey data are one source of information that can be used to develop entry-level training programs. The factors used to evaluate entry-level training include the jobs performed by first-assignment personnel, percent of first-job (1-24 months TICF) and first-assignment (1-48 months TICF) members performing specific tasks, and TE and TD ratings.

First-Assignment Personnel

Fifty-five AFSC 1A1X1B respondents were in their first assignment (1-48 months TICF). Nine perform the Entry-Level Flight Engineer job, 14 the H-1 Flight Engineer job, 31 the H-53/ H-60 Flight Engineer job, and the last was an H-3 Engineer and did not group with the others. Table 12 shows time these members spend performing duties, while Table 13 lists representative tasks first-assignment personnel perform.

TE and TD Data

TE and TD data are secondary task factors that can help training development personnel focus on what tasks should be emphasized in entry-level training. These ratings, based on the judgments of senior Helicopter Flight Engineer NCOs working in the field, were collected to provide training personnel with a rank ordering of tasks considered important for formal training (TE), along with a measure of the relative difficulty of those tasks (TD). When combined with data on the percentages of first-assignment personnel performing tasks, comparisons can be made to determine if training adjustments are necessary. For example, tasks with high TE and TD ratings and performed by moderate to high percentages of members should be included in resident training. On the other hand, tasks with high TE and TD ratings and performed by low percentages may be more appropriate for OJT, while tasks with low task factor ratings may not be appropriate for formal training.

To help training development personnel focus on tasks that are most appropriate for entry-level training, an additional factor, the Automated Training Indicator (ATI), was assigned to each task in the inventory. A computer program considered percent first-assignment members performing, TE and TD ratings, and the Course Training Decision Table found in **AETCR 52-22, Attachment 1,** to assign a value to each task corresponding to one of the 18 training decisions.

A sample of tasks having the highest TE ratings is in Table 14. They deal with common flight engineer responsibilities, are performed by high percentages of respondents, have moderately high TD, and most are matched to the STS. Tasks having the highest TD ratings are listed in Table 15. Most are supervisory and administrative tasks, performed by higher percentages of 7-skill level members, and have low TE ratings. There are a few tasks dealing with water and night operations that have high TD ratings, but are not matched to the STS. Training personnel should review these tasks to ensure they are included in OJT programs.

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

TABLE 12

TIME SPENT ON DUTIES BY FIRST-ASSIGNMENT PERSONNEL
(RELATIVE PERCENT OF JOB TIME)

	DUTIES	1-48 TICF (N=55)
A	ORGANIZING AND PLANNING	*
B	DIRECTING AND IMPLEMENTING	2
C	INSPECTING AND EVALUATING	1
D	TRAINING	1
E	PERFORMING ADMINISTRATIVE ACTIVITIES	1
F	PERFORMING GENERAL AIRCREW ACTIVITIES	19
G	PERFORMING GENERAL MAINTENANCE ACTIVITIES	4
H	PERFORMING MISSION PLANNING AND PERFORMANCE DATA COMPUTATIONS	5
I	PERFORMING AUXILIARY SYSTEM ACTIVITIES	5
J	PERFORMING AUXILIARY POWER UNIT (APU) OR AUXILIARY POWER PLANT (APP) SYSTEM ACTIVITIES	3
K	PERFORMING COMMUNICATION AND NAVIGATION SYSTEM ACTIVITIES	6
L	PERFORMING ELECTRICAL AND INSTRUMENT SYSTEM ACTIVITIES	8
M	PERFORMING ENVIRONMENTAL SYSTEM ACTIVITIES	5
N	PERFORMING FLIGHT CONTROL SYSTEM ACTIVITIES	3
O	PERFORMING FUEL SYSTEM ACTIVITIES	5
P	PERFORMING LANDING GEAR (LDG) AND BRAKE SYSTEM ACTIVITIES	1
Q	PERFORMING PNEUDRAULIC OR HYDRAULIC SYSTEM ACTIVITIES	3
R	PERFORMING POWER PLANT OR ENGINE SYSTEM ACTIVITIES	10
S	PERFORMING ROTOR, TRANSMISSION, OR DRIVE SYSTEM ACTIVITIES	3
T	PERFORMING SPECIAL MISSION ACTIVITIES	7
U	PERFORMING EMERGENCY PROCEDURE ACTIVITIES	5

* Denotes less than 1 percent

TABLE 13

REPRESENTATIVE TASKS PERFORMED BY
FIRST-ASSIGNMENT PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=55)
H224	COMPUTE TAKEOFF AND LANDING DATA (TOLD)	100
F153	PERFORM PREFLIGHT INSPECTIONS OF AIRCRAFT PANELS, LOCKS, OR FASTENERS	100
F156	PERFORM PREFLIGHT INSPECTIONS OF COCKPIT OR CABIN COMPARTMENTS	100
F154	PERFORM PREFLIGHT INSPECTIONS OF AIRCRAFT STRUCTURES FOR EROSION, CORROSION, DAMAGE, OR CRACKS	100
F160	PERFORM PREFLIGHT INSPECTIONS OF LIFE SUPPORT, SURVIVAL, OR PERSONAL EQUIPMENT	100
F141	PARTICIPATE IN CREW OPERATIONS DEBRIEFINGS	100
F152	PERFORM PREFLIGHT INSPECTIONS OF AIRCRAFT FOR FLUID LEAKAGE	98
F170	REVIEW AIRCRAFT DATA DOCUMENTATION FORMS (AFTO 781 SERIES)	98
H219	COMPUTE AIRCRAFT WEIGHT AND BALANCE DATA USING CHARTS, LOAD ADJUSTERS, OR CALCULATORS	98
F123	BRIEF AIRCRAFT COMMANDER ON AIRCRAFT WEIGHT AND BALANCE STATUS	98
F158	PERFORM PREFLIGHT INSPECTIONS OF EMERGENCY EQUIPMENT, SUCH AS PARACHUTES, HEEDs, FIRE EXTINGUISHERS, OR LIFERAFTS	98
F146	PERFORM AIRCREW SCANNING DUTIES	96
F161	PERFORM PREFLIGHT INSPECTIONS OF SEATS, SEAT BELTS, OR SHOULDER HARNESSES	96
F126	BRIEF PASSENGERS ON FLIGHT MISSIONS	96
L324	MONITOR INSTRUMENT SYSTEM OPERATIONS	94
O416	INSPECT FUEL TANK LEVEL AND CAP SECURITY	94
K300	OPERATE INTERPHONE SYSTEMS	93
S528	PERFORM PREFLIGHT INSPECTIONS OF MAIN ROTOR OR TAIL ROTOR ASSEMBLIES	93
F137	OPEN OR CLOSE CREW ENTRANCE DOORS	93
O420	MONITOR FUEL FLOW OR TRANSFER SYSTEM OPERATIONS	93
F129	FASTEN SEATS, SEAT BELTS, OR SHOULDER HARNESSES	93
S527	MONITOR TRANSMISSION OR DRIVE SYSTEM OPERATIONS	93
T546	PERFORM ALERT, COCKING, OR SCRAMBLING OPERATIONS	93
S526	MONITOR MAIN ROTOR OR TAIL ROTOR SYSTEM OPERATIONS	93
K297	MONITOR RADIOS, SUCH AS FREQUENCY MODULATING (FM), HIGH FREQUENCY (HF), ULTRAHIGH FREQUENCY (UHF), OR VERY HIGH FREQUENCY (VHF)	91
R500	MONITOR POWER PLANT INSTRUMENT SYSTEMS	91
G203	PERFORM PREFLIGHT, THRU-FLIGHT, OR POSTFLIGHT INSPECTIONS OF AIRCRAFT	91
R518	PERFORM PREFLIGHT INSPECTIONS OF POWER PLANT COWLINGS	89
F159	PERFORM PREFLIGHT INSPECTIONS OF EMERGENCY EXIT SYSTEMS	87
K293	MONITOR INTERPHONE SYSTEM OPERATIONS	84

Specialty Training Standard (STS)

The STS for the career ladder was recently revised and updated with accompanying changes to topics included in entry-level training. Senior AFSC 1A1X1B personnel on temporary duty to AFOMS to rewrite the Specialty Knowledge Test matched tasks on the inventory to entries on the newly revised STS. A listing of the STS was produced showing STS entries, tasks matched, percent members performing, and TE and TD ratings for each matched task. Criteria set forth in AETCR 52-22, Attachment 1, were used to review the relevance of each STS entry that had tasks matched to it. Any entry with matched tasks performed by 20 percent first-job (1-24 months TICF), first-assignment (1-48 months TICF), 5-, or 7-skill level members, is considered to be supported by survey data.

STS paragraphs 1 through 8 deal with the general topics of career ladder progression, OPSEC, AFOSH, publications, supervision, training, graduate evaluation, and flight management. They were not reviewed. Paragraphs 9 through 33 deal with the technical aspects of the specialty. Only one STS entry, 9c - Using Alternate Tracking Equipment - was unsupported by survey data. The entry-level and accompanying survey data are displayed in Table 16. There are several tasks with high TE ratings and performed by high percentages of respondents that were not matched to STS entries. Four deal with briefings, and the others are general aircrew duties (see Table 17). Training personnel should review these tasks to determine if they suggest topics that need to be included in the STS.

The Basic Helicopter Flight Engineering course was also recently revised, with a syllabus date of September 1994. The course is managed and conducted by the 58th Operations Group, Kirtland AFB NM. Students cross-training into the specialty receive instruction on airframe construction, jet engine theory and operations, principles of transmission and drive systems, and principles of other systems related to helicopter operation and instruments. This material is taught to the knowledge level only, so tasks in the inventory did not relate specifically to these objectives. The final block of instruction has students doing weight and balance and performance data computations, using the CPU-26 Air Navigator Computer, performing fuel management problems, and plotting map coordinates. These performance objectives are supported by survey data, as a number of tasks related specifically to these objectives are performed by high percentages of first-assignment respondents and have fairly high TE ratings.

TABLE 14

TASKS WITH HIGH TE RATINGS

TASKS		TNG EMP	PERCENT MEMBERS PERFORMING 1ST JOB (N=37)	PERCENT MEMBERS PERFORMING 1ST ASG (N=55)	TASK DIFF
H224	COMPUTE TAKEOFF AND LANDING DATA (TOLD)	8.11	100	100	5.63
G203	PERFORM PREFLIGHT, THRU-FLIGHT OR POSTFLIGHT INSPECTIONS OF AIRCRAFT	7.42	92	91	5.73
F170	REVIEW AIRCRAFT DATA DOCUMENTATION FORMS (AFTO FORMS 781 SERIES)	7.37	97	98	5.19
U590	RECOMMEND CORRECTIVE ACTION FOR IN-FLIGHT EMERGENCY CONDITIONS	7.32	92	87	6.84
F146	PERFORM AIRCREW SCANNING DUTIES	7.32	95	96	5.23
H219	COMPUTE AIRCRAFT WEIGHT AND BALANCE DATA USING CHARTS, LOAD ADJUSTERS, OR CALCULATORS	7.26	100	98	5.61
U586	PERFORM, PRACTICE, OR SIMULATE SINGLE ENGINE FAILURE EMERGENCY PROCEDURES	7.26	95	96	5.82
F153	PERFORM PREFLIGHT INSPECTIONS OF AIRCRAFT PANELS, LOCKS, OR FASTENERS	7.16	100	100	5.05
F152	PERFORM PREFLIGHT INSPECTIONS OF AIRCRAFT FOR FLUID LEAKAGE	7.16	97	98	4.87
F125	BRIEF AIRCRAFT COMMANDER OR MAINTENANCE PERSONNEL ON AIRCRAFT SYSTEM MALFUNCTIONS	7.11	95	96	5.08
U579	PERFORM, PRACTICE, OR SIMULATE ENGINE FIRE OR SEVERE DAMAGE EMERGENCY PROCEDURES	7.11	89	91	5.80
F123	BRIEF AIRCRAFT COMMANDER ON AIRCRAFT WEIGHT AND BALANCE STATUS	7.11	97	98	4.03
K300	OPERATE INTERPHONE SYSTEMS	7.11	92	93	3.61
S528	PERFORM PREFLIGHT INSPECTIONS OF MAIN ROTOR OR TAIL ROTOR ASSEMBLIES	7.11	95	93	5.50
U582	PERFORM, PRACTICE, OR SIMULATE HYDRAULIC SYSTEM EMERGENCY PROCEDURES	7.11	92	95	5.92
U591	REPORT EMERGENCY CONDITIONS	7.00	76	78	5.98
U580	PERFORM, PRACTICE, OR SIMULATE ENGINE GROUND FIRE EMERGENCY PROCEDURES	6.95	78	82	5.30
F124	BRIEF AIRCRAFT COMMANDER OR CREW ON PREMISSION STATUS OF AIRCRAFT	6.95	86	89	4.00
S529	PERFORM PREFLIGHT INSPECTIONS OF TRANSMISSION OR GEARBOX CHIP DETECTOR SYSTEMS	6.89	84	85	5.50

TABLE 15

TASKS WITH HIGH TD RATINGS

TASKS		TASK DIFF	PERCENT MEMBERS PERFORMING 1-48 TICF (N=55)	5-LEVEL (N=63)	7-LEVEL (N=51)	TNG EMP
T553	PERFORM NIGHT WATER OPERATIONS	8.23	33	60	47	4.89
A8	DRAFT BUDGET REQUIREMENTS	7.99	4	6	12	.05
T552	PERFORM NIGHT VISION GOGGLE OPERATIONS	7.80	64	73	76	5.84
A5	DEVELOP AIRCREW FLIGHT MANUALS OR DIRECTIVES	7.63	9	17	37	1.32
C71	INVESTIGATE ACCIDENTS OR INCIDENTS	7.55	11	8	18	.58
A17	WRITE CONTINGENCY PLANS	7.42	13	6	24	1.05
B27	COUNSEL PERSONNEL ON PERSONAL OR MILITARY-RELATED MATTERS	7.39	22	24	63	1.68
A10	ESTABLISH PERFORMANCE STANDARDS	7.38	13	22	59	1.53
D88	DEVELOP RESIDENT COURSE OR CAREER DEVELOPMENT COURSE	7.32	0	0	6	.53
N389	ANALYZE HOVER COUPLER SYSTEM MALFUNCTIONS	7.27	16	35	33	3.63
C75	WRITE STAFF STUDIES, SURVEYS, OR SPECIAL REPORTS, OTHER THAN TRAINING REPORTS	7.13	9	6	33	.63
N388	ANALYZE AUTOMATIC FLIGHT CONTROL SYSTEM (AFCS) MALFUNCTIONS	7.09	51	63	61	4.58
D103	WRITE JOB QUALIFICATION STANDARDS (JQSs)	7.06	2	2	6	.11
B40	IMPLEMENT QUALITY CONTROL PROCEDURES	7.02	5	14	31	1.42
T549	PERFORM FLIGHT TESTS FOR NEW FLIGHT PROCEDURES OR EQUIPMENT VALIDATIONS	7.01	38	51	61	3.26
C70	INDORSE ENLISTED PERFORMANCE REPORTS (EPRs)	6.92	11	14	39	.74
C74	WRITE EPRs	6.92	25	27	57	2.47
B29	DIRECT EVALUATIONS OF AIRCRAFT PERFORMANCE OR SYSTEMS PERFORMANCE DATA	6.91	33	43	73	4.11
D91	ESTABLISH TRAINING STANDARDS	6.90	5	22	35	1.58
T563	PERFORM SHIP LANDING OR PICKUP OPERATIONS	6.89	32	46	39	3.68
A9	ESTABLISH ORGANIZATIONAL POLICIES	6.88	22	22	53	1.26

TABLE 16

UNSUPPORTED STS ENTRY

		TNG EMP	ATI	1ST JOB	1ST ASG	5-LVL	7-LVL	TSK DIFF
9C	ALTERNATE TRACKING							
G186	MONITOR ALTERNATE TRACKING EQUIPMENT	1.26	2	3	4	6	14	4.50
G191	OPERATE ALTERNATE TRACKING EQUIPMENT	1.21	2	3	5	8	12	4.95

TE MEAN = 3.82 S.D. = 1.81
TD MEAN = 5.00 S.D. = 1.00

TABLE 17

TASKS NOT REFERENCED TO STS ENTRIES

TASKS		TNG EMP	1ST JOB	1ST ASG	5-LVL	7-LVL	TSK DIFF
F146	PERFORM AIRCREW SCANNING DUTIES	7.32	95	96	97	98	5.23
F123	BRIEF AIRCRAFT COMMANDER ON AIRCRAFT WEIGHT AND BALANCE STATUS	7.11	97	98	97	98	4.03
F125	BRIEF AIRCRAFT COMMANDER OR MAINTENANCE PERSONNEL ON AIRCRAFT SYSTEM MALFUNCTIONS	7.11	95	96	95	100	5.08
F124	BRIEF AIRCRAFT COMMANDER OR CREW ON PREMISSION STATUS OF AIRCRAFT	6.95	86	89	89	98	4.00
F138	OPERATE EMERGENCY EQUIPMENT, SUCH AS PARACHUTES, HEEDs, FIRE EXTINGUISHERS, FIRST AID KITS, OR LIFERAFTS	6.68	78	80	86	92	4.27
F148	PERFORM FIREGUARD DUTIES	6.47	97	98	98	96	4.16
F147	PERFORM ANTIHIJACKING PROCEDURES	6.42	81	85	84	92	4.57
B 28	DIRECT CREWMEMBERS OR PASSENGERS DURING EMERGENCY PROCEDURES	6.32	81	84	87	94	5.02
E116	MAINTAIN FLIGHT MANUALS, SAFETY AND OPERATIONAL SUPPLEMENTS, AND FLIGHTCREW CHECKLISTS	6.05	68	69	70	78	5.43
T538	DETERMINE LANDING ZONE FACTORS (HIGH/LOW RECONNAISSANCE)	6.00	92	87	90	80	5.74
T546	PERFORM ALERT, COCKING, OR SCRAMBLING OPERATIONS	5.89	95	93	92	88	5.26

TE MEAN = 3.82 S.D. = 1.81
TD MEAN = 5.00 S.D. = 1.00

Summary

Both the STS and entry-level POI were reviewed against OSR data. Only one STS entry, dealing with using alternate tracking equipment, was not supported by survey data. While most of the learning objectives in the POI deal with understanding principles of operation and identifying system components, the last block of instruction is performance based and is well supported by survey data.

JOB SATISFACTION ANALYSIS

An examination of job satisfaction indicators can give career ladder managers a better understanding of factors that may affect the job performance of career ladder airmen. Therefore, the survey booklet included questions about job interest, perceived utilization of talents and training, sense of accomplishment from work, and reenlistment intentions. The responses of the current survey sample were then analyzed by making comparisons between members of AFSC 1A1X1B TICF groups and nonlateral aircrew specialty TAFMS groups surveyed in 1993. This comparison was done since no other lateral aircrew specialties have been surveyed in several years, and there are recent data for other aircrew specialties. Other job satisfaction comparisons made were between current and previous survey TICF groups and between the three jobs identified in the **SPECIALTY JOBS** section of this report.

Table 18 shows the comparison of first-assignment (1-48 months TICF), second-assignment (49-96 months TICF), and career (97+ months TICF) group data to corresponding TAFMS groups from AFSCs 1T2X1 (Pararescue), 1A4X1 (Airborne Warning Command and Control Systems), 1A5X3 (Airborne Radar Systems), and 1A0X1 (Inflight Refueling). Helicopter Flight Engineer personnel reported generally higher job satisfaction than members of the comparative sample. Table 19 presents TICF group data for 1994 survey respondents and data from respondents to the last OSR completed in 1988. Generally, perceptions of job satisfaction have remained the same over time.

Table 20 presents job satisfaction data for members with the three jobs identified in the career ladder structure. Relatively fewer Entry-Level Flight Engineers find their job interesting, feel their training is well used, and plan to reenlist than members of the other two jobs. It is interesting to note members with the H-53 and H-60 Flight Engineer job have the highest satisfaction.

TABLE 18

COMPARISON OF TICF AND TAFMS GROUPS SATISFACTION DATA
(PERCENT MEMBERS RESPONDING)

	1-48 MONTHS		49-96 MONTHS		97+ MONTHS	
	TICF 1994 (N=55)	TAFMS COMP SAMPLE (N=233)	TICF 1994 (N=23)	TAFMS COMP SAMPLE (N=214)	TICF 1994 (N=55)	TAFMS COMP SAMPLE (N=565)
EXPRESSED JOB INTEREST						
Interesting	94	87	87	90	91	87
So-So	4	8	4	6	5	8
Dull	2	5	9	4	4	5
TALENTS ARE USED						
Fairly Well to Perfectly	98	85	96	89	93	89
Very Little to Not At All	2	15	4	11	7	11
TRAINING IS USED						
Fairly Well to Perfectly	96	94	96	94	95	89
Very Little to Not At All	4	6	4	6	5	11
SENSE OF ACCOMPLISHMENT						
Satisfied	90	84	83	87	82	81
Neutral	5	5	4	4	2	6
Dissatisfied	5	11	13	9	16	13
REENLISTMENT INTENTIONS						
Will Reenlist	84	71	100	82	73	76
Will Not Reenlist	9	29	0	18	2	7
Will Retire	7	0	0	0	25	17

Comparative data from AFSCs 1T2X1 - Pararescue, 1A4X1 - Airborne Warning Command and Control Systems, 1A5X3 - Airborne Radar Systems, and 1A0X1 - Inflight Refueling

TABLE 19

COMPARISON OF CURRENT AND PREVIOUS JOB SATISFACTION DATA
(PERCENT MEMBERS RESPONDING)

	1-48 MONTHS		49-96 MONTHS		97+ MONTHS	
	1994 (N=55)	1988 (N=74)	1994 (N=23)	1988 (N=59)	1994 (N=55)	1988 (N=59)
EXPRESSED JOB INTEREST						
Interesting	94	96	87	86	91	92
So-So	4	4	4	8	5	5
Dull	2	0	9	2	4	3
TALENTS ARE USED						
Fairly Well to Perfectly	98	95	96	86	93	95
Very Little to Not At All	2	5	4	14	7	5
TRAINING IS USED						
Fairly Well to Perfectly	96	97	96	85	95	95
Very Little to Not At All	4	3	4	15	5	5
SENSE OF ACCOMPLISHMENT						
Satisfied	90	91	83	72	82	88
Neutral	5	5	4	8	2	0
Dissatisfied	5	4	13	20	16	12
REENLISTMENT INTENTIONS						
Will Reenlist	84	84	100	76	73	77
Will Not Reenlist	9	12	0	16	2	7
Will Retire	7	4	0	8	25	16

TABLE 20

JOB SATISFACTION DATA FOR JOBS
(PERCENT MEMBERS RESPONDING)

	ENTRY-LEVEL ENGINEERS (N=12)	H-1 ENGINEERS (N=33)	H-53/H-60 ENGINEERS (N=82)
EXPRESSED JOB INTEREST			
Interesting	67	91	94
So-So	17	3	4
Dull	16	6	2
TALENTS ARE USED			
Fairly Well to Perfectly	100	91	96
Very Little to Not At All	0	9	4
TRAINING IS USED			
Fairly Well to Perfectly	83	91	100
Very Little to Not At All	17	9	0
SENSE OF ACCOMPLISHMENT			
Satisfied	75	76	90
Neutral	25	3	1
Dissatisfied	0	21	9
REENLISTMENT INTENTIONS			
Will Reenlist	75	79	84
Will Not Reenlist	17	3	4
Will Retire	8	18	12

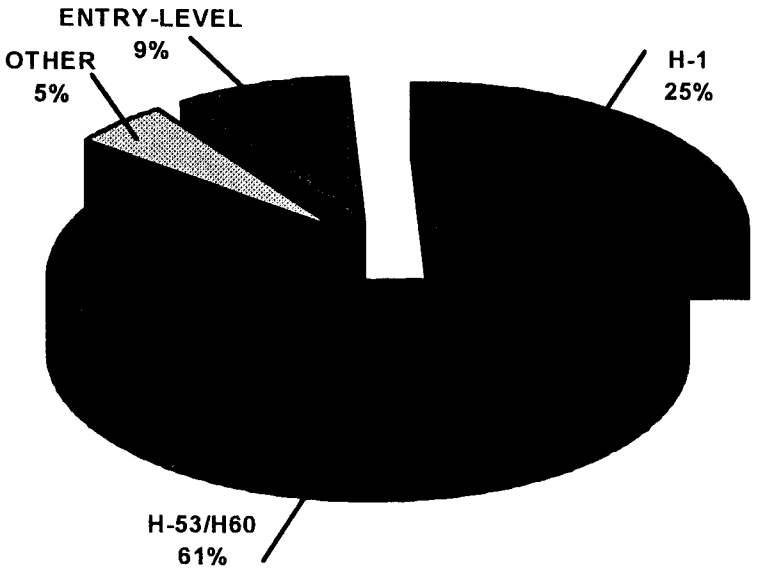
Summary

Overall, Helicopter Flight Engineer satisfaction indicators are higher than those of members of non-lateral enlisted aircrew specialties surveyed in 1993. Indicators have remained stable over the last 6 years. A lower percentage of entry-level engineers find their jobs interesting and feel their training is well used. It is interesting to note higher percentages of H-53 and H-60 engineers feel their training is well used and plan to reenlist. This may be due to more challenging missions H-53 and H-60 helicopters are used for.

IMPLICATIONS

The present classification structure, as described by the AFMAN 36-2108 *Specialty Descriptions*, accurately portrays the jobs in this study. Analysis of career ladder documents indicates both the STS and POI are well supported by OSR data. There are, however, some tasks not matched to the STS that should be reviewed to determine if their inclusion in future revisions is warranted. Overall, job satisfaction responses were higher than those of a comparative sample of enlisted aircrew personnel surveyed in 1993. Entry-level personnel do not find their jobs as interesting as more senior flight engineers.

AFSC 1A1X1B
CAREER LADDER JOBS



APPENDIX A

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TABLE A1

ENTRY-LEVEL FLIGHT ENGINEER JOB

THE FOLLOWING ARE IN DESCENDING ORDER OF PERCENT MEMBERS PERFORMING:

TASKS		PERCENT MEMBERS PERFORMING
F146	PERFORM AIRCREW SCANNING DUTIES	100
H224	COMPUTE TAKEOFF AND LANDING DATA (TOLD)	100
F123	BRIEF AIRCRAFT COMMANDER ON AIRCRAFT WEIGHT AND BALANCE STATUS	100
F156	PERFORM PREFLIGHT INSPECTIONS OF COCKPIT OR CABIN COMPARTMENTS	100
F153	PERFORM PREFLIGHT INSPECTIONS OF AIRCRAFT PANELS, LOCKS, OR FASTENERS	100
F152	PERFORM PREFLIGHT INSPECTIONS OF AIRCRAFT FOR FLUID LEAKAGE	100
F141	PARTICIPATE IN CREW OPERATIONS DEBRIEFINGS	100
F126	BRIEF PASSENGERS ON FLIGHT MISSIONS	100
F129	FASTEN SEATS, SEAT BELTS, OR SHOULDER HARNESSES	100
U586	PERFORM, PRACTICE, OR SIMULATE SINGLE ENGINE FAILURES	100
F135	LOAD OR OFFLOAD PERSONNEL	100
K300	OPERATE INTERPHONE SYSTEMS	92
F161	PERFORM PREFLIGHT INSPECTIONS OF SEATS, SEAT BELTS, OR SHOULDER HARNESSES	92
F137	OPEN OR CLOSE CREW ENTRANCE DOORS	92
F144	PARTICIPATE IN PREMISSION BRIEFINGS	92
F154	PERFORM PREFLIGHT INSPECTIONS OF AIRCRAFT STRUCTURES FOR EROSION, CORROSION, DAMAGE, OR CRACKS	92
F158	PERFORM PREFLIGHT INSPECTIONS OF EMERGENCY EQUIPMENT, SUCH AS PARACHUTES, HEEDs, FIRE EXTINGUISHERS, OR LIFERAFTS	92
F125	BRIEF AIRCRAFT COMMANDERS OR MAINTENANCE PERSONNEL ON AIRCRAFT SYSTEM MALFUNCTIONS	92
H219	COMPUTE AIRCRAFT WEIGHT AND BALANCE DATA USING CHARTS, LOAD ADJUSTERS, OR CALCULATORS	92
F133	LOAD OR OFFLOAD CREW GEAR	92
U579	PERFORM, PRACTICE, OR SIMULATE ENGINE FIRE OR SEVERE DAMAGE EMERGENCY PROCEDURES	92
G180	GROUND AIRCRAFT	92
F128	FASTEN CARGO NETS OR TIEDOWN STRAPS	92
F159	PERFORM PREFLIGHT INSPECTIONS OF EMERGENCY EXIT SYSTEMS	83
G203	PERFORM PREFLIGHT, THRU-FLIGHT, OR POSTFLIGHT INSPECTIONS	83
K304	OPERATE RADIOS	83
F124	BRIEF AIRCRAFT COMMANDER OR CREW ON PREMISSION STATUS OF AIRCRAFT	83
F170	REVIEW AIRCRAFT DATA DOCUMENTATION FORMS (AFTO FORMS 781 SERIES)	83
0416	INSPECT FUEL TANK LEVEL AND CAP SECURITY	83
F171	REVIEW PASSENGER MANIFESTS	83
T546	PERFORM ALERT, COCKING, OR SCRAMBLING OPERATIONS	83
U582	PERFORM, PRACTICE, OF SIMULATE HYDRAULIC SYSTEM EMERGENCY PROCEDURES	83

TABLE A2

H-1 FLIGHT ENGINEER JOB

THE FOLLOWING ARE IN DESCENDING ORDER OF PERCENT MEMBERS PERFORMING:

TASKS		PERCENT MEMBERS PERFORMING
H224	COMPUTE TAKEOFF AND LANDING DATA (TOLD)	100
F156	PERFORM PREFLIGHT INSPECTIONS OF COCKPIT OR CABIN COMPARTMENTS	100
F125	BRIEF AIRCRAFT COMMANDER OR MAINTENANCE PERSONNEL ON AIRCRAFT SYSTEM MALFUNCTIONS	100
F152	PERFORM PREFLIGHT INSPECTIONS OF AIRCRAFT FOR FLUID LEAKAGE	100
F153	PERFORM PREFLIGHT INSPECTIONS OF AIRCRAFT PANELS, LOCKS, OR FASTENERS	100
F126	BRIEF PASSENGERS ON FLIGHT MISSIONS	100
F123	BRIEF AIRCRAFT COMMANDER ON AIRCRAFT WEIGHT AND BALANCE STATUS	100
F141	PARTICIPATE IN CREW OPERATIONS DEBRIEFINGS	100
F158	PERFORM PREFLIGHT INSPECTIONS OF EMERGENCY EQUIPMENT, SUCH AS PARACHUTES, HEEDs, FIRE EXTINGUISHERS, OR LIFERAFTS	100
F160	PERFORM PREFLIGHT INSPECTIONS OF LIFE SUPPORT, SURVIVAL, OR PERSONAL EQUIPMENT	100
F148	PERFORM FIREGUARD DUTIES	100
G180	GROUND AIRCRAFT	100
B 31	DIRECT LOADING OR OFFLOADING OF CARGO	100
F146	PERFORM AIRCREW SCANNING DUTIES	97
F137	OPEN OR CLOSE CREW ENTRANCE DOORS	97
F129	FASTEN SEATS, SEAT BELTS, OR SHOULDER HARNESSES	97
O146	INSPECT FUEL TANK LEVEL OR CAP SECURITY	97
K304	OPERATE RADIOS	97
F170	REVIEW AIRCRAFT DATA DOCUMENTATION FORMS (AFTO FORMS 781 SERIES)	97
F135	LOAD OR OFFLOAD PERSONNEL	97
O418	MONITOR FUEL CONSUMPTION	97
S528	PERFORM PREFLIGHT INSPECTIONS OF MAIN ROTOR OR TAIL ROTOR ASSEMBLIES	97
U586	PERFORM, PRACTICE, OR SIMULATE SINGLE ENGINE FAILURE EMERGENCY PROCEDURES	97
L324	MONITOR INSTRUMENT SYSTEM OPERATIONS	97
R521	PERFORM PREFLIGHT INSPECTIONS OF POWER PLANT FIRE OR OVERHEAT DETECTION SYSTEMS	97
L323	MONITOR GENERATOR SYSTEMS	97
L322	MONITOR ELECTRICAL SYSTEMS, OTHER THAN INTERIOR OR EXTERIOR LIGHTING SYSTEMS	97
K297	MONITOR RADIOS, SUCH AS FREQUENCY MODULATING (FM), HIGH FREQUENCY (HF), ULTRAHIGH FREQUENCY (UHF), OR VERY HIGH FREQUENCY (VHF)	97
U582	PERFORM, PRACTICE, OR SIMULATE HYDRAULIC SYSTEM EMERGENCY PROCEDURES	94
S527	MONITOR TRANSMISSION OR DRIVE SYSTEM OPERATIONS	94

TABLE A3

H-53/H-60 FLIGHT ENGINEER JOB

THE FOLLOWING ARE IN DESCENDING ORDER OF PERCENT MEMBERS PERFORMING:

TASKS		PERCENT MEMBERS PERFORMING
H219	COMPUTE AIRCRAFT WEIGHT AND BALANCE DATA USING CHARTS, LOAD ADJUSTERS, OR CALCULATORS	100
O420	MONITOR FUEL FLOW OR TRANSFER SYSTEM OPERATIONS	100
I244	OPERATE RESCUE HOIST SYSTEMS	100
I253	PERFORM PREFLIGHT INSPECTIONS OF RESCUE HOIST SYSTEMS	100
I248	PERFORM OPERATIONAL CHECKS ON RESCUE HOIST SYSTEMS	100
I233	ANALYZE RESCUE HOIST SYSTEM MALFUNCTIONS	100
T552	PERFORM NIGHT VISION GOGGLE OPERATIONS	99
H224	COMPUTE TAKEOFF AND LANDING DATA (TOLD)	99
F153	PERFORM PREFLIGHT INSPECTIONS OF AIRCRAFT PANELS, LOCKS, OR FASTENERS	99
O418	MONITOR FUEL CONSUMPTION	99
L324	MONITOR INSTRUMENT SYSTEM OPERATIONS	99
T546	PERFORM ALERT, COCKING, OR SCRAMBLING OPERATIONS	99
R492	MONITOR ENGINE TORQUE INDICATING SYSTEM OPERATIONS	98
F175	VERIFY SAFETY PINS OR STREAMERS ARE REMOVED PRIOR TO FLIGHT OR INSTALLED AFTER FLIGHT	98
T536	DEPLOY RESCUE EQUIPMENT	98
U575	PERFORM, PRACTICE, OR SIMULATE DUAL ENGINE FAILURE EMERGENCY PROCEDURES	98
T548	PERFORM FAST-ROPE OPERATIONS	98
T538	DETERMINE LANDING ZONE FACTORS (HIGH/LOW RECONNAISSANCE)	95
R519	PERFORM PREFLIGHT INSPECTIONS OF POWER PLANT EXHAUST	95
Q478	PERFORM PREFLIGHT INSPECTIONS OF HYDRAULIC SYSTEMS OR ACCUMULATORS, OTHER THAN BACKUP PUMP SYSTEMS	95
O432	PERFORM PREFLIGHT INSPECTIONS OF AIR REFUELING SYSTEMS	95
U586	PERFORM, PRACTICE, OR SIMULATE SINGLE ENGINE FAILURE EMERGENCY PROCEDURES	95
U590	RECOMMEND CORRECTIVE ACTION FOR IN-FLIGHT EMERGENCY CONDITIONS	95
U585	PERFORM, PRACTICE, OR SIMULATE RESCUE HOIST EMERGENCY PROCEDURES	95
U582	PERFORM, PRACTICE, OR SIMULATE HYDRAULIC SYSTEM EMERGENCY PROCEDURES	95
N393	MONITOR AFSCs OPERATIONS	93
L348	PERFORM PREFLIGHT INSPECTIONS OF WIRING, CIRCUIT BREAKERS, OR CONTROL PANELS	93
I238	MONITOR RESCUE HOIST SYSTEM OPERATIONS	93
T556	PERFORM PREFLIGHT INSPECTIONS OF AMMUNITION OR PYROTECHNICS	93
L323	MONITOR GENERATOR SYSTEMS	93
L325	MONITOR INTERIOR OR EXTERIOR LIGHTING SYSTEM OPERATIONS	93
R497	MONITOR POWER PLANT FIRE OR OVERHEAT DETECTION SYSTEM OPERATIONS	93
F149	PERFORM FUNCTIONAL CHECKFLIGHT (FCF) DUTIES	93
T569	PERFORM WATER OPERATIONS	93

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