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INFLIGHT REFUELING OPERATORS CAREER LADDER AFS 112X0  
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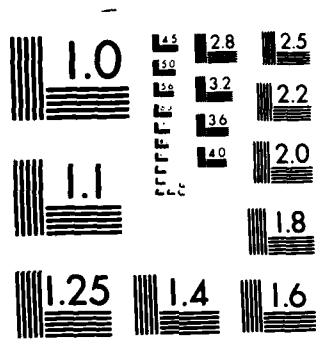
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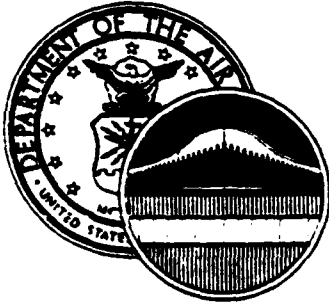
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UNITED STATES AIR FORCE

AD A12716

# OCCUPATIONAL SURVEY REPORT



INFLIGHT REFUELING OPERATORS  
CAREER LADDER

AFS 112X0  
AFPT 90-112-454  
MARCH 1983

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OCCUPATIONAL ANALYSIS PROGRAM  
USAF OCCUPATIONAL MEASUREMENT CENTER  
AIR TRAINING COMMAND  
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## PREFACE

This report presents the results of a detailed Air Force Occupational Survey of the Inflight Refueling Operators career ladder (112X0). Authority for conducting occupational surveys is contained in AFR 35-2. Computer outputs from which this report was produced are available for use by operating and training officials.

The survey instrument was developed by First Lieutenant Kevin F. Morefield, Inventory Development Specialist. First Lieutenant Carlton F. Middleton, Occupational Analyst, analyzed the data and wrote the final report. Mr Bill Feltner, Jr., provided computer programming support for the project. This report has been reviewed and approved by Lieutenant Colonel Jimmy L. Mitchell, Chief, Airman Career Ladders Analysis Section, Occupational Analysis Branch, USAF Occupational Measurement Center, Randolph AFB, Texas 78150.

Copies of this report are distributed to Air Staff sections, major commands, and other interested training and management personnel. Additional copies may be obtained upon request to the USAF Occupational Measurement Center, attention of the Chief, Occupational Analysis Branch (OMY), Randolph AFB, Texas 78150.

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## SUMMARY OF RESULTS

1. Survey Coverage: Inventory booklets were administered worldwide to Inflight Refueling Operators. The 765 personnel in the final survey sample represent 75 percent of the total career ladder.
2. Specialty Jobs (Career Ladder Structure): AFS 112X0 is a very homogeneous career ladder. Three main groups were identified: Line Boom Operators, Instructors, and Managers. Several subgroups were examined within these composite groups. Even with the above divisions, there was much similarity in job performance among all 112X0 personnel. Most incumbents perform the technical aspects of inflight refueling, regardless of their job title.
3. Career Ladder Progression: Three- and 5-skill level incumbents perform a similar job consisting mainly of technical inflight refueling operator duties. With acquisition of the 7-skill level, additional nontechnical duties, such as training and management, become part of the boom operator's responsibilities. Finally, when the 9-skill level and CEM code levels are reached, the job includes many managerial, supervisory, and other nontechnical functions, as well as the technical aspects. Thus, the job essentially broadens with progression.
4. AFR 39-1 Specialty Job Descriptions: These documents accurately portray the jobs of their respective DAFSC group.
5. Training Analysis: Comparison of the 112X0 STS with occupational survey data identified several areas for review. Examination of the SAC document for course content (ETRS) for the KC-135, revealed no areas requiring revision. First-termers perform the full spectrum of 112X0 technical duties.
6. Job Attitudes: AFS 112X0 personnel are positive about their job and most plan to reenlist.
7. Comparison of Present to Previous Survey: Most of the jobs identified in the previous study correspond to the current study. Job attitudes have substantially improved since the 1978 study.
8. Implications: The 112X0 career ladder structure has remained stable over the past five years. The specialty jobs have a common core of technical boom operator tasks performed by most incumbents and job attitudes are extremely positive among incumbents.

OCCUPATIONAL SURVEY REPORT  
INFLIGHT REFUELING OPERATORS CAREER LADDER  
(AFS 112X0)

INTRODUCTION

This is a report of an occupational survey of the Inflight Refueling Operators career ladder (AFSC 112X0) completed by the Occupational Analysis Branch, USAF Occupational Measurement Center. The survey was requested by the Director of Training, Deputy Chief of Staff, Operations, HQ SAC. This is one of several enlisted aircrew AFSCs being surveyed to aid in determining the feasibility of a centralized undergraduate enlisted aircrew technical school. (A separate report dealing with the common aircrew tasks will be published after all the aircrew specialties are surveyed.) The previous Occupational Survey Report (OSR) of the 112X0 career ladder was completed in August 1978.

A separate Air Force specialty (AFS) designed around inflight refueling began in March 1954. From that time, numeric designations have changed from the original 433X0 (includes 3-, 5-, and 7-skill levels) to 431X3 in September 1955, then to 424X2 in September 1961, 425X0 in July 1971, and, finally, to the present 112X0 in May 1975. A separate Inflight Refueling Superintendent was established with the 42492 in March 1970 from the Aircraft Fuel Systems Superintendent (42490). In July 1971, the numeric designation of the superintendent changed to 42590 and, in May 1975 to 11290. The Chief Enlisted Manager position (11200) was established in October 1978.

Personnel assigned to the Inflight Refueling Operator career ladder are assigned primarily to the Strategic Air Command (SAC) and most are qualified on the KC-135A aircraft. As the USAF single manager for inflight refueling, SAC provides inflight refueling for all USAF aircraft. The inflight refueling operator's primary job is assisting the pilot in conducting air refueling. Consequently, the inflight refueling operator, commonly referred to as the "boom operator", visually or verbally directs the receiver aircraft into the refueling envelope and then uses the boom or the drogue to conduct refueling. Additionally, the boom operator serves as loadmaster when the aircraft is carrying cargo or passengers.

Presently, prospective 11230 personnel progress through two courses which include three phases of initial skills training. The first phase is the Enlisted Aviation Undergraduate School (EAUS), which lasts 20 days and services both the inflight refueling operators and the defensive aerial gunners (AFSC 111X0). This course has been running on a trial basis, but present action is under way to permanently incorporate it into AFR 50-5. Essentially, the course covers general aircrew duties, military training, counseling, and so forth. The idea behind establishment of the course is early evaluation of individual abilities to handle the required flying. Upon completion of EAUS, airmen continue to the 4017 Combat Crew Training School at Castle AFB CA.

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Here, the Combat Crew Training School has two phases: academic and flightline. Academic training, including simulators, lasts 30 training days. After academic training, personnel go on to the flightline training phase for 40 training days. One hundred seventy-six graduates are projected annually.

## SURVEY METHODOLOGY

### Inventory Development

The data collection instrument for this occupational survey was USAF Job Inventory AFPT 90-112-454. As a starting point, tasks from the 1978 112X0 inventory were reviewed, revised, and updated through detailed research of current career ladder publications and directives. This new tentative task list was then reviewed and validated by course personnel at the Combat Crew Training School (CCTS), Castle AFB CA, and a number of subject-matter specialists at Barksdale AFB LA. The resulting inventory contained 232 tasks grouped under 8 duty headings. Also included in the inventory was an extensive background section that asked for information such as:

- Job Title
- Career Field Courses
- Types of aircraft qualified in
- Amount of Alert duty performed
- Amount of time spent TDY
- Job Attitudes

### Survey Administration

From February to May 1982, consolidated base personnel offices in operational units worldwide administered the job inventory to incumbents holding DAFSC 112X0. These personnel were selected from a computer-generated mailing list obtained from personnel data tapes maintained by the Air Force Human Resources Laboratory (AFHRL).

Each respondent who completed a job inventory first completed an identification and biographical information section and then checked all tasks which were performed in his or her present job. Those tasks checked were then rated on a nine-point scale showing the relative amount of time spent on that task as compared to all other tasks checked. The ratings ranged from one (very small amount of time spent) to nine (very large amount of time spent), with a rating of five representing an average amount of time spent in performing a task.

To determine the relative amount of time spent on each task checked by a respondent, all of an incumbent's ratings are assumed to account for 100 percent of his or her time spent on the job. These ratings are totaled and each task rating is then divided by the total task ratings, with the resulting quotient then multiplied by 100. This procedure provides a basis for comparing all tasks in terms of both percent members performing and relative percent time spent.

### Data Processing and Analysis

Once job inventories are returned from the field, they are visually checked to ensure proper completion and to eliminate any that are obviously misprepared. Then both task and background data from inventories are entered into the AFHRL computer to form a complete case record for each respondent. From this data, computer products are generated and data analyzed in a variety of ways. This analysis forms the basis for this report.

### Survey Sample

Incumbents were selected to participate in this survey to ensure an accurate representation across paygrade groups (see Table 1). Table 2 reflects the distribution of the survey sample in terms of months Total Active Federal Military Service (TAFMS). As demonstrated by these tables, the overall sample was representative of the career ladder population as a whole.

TABLE 1

PAYGRADE DISTRIBUTION OF SURVEY SAMPLE

<u>PAYGRADE</u>	<u>PERCENT OF ASSIGNED*</u>	<u>PERCENT OF SAMPLE</u>
AIRMEN	12%	11%
E-4	21%	18%
E-5	32%	35%
E-6	16%	17%
E-7	11%	11%
E-8	5%	5%
E-9	<u>3%</u>	<u>3%</u>
TOTAL	100%	100%

TOTAL ASSIGNED - 1,024

TOTAL SAMPLED - 765

PERCENT SAMPLED - 75%

\* MANNING FIGURES AS OF DECEMBER 1981

TABLE 2

## TAFMS DISTRIBUTION OF SURVEY SAMPLE

<u>TAFMS (MONTHS)</u>	<u>NUMBER IN SAMPLE</u>	<u>PERCENT OF SAMPLE</u>
1-48	148	19%
49-96	202	27%
97-144	168	22%
145-192	89	12%
193-240	65	8%
241+	93	12%

Task Factor Administration

In addition to completing a Job Inventory booklet, selected senior 112X0 personnel were also asked to complete a second booklet for either Task Difficulty or Training Emphasis. The Task Difficulty and Training Emphasis rating booklets were processed separately from the job inventories. These ratings were then used in a number of different analyses discussed in more detail within the report.

Task Difficulty. Each senior NCO completing a task difficulty booklet was asked to rate all of the tasks on a nine-point scale from extremely low to extremely high difficulty, with difficulty defined as the length of time it takes an average incumbent to learn to do the task. Ratings were then adjusted so tasks of average difficulty reflect a rating of 5.00, with a standard deviation of 1.0.

Task difficulty data were independently collected from 60 experienced 7-skill level personnel stationed worldwide. The interrater reliability (as assessed through components of variance of standard group means) of .96 for these 112X0 raters reflected very high agreement. The resulting data was a rank ordering of tasks indicating a relative degree of difficulty for each task in the inventory.

Job Difficulty Index (JDI). After computing a task difficulty value for each task item, it was then possible to compute a Job Difficulty Index (JDI) for the groups identified in the survey analysis. This index provides a relative measure of which jobs, when compared to other jobs identified, were more or less difficult. An equation using the number of tasks performed and the average difficulty per unit time spent (ADPUTS) as variables was the basis for the JDI. The index ranges from one, for very easy jobs, to 25 for very difficult jobs. The indices were adjusted so the average job difficulty index was 13.00. Thus, the more time a group spends on difficult tasks, and the more tasks they perform, the higher their job difficulty index.

Training Emphasis. Individuals completing training emphasis booklets were asked to rate all of the tasks on a ten-point scale from no training required to extremely heavy training required. This data was used to calculate a rank ordering of tasks indicating where the emphasis should be placed on structured training for first-term personnel. Structured training was defined as training provided at resident technical schools, Field Training Detachments (FTD), Mobile Training Teams (MTT), formal OJT, or by any other organized training method.

Training emphasis data were independently collected from 77 experienced 7-skill level personnel stationed worldwide. The interrater reliability (as assessed through components of variance of standard group means) for these raters was .99, indicating extremely high agreement among raters as to which tasks required some form of structured training and which did not. In this specialty, tasks rated highest in training emphasis show ratings of 5.73 or above, and those tasks with ratings less than 0.95 were considered as requiring very little emphasis in training.

When used in conjunction with other factors, such as percent members performing, the task difficulty and training emphasis ratings provide insight into the training requirements. The information these ratings provide can help improve both training and overall career ladder management.

#### Training Documents

Occupational survey data is very useful for examining the currency of Specialty Training Standards (STSS) and Plans of Instruction (POIs). These data can indicate areas of an STS or POI that should be reviewed for additions or deletions based on percentage of members performing and on other task factors.

In the 112X0 career ladder, no POI exists; rather, training is performed according to Education and Training Requirements (ETRS). ETRS for the 112X0 ladder are aircraft-specific. Since the most common aircraft is the KC-135, the ETRS for KC-135 aircraft were examined. An objective matching of ETRS and the job inventory was not possible at the time; thus, the ETRS analysis is a subjective examination by the analyst.

To assist in the STS analysis, subject-matter specialists (SMSs) at the technical school compare the job inventory task list with the STSS for each item within this document. Then, they provide a written match of the inventory tasks to the STS item(s) that best cover that task. Tasks that fit under no present STS item are left unmatched.

Based on this matching, computer products are generated that assist in analyzing the training documents in accordance with ATRC 52-22. Because survey data is only one of many inputs into training decisions, the result of this training analysis is a recommendation of items for review by training officials.

Since training and other career field documents (AFR 39-1) are affected by how the specialty is organized and how personnel are being utilized, we need to develop a perspective on the present status of the career field. This can be accomplished by analysis of the jobs within the specialty.

## SPECIALTY JOBS (Career Ladder Structure)

Occupational data collected from 112X0 Inflight Refueling Operators indicate that, regardless of their assignment or experience, most boom operators perform a common job. This job is summarized as operating the boom in refueling operations and performing other air-mission requirements. These additional air-mission requirements include common aircrew tasks, loadmaster functions (accounting for 14 percent of the total sample's job time), and preflight and postflight functions. As Table 3 illustrates, duties subsuming these essential features of the 112X0 job comprise 84 percent of their relative job time.

The number of specific tasks that members perform in common is also indicative of the homogeneity of the boom operator's job. Forty-one tasks were identified with over 90 percent of the 112X0 sample performing them (Table 4 presents examples of the most performed tasks). Over 50 percent of the job time of the 112X0 total sample is spent performing only 52 tasks. Thus, boom operators spend the majority of their job time performing 52 tasks, 41 of which are performed by over 90 percent of all 112X0 survey respondents.

Along with the common tasks listed in Table 4, Table 5 provides some background information on the total sample. As illustrated, 78 percent of the respondents are qualified in the KC-135A aircraft. Most members (505) are trained to the mission-ready level (this is the highest qualification, followed by mission-capable, then basic). The mission-ready qualification requires a high degree of regular flying; whereas, the mission-capable qualification can be maintained with less flying. In addition, 72 percent of the 112X0 sample perform regular temporary duty (TDY), and alert duty is regularly performed by 73 percent. Another responsibility of the 112X0 personnel is that of supporting Strategic Projection Force Operations, where 59 percent of the 112X0 respondents report participation.

Due to the similarity of job performance by 112X0 personnel, examination of career ladder jobs was performed by job title, as opposed to the usual process of diagram analysis. Initial job group analysis by diagram indicated groups of line boom operators, managers, and several separate groups of instructors. Since many of the diagram groupings were almost identical, it was apparent the high degree of common task performance by respondents made differentiation among these groups difficult due to the relatively small task performance differences. Since the job titles in the job inventory were more discrete, analysis by job title was decided upon as a convenient means of identifying the different jobs performed in the field. The pie-chart (Figure 1) illustrates the relationship between 112X0 jobs.

To facilitate discussion, job titles were categorized into three composite groupings: Line Boom Operators, Instructors, and Managers. Within the Line Boom Operators, personnel indicating the job title "Line Boom Operator" are compared according to the aircraft in which they report being currently qualified. The conglomerate group of Line Boom Operators will then be compared to the composite Instructor and composite Manager groups in the Comparison of Specialty Jobs subsection.

position for the boom operator. On the average, members perform 86 tasks. Table 12 provides those tasks which best differentiate line boom operators assigned to different aircraft. They perform fewer preflight and postflight functions than other line boom operators.

KC-10A Line Boom Operators have a higher average grade (E-5) than some other aircraft line boom operators. This is understandable, given the fact that training occurs at Barksdale AFB LA after incumbents have already qualified as 5-skill level boom operators on the KC-135 aircraft. Consistent with this, many of the 24 respondents in this survey who indicated a present qualification in the KC-10A aircraft reported job titles other than that of "Line Boom Operator". Also, the average TAFMS for the group is the highest of any group at 114 months. Only 23 percent of the group perform regular alert duty.

C. KC-135A Line Boom Operators (SPC060). With 255 members, this was by far the largest group of line boom operators identified. This correlates with the fact that the present Air Force inventory contains 580 KC-135A aircraft.\* The job of KC-135A line boom operators is very similar to that of the composite line boom operator's job. Commonly performed tasks for the KC-135A line boom operators are available in Appendix A, Table A3. On the average, 96 tasks are performed by KC-135A line boom operators.

The average TAFMS for this group is the lowest of any of the four aircraft line boom operators at 61 months. Also, this group has the lowest concentration of incumbents overseas--only three percent. Ninety-seven percent of KC-135A line boom operators perform regular alert duty.

D. KC-135Q Line Boom Operators (SPC061). Twenty of the 30 survey respondents who reported present qualification in the KC-135Q aircraft also had a job title of "Line Boom Operator". This group of 20 operates refueling booms in a present Air Force fleet of 54 KC-135Q aircraft.\* As with the other line boom operators, their job does not greatly differ from that of the composite line boom operator's group. Some common tasks performed by this group appear in Appendix A, Table A4. On the average, members perform 96 tasks.

KC-135Q line boom operators average 69 months TAFMS and a grade of E-4. Only 25 percent of the group perform regular alert duty. Ninety-five percent regularly perform temporary duty (TDY).

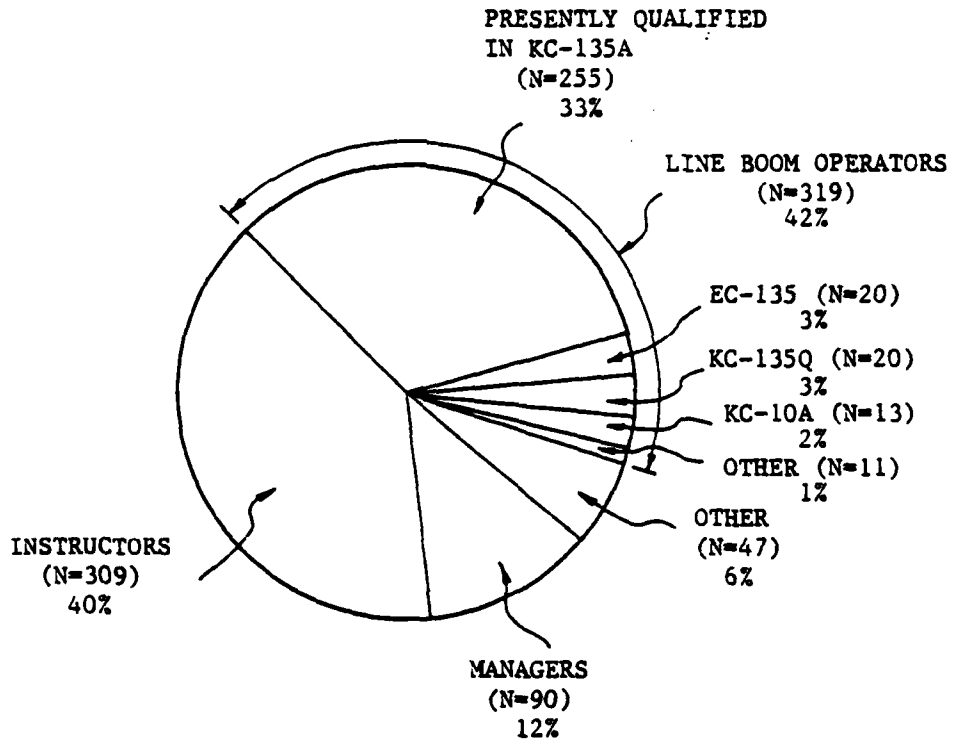
Summary Comparison of Line Boom Operators. The job of line boom operators is much the same, regardless of aircraft assignment. Those qualified in the EC-135 perform loadmaster functions less frequently than other line boom operators, and they seldom work with drogue air refueling systems. The KC-10A line boom operators are more experienced than the others. Their job includes fewer preflight and postflight functions than the others. The KC-135A line boom operators are the most common and tend to

\*Data on Series 135 aircraft carrying booms obtained from the Logistics Officer, 135 Systems Management Branch, Tinker AFB OK. These data are current for October 1982.



FIGURE 1

DISTRIBUTION OF 112X0 SAMPLE ACCORDING TO JOB TITLE  
(SAMPLE SIZE, N=765)



The Instructors category includes all personnel who indicated a job title with "instructor" in it. Similarly, the Managers' category includes all personnel who indicated a job title with "manager" in it. In addition, the Managers grouping includes all personnel who reported the job title of Combat Evaluation Group Flight Examiner Boom Operator, since their job was deemed closest to that of the Managers.

A complete listing of the job titles included in the 112X0 occupational inventory, along with the number of survey respondents indicating these titles, follows:

<u>JOB TITLE</u>	<u>NUMBER OF RESPONDENTS</u>
LINE BOOM OPERATORS (SPC047)	319
INSTRUCTOR BOOM OPERATORS (SPC046)	170
STANDARDIZATION/EVALUATION INSTRUCTOR BOOM OPERATORS (SPC048)	79
UNIT INFLIGHT REFUELING PROGRAM MANAGERS (SPC050)	42
CCTS FLIGHT INSTRUCTOR BOOM OPERATORS (SPC044)	37
ALERT FORCE MANAGERS (SPC040)	25
COMBAT EVALUATION GROUP FLIGHT EXAMINER BOOM OPERATORS (SPC045)	13
TANKER SCHEDULING MANAGERS (SPC049)	10
CENTRAL FLIGHT INSTRUCTOR COURSE INSTRUCTORS (SPC042)	9
CCTS ACADEMIC INSTRUCTOR BOOM OPERATORS (SPC043)	7
BOOM OPERATOR PART TASK TRAINERS (SPC041)	7
NO JOB TITLE, OR JOB TITLE NOT LISTED	46

Special numbers (SPCXXX) are used to identify certain groups of respondents on computer printouts. These printouts are provided to training officials for their use in establishing and evaluating training programs.

The composite groups and their respective component job-title subgroups are discussed below. Several tables with comparative data on the composite groups are provided at the end of this section. Table 6 compares composite groups in the area of time spent on duties; Table 7 provides background information and job attitudes; Table 8 compares composite groups and their components on job difficulty; and Tables 9, 10, and 11 provide common tasks performed by the composite groups. Table 12 provides tasks best differentiating the component groups of line boom operators, with Table 13 providing background information for these groups. Tables 14 and 15 provide comparative background information for the instructor and management component groups, respectively. Three appendices at the end of this report contain representative tasks for the composite subgroups: Appendix A for the Line Boom Operator subgroups, Appendix B for the Instructor subgroups, and Appendix C for the Manager subgroups.

I. LINE BOOM OPERATORS (SPC047). Three-hundred nineteen respondents reported a job title of Line Boom Operator. Their job consists of operating the refueling boom during air-to-air refueling operations, performing aircrew duties, and performing loadmaster functions. Thirty-nine percent of their job time is spent in the performance of common aircrew tasks (see Table 6). Members perform an average of 95 tasks, some examples of which are listed in Table 9.

As Table 7 reflects, 69 percent of the Line Boom Operators hold a 5-skill level DAFSC and 41 percent are in their first enlistment. Seventy-two percent qualify as "mission ready" and 67 percent support strategic projection force operations. Figure 1 illustrates that the KC-135A is by far the most common aircraft to which boom operators are assigned; however, the EC-135, KC-135Q, and KC-10A have a number of line boom operators assigned as well. Consequently, in an attempt to discern how inflight refueling operator's jobs may differ with assignment to different aircraft, line boom operators were compared according to their assignment in one of the four common boom operations aircraft.

A. EC-135 Line Boom Operators (SPC058). Twenty line boom operators reported being currently qualified in the EC-135 aircraft. Thirty-eight EC-135 aircraft in the current Air Force inventory are equipped with a refueling capacity and carry a boom operator on board.\* As might be expected, though, the refueling aspect is a secondary mission for these aircraft. On the average, EC-135 line boom operators perform 87 tasks. Tasks performed are much the same as those presented for the composite line boom operator's group, with the exception that only 11 percent of the EC-135 line boom operators' job time is spent performing loadmaster functions. Table A1, Appendix A, lists examples of the common tasks performed by these personnel.

In addition, Table 12 provides a number of tasks which best differentiate line boom operators according to their present aircraft assignment. As illustrated, drogue air refueling systems are operated by less EC-135 line boom operators than other boom operators.

E-5 is the average grade of these incumbents, with 70 percent of the group holding a 5-skill level DAFSC. In line with this, the average total active federal military service (TAFMS) is 49 months for the group. A higher percentage of EC-135 boom operators was assigned overseas (20 percent) than is common for the 112X0 career field as a whole (only five percent assigned overseas). As might be expected from EC-135 line boom operators, 95 percent perform regular alert duty.

B. KC-10A Line Boom Operators (SPC059). The 13 members of this group perform refueling operations from the KC-10A aircraft. Their job is similar to that of the composite group line boom operators; however, the KC-10A incorporates some technological innovation allowing a more comfortable

\*Data on Series 135 aircraft carrying booms obtained from the Logistics Officer, 135 Systems Management Branch, Tinker AFB OK. These data are current for October 1982.

define the norm by which the other aircraft line boom operators are compared. The KC-135Q job tends to be very similar to that of the KC-135A line boom operators. As Table 13 reflects, job satisfaction was comparable and high for all groups at the time of this survey.

II. INSTRUCTORS (SPC062). Three hundred and eight respondents indicated a job title connected with instruction. Six separate groupings emerged, with Instructor Boom Operators comprising the largest individual grouping. Since almost all instructors remain proficient in the technical aspects of inflight refueling, the composite Instructor group's job is very technical. Presently, there is no limit on the amount of instructors a squadron may have and, as a result, many boom operators return to receive their instructor training within a few years of their initial entry into the career ladder.

Table 10 provides a list of common tasks performed by the Instructors composite group. On the average, instructors perform 116 tasks, most of which are technical. Table 6 supports this, showing that the instructors composite group has a very technical job. Sixty-five percent of them have 7-skill level DAFSCs. Thus, although the instructors have a technical job, they have an intermediate level of experience between the line boom operators and the managers (see Table 7). Examination of the various instructor job title groups within the composite group will reveal the diversity within these jobs.

A. Instructor Boom Operators (SPC046). The 170 respondents reporting this job title have a very technical job. They average the performance of 117 tasks, some examples of which are listed in Appendix B, Table B1. Common aircrew tasks and inflight air refueling and cruising functions are the main concentration of Instructor Boom Operators; 54 percent of their job time is spent in these areas. Eight percent of their job time is spent performing training tasks. Consequently, though their title implies otherwise, their main job is technically similar to the line boom operators and instruction is only a minor part of their job. In the instruction area, though, 82 percent of the group conduct receiver category training and 44 percent conduct on-the-job training (OJT).

Instructor Boom Operators have an average grade of E-5 and 83 percent of them are currently qualified at the "mission ready" training level (see Table 14). Only five percent of the group report supervising others. Nine percent are stationed overseas.

B. Standardization and Evaluation Instructor Boom Operators (SPC046). Another instructor group with nine percent of their members located overseas is the Standardization and Evaluation Instructor Boom Operators group. The 79 respondents with this job title fly with line boom operators and evaluate their performance. They usually belong to a separate unit than the operators they evaluate, with 67 percent of them assigned to a wing-level organization. Performing an average of 120 tasks, common aircrew tasks and inflight refueling and cruising functions consume much of their job time. Table B2 in Appendix B provides a list of some of their most commonly performed tasks.

Eighty-six percent of the Stan/Eval Instructor Boom Operators hold a 7-skill level DAFSC (see Table 14). Seventy-seven percent are qualified at the "mission ready" training level. Only 37 percent are in a unit tasked with supporting strategic projection force operations. Their job difficulty is the third highest of the instructor groups at 14.9 (see Table 8).

C. Combat Crew Training School (CCTS) Flight Instructor Boom Operators (SPC044). These 37 respondents conduct the second phase of CCTS. After students finish the academic training for inflight refuelers, they continue on with flight training provided by these instructors. As with the other instructors, CCTS Flight Instructor Boom Operators spend much of their job time performing common aircrew tasks and inflight air refueling and cruising functions. They also spend 16 percent of their job time training. On the average, these flight instructors perform 104 tasks. Table B3, Appendix B, lists a number of common tasks performed by this group.

Seventy-eight percent of these group members hold a 7-skill level DAFSC. As might be expected, given their lesser number of tasks performed, the CCTS Flight Instructor Boom Operators have the least difficult job--JDI=12.5 (see Table 8). Thirty percent of these group members supervise other personnel.

D. Combat Crew Training School Academic Instructor Boom Operators (SPC043). Seven respondents reported an assignment as a CCTS Academic Instructor Boom Operator. They conduct the academic portion of basic technical training for incoming 112X0 personnel. Twenty-three percent of their job time is spent in the area of training. As with the other instructors, they also perform inflight refueling duties regularly as well. On the average, these academic instructors perform 121 tasks (see Table 14). Some common tasks are listed in Appendix B, Table B4.

In line with the number of tasks they perform and the diversity of their job, theirs is rated the second most difficult of all the instructor jobs, with JDI=16.2 (see Table 8). As might be expected from personnel whose job is academically oriented, only 14 percent of these instructors report a current qualification of "mission ready" for their training level. All members of the group hold 7-skill level DAFSCs.

One instructor group trains boom operators to be instructors. That group is the Central Flight Instructor Course Instructors.

E. Central Flight Instructor Course (CFIC) Instructors (SPC042). As mentioned above, the nine respondents with this job title train regular boom operators to be instructors. Along with their training responsibilities, which consume nine percent of their job time, they perform standard inflight refueling tasks. Common aircrew tasks take up 28 percent of their job time. Table B5, Appendix B, lists several of the common tasks performed by these instructors. They average performing 134 tasks. "Performing reverse refueling" was performed by all members of this group but not by many of the other instructor groups.

This group is the most experienced instructor group identified, with an average grade of E-7. They also have the most difficult instructor job identified, JDI=16.8 (see Table 8). No member of this group is presently "mission ready"; rather, all members are "mission capable".

F. Boom Operator Part Task Trainers (SPC041). The seven members of this group train personnel on boom operation simulators. These simulators train only the actual boom operations part of the 112X0 job, which explains why this group's job title includes "...Part Task..." As with the other instructors, Part Task Trainers remain boom-operator proficient, most to the "mission capable" level of training. Their actual duty of training others comprises 17 percent of their job time. They perform an average of 94 tasks, with some of those most commonly performed listed in Table B6.

Eighty-six percent of the Boom Operator Part Task Trainers hold a 7-skill level DAFSC. Twenty-nine percent report supervising other personnel (see Table 14). In addition, 43 percent of the group support strategic projection force operations.

This concludes the discussion of each instructor group individually; now, a comparison of the groups is in order.

Summary Comparison of Instructor Groups. All instructor groups spend the majority of their job time on boom operations, with training being an additional portion of their job. Of instructors, the Instructor Boom Operators have the most technical job, with training being a lesser responsibility. Standardization and Evaluation Instructor Boom Operators usually are assigned at the wing-level and evaluate the performance of other boom operators. CCTS Flight Instructor Boom Operators provide flight training for the second phase of resident boom operations training. CCTS Academic Instructor Boom Operators provide the academic instruction for 112X0 resident course training. CFIC Instructors train boom operators to be instructors. Finally, Boom Operator Part Task Trainers train individuals in boom operation using simulators.

All of the instructors are satisfied with their job overall. The Boom Operator Part Task Trainers find their job less interesting than the other instructors (see Table 14). There are no other areas of job satisfaction in which less than 85 percent of an instructor group is satisfied.

III. MANAGERS (SPC063). Ninety respondents formed this group. Of the four sub-groups, three have "manager" in their job title. The fourth is a group of Combat Evaluation Group Flight Examiner Boom Operators who were best categorized with the managers. The managers spend 40 percent of their job time in the areas of organizing, planning, directing, implementing, inspecting, evaluating, and training (see Table 6). They perform an average of 137 tasks and, as Table 11 reveals, are a homogeneous group, with technical tasks remaining a large part of their job.

The average grade for this composite group is E-7 and 47 percent of the group supervise others. Sixty percent have a current training qualification of "mission capable."

A. Unit Inflight Refueling Program Managers (SPC050). The 42 members of this group supervise and perform inflight refueling operations. On the average, they perform 146 tasks. Table C1, Appendix C, provides a list of some of the commonly performed tasks. Some of the tasks performed by this group, but few others, include\*:

Supervise AFSC 11250 or 11270 (98%)  
Conduct receiver category training (90%)  
Determine work priorities (81%)  
Assign personnel to duty positions (74%)

This group of managers has the job rated most difficult, with JDI=19.5 (see Table 8). Table 15 reveals that the average grade of group members is between E-7 and E-8. Forty-one percent of the group are qualified at the "mission ready" training level. In addition, 41 percent of this group of managers also support strategic projection force operations.

B. Alert Force Managers (SPC040). The main job of this group of 25 is managing 112X0 refueling operations for aircraft assigned to the Alert Force. This includes managing the Alert Force ground facility and keeping the aircrews comfortable. On the average, Alert Force Managers perform 132 tasks. Table C2, Appendix C, provides a list of the more common tasks performed.

Most Alert Force Managers are qualified at the "mission capable" training level. Their average grade is E-7 and 72 percent report supervising other personnel (see Table 15). They have the second most difficult managerial job--JDI=17.7. In addition, 44 percent support strategic projection force operations.

C. Combat Evaluation Group Flight Examiner Boom Operators (SPC045). Unlike the Alert Force Managers, the Combat Evaluation Group Flight Examiner Boom Operators spend only 15 percent of their time supporting the strategic projection force operations. The 13 members of this group are assigned at the major command level of organization. They evaluate new system developments, utilization of personnel, and standardization programs. Tasks they perform that few other groups do are\*:

Administer proficiency checks (85%)  
Administer standardization board checks (85%)  
administer recurrency checks (69%)

\* Number in parentheses is the percentage of these managers performing task.

The average grade of these personnel is between E-7 and E-8. Eighty-five percent hold a 7-skill level DAFSC (see Table 15). Only 15 percent of this group are assigned to a unit tasked with supporting strategic projection force operations. Only eight percent of the group supervise others.

D. Tanker Scheduling Managers (SPC049). The 10 members of this group perform a job focusing on administrative responsibilities. As Appendix C, Table C4, illustrates, they fill out a variety of forms, participate in debriefings, and maintain the currency of manuals. They perform an average of 131 tasks.

Tanker Scheduling Managers have an average grade between E-6 and E-7. Thirty percent of this group supervise other personnel and 30 percent are in units supporting strategic projection force operations. Additionally, 10 percent of the group are assigned overseas (see Table 15).

Survey Comparison of Manager Groups. Unit Inflight Refueling Managers fly frequently and manage the refueling operations of their unit. Alert Force Managers manage the inflight refueling aspect of the Alert Force and assist aircrews as required. Combat Evaluation Group Flight Examiner Boom Operator's evaluate programs, new systems, and personnel. Finally, Tanker Scheduling Managers perform many administrative duties connected with the inflight refueling operations.

Concerning job satisfaction, the Tanker Scheduling Managers have the fewest members finding their job interesting, with 80 percent finding it so. The Alert Force Managers are the least satisfied with training (84 percent feel their training is at least fairly well utilized). Some of the managerial groups have low reenlistment intentions, but that is due to those personnel who are retiring (see Table 15).

#### Comparison of Composite Groups

The three composite groups have a lot of overlap in the area of common aircrew duties and inflight refueling duties. Therefore, the technical aspect of the 112X0 job is much the same, regardless of one's job title. Instructors have additional training responsibilities over Line Boom Operators and, for Managers, managerial duties are more prominent; but the technical aspect of the boom operator's job--as represented by the Line Boom Operators--remains similar.

As illustrated in Table 7, over 90 percent of the members of all three groups find their job interesting. The managers most feel their talents are used (98 percent), with a high majority of Line Boom Operators and Instructors also finding their talents well utilized. Feelings that their training is well utilized dominate all three groups, with over 90 percent of all groups indicating this. Around 90 percent of each group are satisfied with their sense of accomplishment. Plans to reenlist run from 78 percent for the Line Boom Operators, through 90 percent for the Instructors, to 77 percent for the Managers (16 percent of the Managers plan to retire). In summary, 112X0 personnel have positive attitudes about their job, no matter what their general area of job performance.



### Job Difficulty Index (JDI)

To conclude the Specialty Job section, an examination of the relative difficulty of each job is in order. Table 8 presents each job analyzed in the section, along with its JDI, ATDPUTS, and average number of tasks performed. As Table 7 shows, the progression in average grade and experience (TAFMS) increases from Line Boom Operators, through Instructors, to Managers. Combined with Table 8, this shows that the 112X0 job gets more difficult with increasing experience in the career ladder. The job broadens (as indicated by the average number of tasks performed) with experience as well, and this helps to explain the increasing difficulty. As can be seen, the average difficulty of the tasks performed per unit time spent, as measured by the ATDPUTS factor, does not vary greatly across groups but it generally does increase from Line Boom Operators to Managers. It is worth mentioning that the tasks rated most difficult are managerial in nature (see Table 16, Descending Order of Task Difficulty, for a listing of tasks as to their task difficulty ratings).

In summary, the 112X0 jobs progress in difficulty from the Line Boom Operators, through the Instructors, to the most difficult jobs of the Managers.

TABLE 3

## PERCENT TIME SPENT ON DUTIES BY 112X0 TOTAL SAMPLE

<u>DUTIES</u>	<u>TOTAL SAMPLE (N=765)</u>
A ORGANIZING AND PLANNING	3
B DIRECTING AND IMPLEMENTING	4
C INSPECTING AND EVALUATING	3
D TRAINING	6
E PERFORMING COMMON AIRCREW TASKS	34
F PERFORMING PREFLIGHT AND POSTFLIGHT FUNCTIONS	15
G PERFORMING INFLIGHT AIR REFUELING AND CRUISING FUNCTIONS	21
H PERFORMING LOADMASTER FUNCTIONS	14

TABLE 4

COMMON TASKS PERFORMED BY MOST 112X0 PERSONNEL  
(PERCENT MEMBERS PERFORMING)

TASKS	TOTAL SAMPLE N=765
E126 OPEN OR CLOSE CREW ENTRANCE DOORS	96
G202 PERFORM POST AIR REFUELING CHECKLIST PROCEDURES	96
G206 REFUEL RECEIVER AIRCRAFT WITH BOOM REFUELING NORMAL SYSTEMS	96
E135 PARTICIPATE IN CREW MAINTENANCE DEBRIEFINGS	96
G201 PERFORM OR PRACTICE TANKER AIR REFUELING BREAKAWAY PROCEDURES	96
G203 PERFORM PREPARATION FOR CONTACT CHECKLIST PROCEDURES FOR NORMAL AIR REFUELING	96
E117 DEMONSTRATE TO PASSENGERS THE PROPER USE OF LIFE PRESERVERS, PARACHUTES, OR OXYGEN MASKS	96
G193 MONITOR FUEL PANELS	95
E124 MAKE ENTRIES ON AFTO FORMS 781A (MAINTENANCE DISCREPANCY AND WORK DOCUMENT)	95
G204 PERFORM PREPARATION FOR CONTACT CHECKLIST PROCEDURES FOR TANKER MANUAL AIR REFUELING	95
G211 VERBALLY DIRECT RECEIVER AIRCRAFT INTO REFUELING POSITION	95
E123 MAINTAIN CURRENCY OF FLIGHT MANUALS, SAFETY AND OPERATIONAL SUPPLEMENTS, AND FLIGHT CREW CHECKLISTS	95
E125 MONITOR RADIO COMMUNICATIONS	95
E130 OPERATE GALLEY EQUIPMENT, SUCH AS OVENS OR COFFEE MAKERS	95
G207 REFUEL RECEIVER AIRCRAFT WITH BOOM REFUELING TANKER MANUAL OPERATION	94
G196 PERFORM BOOM REFUELING SYSTEM OPERATIONAL CHECKS	94
E141 PARTICIPATE IN PERMISSION WEATHER BRIEFINGS	94
G191 MONITOR ENGINE INSTRUMENTS	94
E133 ORDER AIRCREW FLIGHT LUNCHES	94
G192 MONITOR FLIGHT INSTRUMENTS	93
G210 TAKE INFLIGHT CELESTIAL OBSERVATIONS	93
H213 COMPUTE DD FORMS 365F (WEIGHT AND BALANCE CLEARANCE) USING LOAD ADJUSTER	93
G198 PERFORM NORMAL INFLIGHT CHECKLISTS OTHER THAN AIR REFUELING	93
G194 OPERATE AIR-CONDITIONING CONTROLS	93
E122 LOAD CREW GEAR ON AIRCRAFT	93
E152 PICK UP COFFEE JUGS, WATER JUGS, OR OVENS	93
E121 INSTRUCT EXTRA CREW MEMBERS OR PASSENGERS ON INFLIGHT OR GROUND EMERGENCY PROCEDURES	93

NOTE: 41 TASKS HAD OVER 90 PERCENT OF THE 112X0 SAMPLE PERFORMING THEM

TABLE 5

BACKGROUND INFORMATION ON 112X0 TOTAL SAMPLE  
(N=765)

CURRENT QUALIFICATION RATINGS

<u>AIRCRAFT</u>	<u>TOTAL NUMBER RESPONDING</u>
C-135	9
EC-135	71
KC-10A	24
KC-135A	594
KC-135Q	30

QUALIFIED TRAINING LEVEL

<u>LEVEL</u>	<u>TOTAL NUMBER RESPONDING</u>
BASIC ONLY	24
MISSION CAPABLE	210
MISSION READY	505

TEMPORARY DUTY (TDY) INFORMATION

<u>AVERAGE DAYS/MONTH TDY</u>	<u>TOTAL NUMBER RESPONDING</u>
NONE	215
1-7	285
8-14	120
15-21	37
22-31	107

TIME ON ALERT DUTY

<u>AVERAGE DAYS/MONTH ON ALERT DUTY</u>	<u>TOTAL NUMBER RESPONDING</u>
NONE	209
1-7	132
8-14	331
15-21	39
22-31	49

TABLE 6

## PERCENT TIME SPENT ON DUTIES BY COMPOSITE JOBS

<u>DUTY</u>	<u>LINE BOOM OPERATORS (N=319)</u>	<u>INSTRUCTORS (N=308)</u>	<u>MANAGERS (N=90)</u>
A ORGANIZING AND PLANNING	1	3	10
B DIRECTING AND IMPLEMENTING	1	5	11
C INSPECTING AND EVALUATING	*	3	8
D TRAINING	1	9	12
E PERFORMING COMMON AIRCREW TASKS	39	32	24
F PERFORMING PREFLIGHT AND POSTFLIGHT FUNCTIONS	17	15	10
G PERFORMING INFLIGHT AIR REFUELING AND CRUISING FUNCTIONS	25	20	15
H PERFORMING LOADMASTER FUNCTIONS	16	13	10

\* DENOTES LESS THAN ONE PERCENT

TABLE 7

## BACKGROUND INFORMATION ON COMPOSITE GROUPS

	LINE BOOM OPERATORS (N=319)	INSTRUCTORS (N=308)	MANAGERS (N=90)
AVERAGE NUMBER OF TASKS PERFORMED	95	116	137
<u>*DAFSC DISTRIBUTION:</u>			
11230	20%	1%	1%
11250	69%	31%	7%
11270	11%	65%	33%
11290	0%	2%	40%
11200	0%	1%	17%
<hr/>			
*PERCENT MEMBERS IN FIRST ENLISTMENT	41%	5%	0%
*PERCENT MEMBERS SUPERVISING	1%	14%	47%
JOB DIFFICULTY INDEX (JDI)	10.0	14.0	18.1
AVERAGE TASK DIFFICULTY PER UNIT TIME SPENT (ATDPUTS)	4.3	4.6	4.9
<hr/>			
<u>*AIRCRAFT PRESENTLY QUALIFIED IN:</u>			
EC-135	6%	12%	8%
KC-10A	4%	1%	2%
KC-135A	80%	82%	67%
KC-135Q	6%	3%	1%
<hr/>			
AVERAGE GRADE	E-4	E-5/6	E-7
<hr/>			
<u>*TRAINING LEVEL CURRENTLY QUALIFIED:</u>			
BASIC ONLY	3%	1%	9%
MISSION READY	72%	77%	29%
MISSION CAPABLE	24%	20%	60%
<hr/>			
*PERCENT MEMBERS ASSIGNED OVERSEAS	4%	8%	7%
*UNIT TASKED WITH SUPPORTING STRATEGIC PROJECTION FORCE OPERATIONS	67%	57%	49%
<hr/>			
<u>*JOB ATTITUDES:</u>			
FIND JOB INTERESTING	93%	92%	91%
FEEL TALENTS AT LEAST FAIRLY WELL UTILIZED	88%	92%	98%
FEEL TRAINING AT LEAST FAIRLY WELL UTILIZED	96%	93%	90%
SATISFIED WITH SENSE OF ACCOMPLISHMENT	88%	89%	92%
PLAN TO REENLIST	78%	90%	77%

\* PERCENT MEMBERS RESPONDING

\*\* DENOTES LESS THAN ONE PERCENT

TABLE 8

## 112X0 JOBS COMPARED ON JOB DIFFICULTY INDEX (JDI)

<u>JOBS</u>	<u>JDI*</u>	<u>ATDPUTS**</u>	<u>AVERAGE NUMBER OF TASKS PERFORMED</u>
I. LINE BOOM OPERATORS (SPC047, N=319)	10.0	4.3	95
A. EC-135 LINE BOOM OPERATORS (SPC058, N=20)	8.8	4.3	89
B. KC-10A LINE BOOM OPERATORS (SPC059, N=13)	10.0	4.5	86
C. KC-135A LINE BOOM OPERATORS (SPC060, N=255)	10.0	4.3	96
D. KC-135Q LINE BOOM OPERATORS (SPC061, N=30)	10.3	4.4	96
II. INSTRUCTORS (SPC062, N=308)	14.0	4.6	116
A. INSTRUCTOR BOOM OPERATORS (SPC046, N=170)	13.8	4.5	117
B. STANDARDIZATION AND EVALUATION INSTRUCTOR BOOM OPERATORS (SPC046, N=79)	14.9	4.3	120
C. CCTS FLIGHT INSTRUCTOR BOOM OPERATORS (SPC044, N=37)	12.5	4.6	104
D. CCTS ACADEMIC INSTRUCTOR BOOM OPERATORS (SPC043, N=7)	16.2	4.7	121
E. CFIC INSTRUCTORS (SPC042, N=9)	16.8	4.7	134
F. BOOM OPERATOR PART TASK TRAINERS (SPC041, N=7)	13.6	4.9	94
III. MANAGERS (SPC063, N=90)	18.1	4.9	137
A. UNIT INFLIGHT REFUELING PROGRAM MANAGERS (SPC050, N=42)	19.5	5.0	146
B. ALERT FORCE MANAGERS (SPC040, N=25)	17.7	4.9	132
C. COMBAT EVALUATION GROUP FLIGHT EXAMINER BOOM OPERATORS (SPC045, N=13)	16.2	4.8	124
D. TANKER SCHEDULING MANAGERS (SPC049, N=10)	16.2	4.7	131

TABLE 9  
COMMON TASKS PERFORMED BY LINE BOOM OPERATORS  
(SPC047)

TASKS	PERCENT MEMBERS PERFORMING (N=319)	
E126	OPEN OR CLOSE CREW ENTRANCE DOORS	99
E135	PARTICIPATE IN CREW MAINTENANCE DEBRIEFINGS	98
G206	REFUEL RECEIVER AIRCRAFT WITH BOOM REFUELING NORMAL SYSTEMS	98
G202	PERFORM POST AIR REFUELING CHECKLIST PROCEDURES	98
G203	PERFORM PREPARATION FOR CONTACT CHECKLIST PROCEDURES FOR NORMAL AIR REFUELING	97
E133	ORDER AIRCREW FLIGHT LUNCHES	97
E124	MAKE ENTRIES ON AFTO FORMS 781A (MAINTENANCE DISCREPANCY AND WORK DOCUMENT)	97
E117	DEMONSTRATE TO PASSENGERS THE PROPER USE OF LIFE PRESERVERS, PARACHUTES, OR OXYGEN MASKS	97
G201	PERFORM OR PRACTICE TANKER AIR REFUELING BREAKAWAY PROCEDURES	97
G211	VERBALLY DIRECT RECEIVER AIRCRAFT INTO REFUELING POSITION	97
G193	MONITOR FUEL PANELS	97
G204	PERFORM PREPARATION FOR CONTACT CHECKLIST PROCEDURES FOR TANKER MANUAL AIR REFUELING	97
E152	PICK UP COFFEE JUGS, WATER JUGS, OR OVENS	96
G196	PERFORM BOOM REFUELING SYSTEM OPERATIONAL CHECKS	96
E130	OPERATE GALLEY EQUIPMENT, SUCH AS OVENS OR COFFEE MAKERS	95
E125	MONITOR RADIO COMMUNICATIONS	95
G212	VISUALLY DIRECT RECEIVER AIRCRAFT INTO REFUELING POSITION	95
G207	REFUEL RECEIVER AIRCRAFT WITH BOOM REFUELING TANKER MANUAL OPERATION	95
G198	PERFORM NORMAL INFLIGHT CHECKLISTS OTHER THAN AIR REFUELING	95
G191	MONITOR ENGINE INSTRUMENTS	95
G194	OPERATE AIR-CONDITIONING CONTROLS	95
E141	PARTICIPATE IN PERMISSION WEATHER BRIEFINGS	95
E151	PICK UP AND INSPECT FLIGHT LUNCHES	95
H213	COMPUTE DD FORMS 365F (WEIGHT AND BALANCE CLEARANCE) USING LOAD ADJUSTER	94
E122	LOAD CREW GEAR ON AIRCRAFT	94
E123	MAINTAIN CURRENCY OF FLIGHT MANUALS, SAFETY AND OPERATIONAL SUPPLEMENTS, AND FLIGHT CREW CHECKLISTS	94
G210	TAKE INFLIGHT CELESTIAL OBSERVATIONS	94
E155	SECURE EQUIPMENT FOR FLIGHT OPERATIONS	94
F162	ALIGN SEXTANT	93
H230	SUPERVISE PASSENGERS ON NORMAL MISSIONS	93
E159	TURN IN COFFEE JUGS, WATER JUGS, OR OVENS	93



TABLE 10  
COMMON TASKS PERFORMED BY INSTRUCTOR BOOM OPERATORS  
(SPC062)

TASKS	PERCENT MEMBERS PERFORMING (N=308)
G206 REFUELING RECEIVER AIRCRAFT WITH BOOM REFUELING NORMAL SYSTEMS	96
G202 PERFORM POST AIR REFUELING CHECKLIST PROCEDURES	96
E123 MAINTAIN CURRENCY OF FLIGHT MANUALS, SAFETY AND OPERATIONAL SUPPLEMENTS, AND FLIGHT CREW CHECKLISTS	95
G207 REFUEL RECEIVER AIRCRAFT WITH BOOM REFUELING TANKER MANUAL OPERATIONS	95
E117 DEMONSTRATE TO PASSENGERS THE PROPER USE OF LIFE PRESERVERS, PARACHUTES, OR OXYGEN MASKS	91
E125 MONITOR RADIO COMMUNICATIONS	95
G193 MONITOR FUEL PANELS	95
E141 PARTICIPATE IN PERMISSION WEATHER BRIEFINGS	95
G210 TAKE INFIGHT CELESTIAL OBSERVATIONS	95
E126 OPEN OR CLOSE CREW ENTRANCE DOORS	95
G191 MONITOR ENGINE INSTRUMENTS	94
G203 PERFORM PREPARATION FOR CONTACT CHECKLIST PROCEDURES FOR NORMAL AIR REFUELING	94
G192 MONITOR FLIGHT PREPARATIONS	94
E135 PARTICIPATE IN CREW MAINTENANCE DEBRIEFINGS	94
G196 PERFORM BOOM REFUELING SYSTEM OPERATIONAL CHECKS	94
G194 OPERATE AIR-CONDITIONING CONTROLS	94
E152 PICK UP COFFEE JUGS, WATER JUGS, OR OVENS	94
E133 ORDER AIRCREW FLIGHT LUNCHES	94
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D84 CONDUCT RECEIVER CATEGORY TRAINING	71
D90 DEMONSTRATE HOW TO LOCATE TECHNICAL INFORMATION	68
D78 ADMINISTER TESTS	64
D83 CONDUCT PROFICIENCY TRAINING	63
D105 PERFORM GROUND TRAINING	57
D85 CONDUCT REMEDIAL TRAINING	57
D109 SCORE TESTS	55

TABLE 11  
COMMON TASKS PERFORMED BY MANAGERS  
(SPC063)

TASKS	PERCENT MEMBERS PERFORMING (N=90)
G201 PERFORM OR PRACTICE TANKER AIR REFUELING BREAKAWAY PROCEDURES	96
G206 REFUELING RECEIVER AIRCRAFT WITH BOOM REFUELING NORMAL SYSTEMS	94
H213 COMPUTE DD FORMS 365F (WEIGHT AND BALANCE CLEARANCE) USING LOAD ADJUSTER	94
G210 TAKE INFLIGHT CELESTIAL OBSERVATIONS	94
E123 MAINTAIN CURRENCY OF FLIGHT MANUALS, SAFETY AND OPERATIONAL SUPPLEMENTS, AND FLIGHT CREW CHECKLISTS	93
G198 PERFORM NORMAL INFLIGHT CHECKLISTS OTHER THAN AIR REFUELING	93
G193 MONITOR FUEL PANELS	93
G191 MONITOR ENGINE INSTRUMENTS	93
G207 REFUEL RECEIVER AIRCRAFT WITH BOOM REFUELING TANKER MANUAL OPERATION	93
E135 PARTICIPATE IN CREW MAINTENANCE DEBRIEFINGS	93
G192 MONITOR FLIGHT INSTRUMENTS	93
G203 PERFORM PREPARATION FOR CONTACT CHECKLIST PROCEDURES FOR NORMAL AIR REFUELING	93
E126 OPEN OR CLOSE CREW ENTRANCE DOORS	93
G196 PERFORM BOOM REFUELING SYSTEM OPERATIONAL CHECKS	93
G204 PERFORM PREPARATION FOR CONTACT CHECKLIST PROCEDURES FOR TANKER MANUAL AIR REFUELING	93
G212 VISUALLY DIRECT RECEIVER AIRCRAFT INTO REFUELING POSITION	92
E124 MAKE ENTRIES ON AFTO FORMS 781A (MAINTENANCE DISCREPANCY AND WORK DOCUMENT)	92
E136 PARTICIPATE IN CREW DEBRIEFINGS	91
E141 PARTICIPATE IN PERMISSION WEATHER BRIEFINGS	91
E117 DEMONSTRATE TO PASSENGERS THE PROPER USE OF LIFE PRESERVERS, PARACHUTES, OR OXYGEN MASKS	91
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B51 WRITE CORRESPONDENCE	86
A3 COORDINATE OPERATIONAL WORK ACTIVITIES WITH OTHER SECTION	81
B25 COUNSEL PERSONNEL ON PERSONAL OR MILITARY-RELATED PROBLEMS	76
A10 ESTABLISH ORGANIZATIONAL POLICIES, OFFICE INSTRUCTIONS (OI), OR STANDARD OPERATIONAL PROCEDURES (SOP)	72
B46 SUPERVISE INFLIGHT REFUELING OPERATORS (AFSC 11250)	71
B29 DIRECT UTILIZATION OF PERSONNEL	69
A11 ESTABLISH PERFORMANCE STANDARDS FOR SUBORDINATES	69

TABLE 12

TASKS BEST DIFFERENTIATING LINE BOOM OPERATORS  
 QUALIFIED IN DIFFERENT AIRCRAFT  
 (PERCENT MEMBERS PERFORMING)

TASKS	EC-135 (N=20)	KC-10A (N=13)	KC-135A (N=255)	KC-135Q (N=20)
F162 ALIGN SEXTANT	95	8	97	95
F164 CONSTRUCT CO-PILOT MAPS	35	8	82	45
F166 FIT PERSONAL OR SPARE PARACHUTES	45	8	64	65
F167 INSTALL ENGINE STARTER CARTRIDGES	35	8	53	55
F169 MAKE ENTRIES ON AFTO FORMS 76 (135 AIR- CRAFT STRUCTURAL ASSESSMENT DATA)	95	8	93	80
F171 PERFORM ALERT CHECKLISTS	95	15	96	90
F180 REFUEL TANKER AIRCRAFT ON GROUND THROUGH SINGLE POINT REFUELING RECEPTACLES	65	15	45	45
F185 STAND FIRE GUARD	50	8	54	70
F186 TAKE GROUND PREFLIGHT CELESTIAL OBSERVATIONS	85	15	95	90
G195 PERFORM BOOM DROGUE AIR REFUELING SYSTEM OPERATIONAL CHECKS	20	92	68	65
G208 REFUEL RECEIVER AIRCRAFT WITH DROGUE	15	69	65	60
G209 REVIEW ACCURACY OF NAVIGATIONAL COMPUTATIONS	45	15	53	55
G210 TAKE INFLIGHT CELESTIAL OBSERVATIONS	100	15	98	90
H214 COMPUTE DD FORMS 365F (WEIGHT AND BALANCE CLEARANCE) USING MOMENTS	0	85	15	25
H225 REVIEW PRELOAD MANIFEST ON CARGO MISSIONS	35	85	74	90
H231 UPDATE WEIGHT AND BALANCE FORMS ON CARGO MISSIONS	30	85	70	80
E156 SELECT MAINTENANCE BREVITY CODES	30	92	52	45
B29 DIRECT UTILIZATION OF PERSONNEL	0	31	4	5
A5 DETERMINE WORK PRIORITIES	5	31	9	15
C62 EVALUATE NEW SYSTEM DEVELOPMENTS, SUCH AS BOOM, DROGUE, OR RECEIVER EQUIPMENT	5	54	3	5
C77 WRITE STAFF STUDIES, SURVEYS, OR SPECIAL REPORTS	0	23	2	0
E148 PERFORM SMALL ARMS QUALIFICATION	25	8	20	70

TABLE 13

BACKGROUND INFORMATION ON LINE BOOM OPERATORS  
BY AIRCRAFT ASSIGNMENT

	AIRCRAFT ASSIGNMENT			
	EC-135 (N=20)	KC-10A (N=13)	KC-135A (N=255)	KC-135Q (N=20)
AVERAGE NUMBER OF TASKS PERFORMED	89	86	96	96
<b>*DAFSC DISTRIBUTION:</b>				
11230	20%	0%	22%	25%
11250	70%	62%	69%	60%
11270	10%	38%	9%	15%
11290	0%	0%	0%	0%
11200	0%	0%	0%	0%
*PERCENT MEMBERS IN FIRST ENLISTMENT	20%	8%	44%	30%
*PERCENT MEMBERS SUPERVISING	5%	0%	**	0%
JOB DIFFICULTY INDEX (JDI)	8.8	10.0	10.0	10.3
AVERAGE TASK DIFFICULTY PER UNIT TIME SPENT (ATDPUTS)	4.3	4.5	4.3	4.4
AVERAGE GRADE	E-5	E-5	E-4	E-4
<b>*TRAINING LEVEL CURRENTLY QUALIFIED:</b>				
BASIC ONLY	0%	15%	2%	0%
MISSION CAPABLE	15%	8%	23%	40%
MISSION READY	80%	77%	73%	60%
*PERCENT MEMBERS ASSIGNED OVERSEAS	20%	8%	3%	5%
*UNIT TASKED WITH SUPPORTING STRATEGIC PROJECTION FORCE OPERATIONS	50%	77%	68%	70%
<b>*JOB ATTITUDES</b>				
FIND JOB INTERESTING	90%	92%	92%	90%
FEL TALENTS AT LEAST FAIRLY WELL UTILIZED	75%	100%	88%	95%
FEL TRAINING AT LEAST FAIRLY WELL UTILIZED	75%	92%	98%	95%
SATISFIED WITH SENSE OF ACCOMPLISHMENT	80%	85%	90%	90%
PLAN TO REENLIST	75%	100%	76%	85%

\* PERCENT MEMBERS RESPONDING

\*\* DENOTES LESS THAN ONE PERCENT

TABLE 14

## BACKGROUND INFORMATION ON INSTRUCTOR GROUPS

	INSTRUCTOR GROUP					BOOM
	INSTRUCTOR BOOM OPERATORS (N=170)	STAN/ EVAL IBOs (N=79)	CCTS FLIGHT IBOs (N=37)	CFIC INSTs (N=9)	CCTS ACAD IBOs (N=7)	OPERATOR PART TASK TRAINERS (N=7)
AVERAGE NUMBER OF TASKS PERFORMED	117	120	104	134	121	94
<b>*DAFSC DISTRIBUTION:</b>						
11230	**	1%	0%	0%	0%	0%
11250	47%	8%	22%	11%	0%	14%
11270	51%	86%	78%	67%	100%	86%
11290	1%	5%	0%	11%	0%	0%
11200	**	0%	0%	11%	0%	0%
*PERCENT MEMBERS IN FIRST-ENLISTMENT	7%	3%	8%	0%	0%	14%
*PERCENT MEMBERS SUPERVISING	5%	1%	30%	33%	71%	29%
JOB DIFFICULTY INDEX (JDI)	13.8	14.9	12.5	16.8	16.2	13.6
AVERAGE TASK DIFFICULTY PER UNIT TIME SPENT (ATDPUTS)	4.5	4.3	4.6	4.7	4.7	4.9
AVERAGE GRADE	E-5	E-6	E-5/6	E-7	E-5/6	E-5/6
<b>*TRAINING LEVEL CURRENTLY QUALIFIED:</b>						
BASIC ONLY	0%	3%	3%	0%	0%	0%
MISSION CAPABLE	15%	18%	8%	100%	86%	71%
MISSION READY	83%	77%	87%	0%	14%	29%
*PERCENT MEMBERS ASSIGNED OVERSEAS	9%	9%	0%	0%	0%	0%
*UNIT TASKED WITH SUPPORTING STRATEGIC PROJECTION FORCE OPERATIONS	66%	37%	62%	67%	43%	43%
<b>*JOB ATTITUDES:</b>						
FIND JOB INTERESTING	91%	95%	97%	100%	86%	57%
FEEL TALENTS AT LEAST FAIRLY WELL UTILIZED	87%	95%	100%	100%	100%	100%
FEEL TRAINING AT LEAST FAIRLY WELL UTILIZED	92%	91%	100%	100%	100%	100%
SATISFIED WITH SENSE OF ACCOMPLISHMENT	85%	87%	100%	100%	100%	100%
PLAN TO REENLIST	88%	91%	92%	100%	100%	86%

\* PERCENT MEMBERS RESPONDING

\*\* DENOTES LESS THAN ONE PERCENT

TABLE 15

## BACKGROUND INFORMATION ON MANAGER GROUPS

	MANAGER GROUPS			
	UNIT INFLIGHT REFUELING PROGRAM MANAGERS (N=42)	ALERT FORCE MANAGERS (N=25)	COMBAT EVALUATION GROUP FLIGHT EXAMINER BO'S (N=13)	TANKER SCHEDULING MANAGERS (N=10)
AVERAGE NUMBER OF TASKS PERFORMED	146	132	124	131
<u>*DAFSC DISTRIBUTION:</u>				
11230	0%	4%	0%	0%
11250	2%	8%	0%	30%
11270	19%	32%	85%	30%
11290	52%	48%	7%	10%
11200	26%	0%	7%	30%
*PERCENT MEMBERS IN FIRST ENLISTMENT	0%	0%	0%	0%
*PERCENT MEMBERS SUPERVISING	48%	72%	8%	30%
JOB DIFFICULTY INDEX (JDI)	19.5	17.7	16.2	16.2
AVERAGE TASK DIFFICULTY PER UNIT TIME SPENT (ATDPUTS)	5.0	4.9	4.8	4.7
AVERAGE GRADE	E-7/8	E-7	E-7/8	E-6/7
<u>*TRAINING LEVEL CURRENTLY QUALIFIED:</u>				
BASIC ONLY	0%	28%	8%	0%
MISSION CAPABLE	55%	56%	77%	70%
MISSION READY	41%	16%	15%	30%
*PERCENT MEMBERS ASSIGNED OVERSEAS	7%	8%	0%	10%
*UNIT TASKED WITH SUPPORTING STRATEGIC PROJECTION FORCE OPERATIONS	41%	44%	15%	30%
<u>*JOB ATTITUDES:</u>				
FIND JOB INTERESTING	91%	96%	92%	80%
FEEL TALENTS AT LEAST FAIRLY WELL UTILIZED	98%	100%	92%	100%
FEEL TRAINING AT LEAST FAIRLY WELL UTILIZED	91%	84%	92%	100%
SATISFIED WITH SENSE OF ACCOMPLISHMENT	93%	92%	92%	90%
PLAN TO REENLIST	74%	72%	85%	90%

\* PERCENT MEMBERS RESPONDING

\*\* DENOTES LESS THAN ONE PERCENT

TABLE 16

## 112XO TASKS RATED HIGHEST IN TASK DIFFICULTY

TASK	TASK DIFFICULTY*
C76 WRITE CIVILIAN PERFORMANCE RATINGS OR SUPERVISORY APPRAISALS	7.33
D94 DEVELOP RESIDENT COURSE OR CAREER DEVELOPMENT COURSE (CDC) CURRICULUM MATERIALS	6.93
C75 PREPARE APRs	6.76
C73 INVESTIGATE MISHAPS OR INCIDENTS	6.74
C77 WRITE STAFF STUDIES, SURVEYS, OR SPECIAL REPORTS	6.73
H214 COMPUTER DD FORMs 365F (WEIGHT AND BALANCE CLEARANCE) USING MOMENTS	6.71
C62 EVALUATE NEW SYSTEM DEVELOPMENTS, SUCH AS BOOM, DROGUE, OR RECEIVER EQUIPMENT	6.62
A9 DRAFT BUDGET OR FINANCIAL REQUIREMENTS	6.61
C56 EVALUATE BUDGET OR FINANCIAL REQUIREMENTS	6.60
A10 ESTABLISH ORGANIZATIONAL POLICIES, OFFICE INSTRUCTIONS (OI), OR STANDARD OPERATING PROCEDURES (SOP)	6.58
A14 PLAN FLIGHT SCHEDULES	6.58
A11 ESTABLISH PERFORMANCE STANDARDS FOR SUBORDINATES	6.46
A18 PLAN STANDARDIZATION PROGRAMS	6.46
B50 UPDATE CONTINGENCY PLANS	6.39
D93 DEVELOP LESSON PLANS	6.36
C58 EVALUATE INDIVIDUALS FOR PROMOTION, DEMOTION, RECLASSIFICATION, OR SPECIAL AWARDS	6.24
A8 DEVELOP WORK METHODS OR PROCEDURES	6.24
B34 IMPLEMENT STANDARDIZATION PRGRMS	6.23
B25 COUNSEL PERSONNEL ON PERSONAL OR MILITARY-RELATED PROBLEMS	6.18
D95 DIRECT OR IMPLEMENT OJT PROGRAMS	6.18
F181 REFUEL TANKER AIRCRAFT ON GROUND THROUGH WING TANKS	6.18
C57 EVALUATE COMPLIANCE WITH PERFORMANCE STANDARDS	6.15
D112 WRITE TEST QUESTIONS	6.11
A20 PREPARE JOB DESCRIPTIONS	6.08
D98 ESTABLISH UNIT TRAINING STANDARDS	6.08
H215 DIRECT CARGO LOADING OR UNLOADING ON CARGO MISSIONS	6.07

\* AVERAGE TD=5.0, STANDARD DEVIATION=1.0

## ANALYSIS OF DAFSC GROUPS

In addition to examining personnel by their job, it is beneficial to look at how their job changes with progression in a career ladder. This is best accomplished by analyzing and comparing the Duty Air Force Specialty Code (DAFSC) groups. Additionally, analysis of DAFSC groups with occupational survey data enables an evaluation of AFR 39-1 Specialty Descriptions in light of this data.

As is the case with a career ladder as homogeneous as the 112X0, the technical tasks performed during inflight refueling are the same for all DAFSCs. The 3- and 5-skill level members have a very similar job, and the 9-skill level and Chief Enlisted Manager (CEM) DAFSCs have a lot of similarity. Enough differences existed to make it worthwhile to discuss three groups: 3- and 5-skill levels combined, the 7-skill level, and the combined 9- and CEM code skill levels.

As illustrated in Table 18, progression in the 112X0 career ladder includes increasing managerial responsibilities. These duties are accompanied by a decreasing percentage of time spent in the technical aspects of the boom operator job. Table 18 reveals that the job broadens from an average performance of 99 tasks for the 3- and 5-skill level group to 139 tasks for the 9- and CEM code skill levels. The job difficulty increases with skill level as well. The amount of regular alert duty, level of current training, and regular temporary duty (TDY) all decrease with progression. In addition, as skill level increases, one is less likely to be tasked with supporting strategic projection force operations.

As demonstrated in Table 19, the actual type of job performed changes somewhat with progression. The 3- and 5-skill level personnel have their greatest concentration in the Line Boom Operators; the 7-skill levels are most heavily distributed in the Instructors, and the 9- and CEM Code DAFSCs are most concentrated in the Managers. Regardless of these differences, however, examination of tasks performed shows much commonality with predictable exception.

Tables 20, 21, and 22 provide the most common tasks performed by each of the three DAFSC groups discussed in this section. As can be seen, there is much commonality across DAFSCs, indicating that the job of 112X0 personnel remains technically similar, regardless of skill level. With progression, the job simply broadens as new responsibilities are assumed.



TABLE 17  
PERCENT TIME SPENT ON DUTIES BY DAFSC GROUPS

DUTIES	11230 AND 11250 (N=389)	11270 (N=287)	11290 AND 11200 (N=84)
A ORGANIZING AND PLANNING	1	4	10
B DIRECTING AND IMPLEMENTING	1	5	13
C INSPECTING AND EVALUATING	*	3	9
D TRAINING	3	10	13
E PERFORMING COMMON AIRCREW TASKS	38	31	22
F PERFORMING PREFLIGHT AND POST FLIGHT FUNCTIONS	17	14	9
G PERFORMING INFLIGHT AIR REFUELING AND CRUISING FUNCTIONS	24	20	14
H PERFORMING LOADMASTER FUNCTIONS	16	13	10

\* DENOTES LESS THAN ONE PERCENT

TABLE 18

## BACKGROUND DATA ON DAFSC GROUPS

	11230 AND 11250 (N=389)	11270 (N=287)	11290 AND 11200 (N=84)
AVERAGE NUMBER OF TASKS PERFORMED:	99	118	139
JOB DIFFICULTY INDEX (JDI):	10.5	14.5	18.5
AVERAGE TASK DIFFICULTY PER UNIT TIME SPENT (ATDPUTS):	4.4	4.6	5.0
*AIRCRAFT PRESENTLY QUALIFIED IN:			
EC-135	8%	11%	11%
KC-10A	2%	4%	5%
KC-135A	81%	75%	75%
KC-135Q	5%	3%	1%
*TRAINING LEVEL CURRENTLY QUALIFIED:			
BASIC ONLY	3%	2%	4%
MISSION CAPABLE	20%	29%	57%
MISSION READY	75%	65%	30%
*PERCENT MEMBERS ASSIGNED OVERSEAS:	6%	6%	6%
*UNIT TASKED WITH SUPPORTING STRATEGIC PROJECTION FORCE OPERATIONS:	65%	54%	45%
*PERCENT MEMBERS SUPERVISING OTHERS:	2%	16%	49%
*PERCENT PERFORMING REGULAR ALERT DUTY:	89%	62%	35%
*PERCENT PERFORMING REGULAR TDY:	76%	69%	62%

\* PERCENT MEMBERS RESPONDING

TABLE 19

DISTRIBUTION OF DAFSC GROUPS WITHIN JOBS  
(NUMBER OF MEMBERS RESPONDING)

	DAFSC 11230 AND 11250 (N=389)	DAFSC 11270 (N=287)	DAFSC 11290 AND 11200 (N=84)
I. LINE BOOM OPERATORS (N=319)	283	34	0
A. EC-135 LINE BOOM OPERATORS (N=20)	18	2	0
B. KC-10A LINE BOOM OPERATORS (N=13)	8	5	0
C. KC-135A LINE BOOM OPERATORS (N=255)	230	23	0
D. KC-135Q LINE BOOM OPERATORS (N=20)	17	3	0
II. INSTRUCTORS (N=308)	97	201	9
A. INSTRUCTOR BOOM OPERATORS (N=170)	80	86	3
B. STAN/EVAL INSTRUCTOR BOOM OPERATORS (N=79)	7	68	4
C. CCTS FLIGHT INSTRUCTOR BOOM OPERATORS (N=37)	8	29	0
D. CENTRAL FLIGHT INSTRUCTOR COURSE INSTRUCTORS (N=9)	1	6	2
E. CCTS ACADEMIC INSTRUCTOR BOOM OPERATORS (N=7)	0	7	0
F. BOOM OPERATOR PART TASK TRAINERS (N=7)	1	6	0
III. MANAGERS (N=90)	7	30	51
A. UNIT INFLIGHT REFUELING PROGRAM MANAGER (N=10)	1	8	33
B. ALERT FORCE MANAGERS (N=25)	3	8	12
C. COMBAT EVALUATION GROUP FLIGHT EXAMINER BOOM OPERATORS (N=13)	0	11	2
D. TANKER SCHEDULING MANAGERS (N=42)	3	3	4

NOTE: COLUMNS AND ROWS MAY NOT ADD TO EQUAL ALL MEMBERS OF THE JOB OR DAFSC DUE TO THOSE RESPONDENTS NOT INDICATING ANY OF THE ABOVE JOBS.

TABLE 20

## COMMON TASKS PERFORMED BY DAFSC 11230,50 PERSONNEL

TASKS	PERCENT MEMBERS PERFORMING (N=389)
E126 OPEN OR CLOSE CREW ENTRANCE DOORS	98
G202 PERFORM POST AIR REFUELING CHECKLIST PROCEDURES	98
E133 ORDER AIRCREW FLIGHT LUNCHES	98
G206 REFUEL RECEIVER AIRCRAFT WITH BOOM REFUELING NORMAL SYSTEMS	97
E117 DEMONSTRATE TO PASSENGERS THE PROPER USE OF LIFE PRESERVERS, PARACHUTES, OR OXYGEN MASKS	97
G193 MONITOR FUEL PANELS	97
E135 PARTICIPATE IN CREW MAINTENANCE DEBRIEFINGS	97
G201 PERFORM OR PRACTICE TANKER AIR REFUELING BREAKAWAY PROCEDURES	97
E152 PICK UP COFFEE JUGS, WATER JUGS, OR OVENS	97
G203 PERFORM PREPARATION FOR CONTACT CHECKLIST PROCEDURES FOR NORMAL AIR REFUELING	96
G211 VERBALLY DIRECT RECEIVER AIRCRAFT INTO REFUELING POSITION	96
E124 MAKE ENTRIES ON AFTO FORMS 781A (MAINTENANCE DISCREPANCY AND WORK DOCUMENT)	96
E141 PARTICIPATE IN PERMISSION WEATHER BRIEFINGS	96
E130 OPERATE GALLEY EQUIPMENT, SUCH AS OVENS OR COFFEE MAKERS	96
G207 REFUEL RECEIVER AIRCRAFT WITH BOOM REFUELING TANKER MANUAL OPERATION	95
G204 PERFORM PREPARATION FOR CONTACT CHECKLIST PROCEDURES FOR TANKER MANUAL AIR REFUELING	95
G196 PERFORM BOOM REFUELING SYSTEM OPERATIONAL CHECKS	95
G210 TAKE INFLIGHT CELESTIAL OBSERVATIONS	95
E122 LOAD CREW GEAR ON AIRCRAFT	95
G194 OPERATE AIR-CONDITIONING CONTROLS	95
E151 PICK UP AND INSPECT FLIGHT LUNCHES	95
E125 MONITOR RADIO COMMUNICATIONS	95
H213 COMPUTE DD FORM 365F (WEIGHT AND BALANCE CLEARANCE) USING LOAD ADJUSTER	95
E123 MAINTAIN CURRENCY OF FLIGHT MANUALS, SAFETY AND OPERATIONAL SUPPLEMENTS, AND FLIGHT CREW CHECKLISTS	95
G191 MONITOR ENGINE INSTRUMENTS	95
G212 VISUALLY DIRECT RECEIVER AIRCRAFT INTO REFUELING POSITION	95
E155 SECURE EQUIPMENT FOR FLIGHT OPERATIONS	94
G198 PERFORM NORMAL INFLIGHT CHECKLISTS OTHER THAN AIR REFUELING	94
F162 ALIGN SEXTANT	94
G192 MONITOR FLIGHT INSTRUMENTS	94

TABLE 21

## COMMON TASKS PERFORMED BY DAFSC 11270 PERSONNEL

TASKS	PERCENT MEMBERS PERFORMING (N=287)
E123 MAINTAIN CURRENCY OF FLIGHT MANUALS, SAFETY AND OPERATIONAL SUPPLEMENTS, AND FLIGHT CREW CHECKLISTS	95
G202 PERFORM POST AIR REFUELING CHECKLIST PROCEDURES	95
E125 MONITOR RADIO COMMUNICATIONS	95
G203 PERFORM PREPARATION FOR CONTACT CHECKLIST PROCEDURES FOR NORMAL AIR REFUELING	95
E126 OPEN OR CLOSE CREW ENTRANCE DOORS	95
G191 MONITOR ENGINE INSTRUMENTS	94
E124 MAKE ENTRIES ON AFTO FORMS 781A (MAINTENANCE DISCREPANCY AND WORK DOCUMENT)	94
E135 PARTICIPATE IN CREW MAINTENANCE DEBRIEFINGS	94
G204 PERFORM PREPARATION FOR CONTACT CHECKLIST PROCEDURES FOR TANKER MANUAL AIR REFUELING	94
G206 REFUEL RECEIVER AIRCRAFT WITH BOOM REFUELING NORMAL SYSTEMS	94
E121 INSTRUCT EXTRA CREW MEMBERS OR PASSENGERS ON INFLIGHT OR GROUND EMERGENCY PROCEDURES	94
E117 DEMONSTRATE TO PASSENGERS THE PROPER USE OF LIFE PRESERVERS, PARACHUTES, OR OXYGEN MASKS	94
G193 MONITOR FUEL PANELS	94
G201 PERFORM OR PRACTICE TANKER AIR REFUELING BREAKAWAY PROCEDURES	94
G211 VERBALLY DIRECT RECEIVER AIRCRAFT INTO REFUELING POSITION	94
H213 COMPUTE DD FORMS 365F (WEIGHT AND BALANCE CLEARANCE) USING LOAD ADJUSTER	93
G192 MONITOR FLIGHT INSTRUMENTS	93
G196 PERFORM BOOM REFUELING SYSTEM OPERATIONAL CHECKS	93
G207 REFUEL RECEIVER AIRCRAFT WITH BOOM REFUELING TANKER MANUAL OPERATION	93
E137 PARTICIPATE IN GENERAL OR SPECIALIZED MISSION BRIEFINGS	93
E141 PARTICIPATE IN PERMISSION WEATHER BRIEFINGS	93
E130 OPERATE GALLEY EQUIPMENT, SUCH AS OVENS OR COFFEE MAKERS	93
E122 LOAD CREW GEAR ON AIRCRAFT	93
G194 OPERATE AIR-CONDITIONING CONTROLS	92
G210 TAKE INFLIGHT CELESTIAL OBSERVATIONS	92
G198 PERFORM NORMAL INFLIGHT CHECKLISTS OTHER THAN AIR REFUELING	92
E153 POST CHANGES TO PERSONAL AIRCREW PUBLICATIONS	92
E133 ORDER AIRCREW FLIGHT LUNCHES	92
E151 PICK UP AND INSPECT FLIGHT LUNCHES	92
E155 SECURE EQUIPMENT FOR FLIGHT OPERATIONS	92

TABLE 22

## COMMON TASKS PERFORMED BY DAFSC 11290 AND CEM PERSONNEL

TASKS	PERCENT MEMBERS PERFORMING (N=84)
G201 PERFORM OR PRACTICE TANKER AIR REFUELING BREAKAWAY PROCEDURES	96
G206 REFUEL RECEIVER AIRCRAFT WITH BOOM REFUELING NORMAL SYSTEMS	95
G198 PERFORM NORMAL INFLIGHT CHECKLISTS OTHER THAN AIR REFUELING	95
E135 PARTICIPATE IN CREW MAINTENANCE DEBRIEFINGS	95
E125 MONITOR RADIO COMMUNICATIONS	94
G207 REFUEL RECEIVER AIRCRAFT WITH BOOM REFUELING TANKER MANUAL OPERATION	94
G196 PERFORM BOOM REFUELING SYSTEM OPERATIONAL CHECKS	94
G202 PERFORM POST AIR REFUELING CHECKLIST PROCEDURES	94
G203 PERFORM PREPARATION FOR CONTACT CHECKLIST PROCEDURES FOR NORMAL AIR REFUELING	94
E126 OPEN OR CLOSE CREW ENTRANCE DOORS	94
G204 PERFORM PREPARATION FOR CONTACT CHECKLIST PROCEDURES FOR TANKER MANUAL AIR REFUELING	94
E130 OPERATE GALLEY EQUIPMENT, SUCH AS OVENS OR COFFEE MAKERS	94
B51 WRITE CORRESPONDENCE	93
A3 COORDINATE OPERATIONAL WORK ACTIVITIES WITH OTHER SECTIONS	93
E123 MAINTAIN CURRENCY OF FLIGHT MANUALS, SAFETY AND OPERATIONAL SUPPLEMENTS, AND FLIGHT CREW CHECKLISTS	93
G212 VISUALLY DIRECT RECEIVER AIRCRAFT INTO REFUELING POSITION	93
E141 PARTICIPATE IN PREMISSION WEATHER BRIEFINGS	93
E136 PARTICIPATE IN CREW OPERATION DEBRIEFINGS	93
G192 MONITOR FLIGHT INSTRUMENTS	93
G187 ACT AS INFLIGHT SAFETY OBSERVER	92
E117 DEMONSTRATE TO PASENGERS THE PROPER USE OF LIFE PRESERVERS, PARACHUTES, OR OXYGEN MASKS	92
G193 MONITOR FUEL PANELS	92
E116 COORDINATE CORRECTION OF AIRCRAFT DISCREPANCIES OR MALFUNCTIONS WITH AIRCRAFT COMMANDER	92
E124 MAKE ENTRIES ON AFTO FORM 781A (MAINTENANCE DISCREPANCY AND WORK DOCUMENT)	92
G211 VERBALLY DIRECT RECEIVER AIRCRAFT INTO REFUELING POSITION	92
E137 PARTICIPATE IN GENERAL OR SPECIALIZED MISSION BRIEFINGS	90
E127 OPERATE EMERGENCY ESCAPE HATCHES	90
E153 POST CHANGES TO PERSONAL AIRCREW PUBLICATIONS	89
H232 UPDATE WEIGHT AND BALANCE FORMS ON NORMAL MISSIONS	89
E155 SECURE EQUIPMENT FOR FLIGHT OPERATIONS	89
G194 OPERATE AIR-CONDITIONING CONTROLS	89

### Analysis of AFR 39-1 Specialty Descriptions

Comparison of occupational survey data to the 112X0 AFR 39-1 Specialty Descriptions (1 January 1982) revealed all three documents (the 1-, 3-, and 5-skill levels, the 7-skill level, and the 9- and CEM Code skill levels) to be accurate depictions of the actual jobs performed in the career ladder.

## TRAINING ANALYSIS

### Analysis of AFS 112X0 Training Documents

Tentative Specialty Training Standard (30 December 1982). Training officials for the 112X0 career ladder provided a match of occupational inventory tasks to the tentative 112X0 STS, dated 30 December 1982. This matching of tasks to the STS allows examination of each matched STS item in light of the percentage of group members performing the tasks, the training emphasis ratings of the tasks, and the task difficulty ratings of the tasks. Groups whose task performance are used in analyzing the STS are the first-job or first-term personnel group, the 5-skill level group, and the 7-skill level group. The 3-skill level group is not examined since initial skills training should be designed for first-enlistment or first-job performance, with additional required skills picked up on the job.

ATC Regulation 52-22 provides guidelines for examining Specialty Training Standards. For initial skills training, first-job (1-24 months) or first-enlistment (1-48 months) groups are examined. If 50 percent or more of the group perform a task, the ABR course should train to minimize on-the-job training (OJT) requirements. If 30 to 49 percent perform a task, background or subject-matter knowledge should be provided in the ABR course. Tasks with 29 percent members performing or lower are normally not trained in the ABR course. These percent-performing criteria are moderated by task difficulty, training emphasis, task criticality, and subject-matter specialist judgment at utilization and training (U&T) workshops. Training emphasis may justify inclusion of training even if percent members performing is low. Finally, the expertise of subject-matter specialists who attend U&T workshops is needed to predict changes and refine STS statements.

Several areas of the 112X0 tentative STS were identified for review. Paragraph 4e has a proficiency requirement of 2b for the 3-skill level, but training emphasis is low (1.32) and percent members performing is low (see Table 19). With so few personnel performing, any training in initial skills training is questionable. No tasks were matched to STS item 9f; this item may overlap item 9a and perhaps the two items could be consolidated. Finally, paragraph 9j may need review on proficiency requirements. The task matched to this paragraph may be high in task criticality, but proficiency requirements still may need review.

Many of the tasks in the inventory not matched to any STS paragraph are presented in Table 24, along with their training emphasis, task difficulty, and percent members performing. Sometimes, such tasks already fit under an STS paragraph, but simply were not referenced to one; other tasks may be too broad to simply list under an STS paragraph. Other tasks not referenced may be functions which are performed, but are not included in the STS, indicating a need to revise the STS to include these functions. A number of the tasks displayed in Table 24 have both high TE ratings and extremely high percentages of all groups performing. All the tasks identified need to be reviewed for possible inclusion in the next STS revision.



112X0 Education and Training Requirements (ETRs). Unlike the STS, the 112X0 KC-135 ETRS document (dated 30 June 1982) was not matched to the 112X0 job inventory. The specificity of the ETRS made this match too difficult to perform. As a result of this, we performed only a visual comparison of the ETRS and the occupational survey data.

This comparison revealed no obvious deficiencies in the KC-135 ETRS.

#### 112X0 First-Term Job Description

Analysis of 112X0 First-Enlistment Job Performance. Unlike many Air Force Specialties, 112X0 first-termers comprise only a small portion (19 percent) of the entire career ladder. As indicated in Table 25, the tasks performed by first-termers cover the spectrum of technical inflight refueling operator duties. Figure 2 shows how the first-termers are distributed within career ladder jobs. They perform an average of 97 tasks and have a Job Difficulty Index of 10.2. This index climbs with experience, as the job slightly broadens for second-termers and career personnel.

Table 26 presents the tasks rated highest in training emphasis. These tasks have been rated as needing the most emphasis in early structured training. As the table reveals, most first-termers perform these tasks. Comparison showed all of these tasks to be referenced to STS items.

TABLE 23

112X0 STS AREAS IDENTIFIED FOR REVIEW

STS AREA	(PROFICIENCY CODES)	PERCENT MEMBERS PERFORMING TASK			
		TRAINING EMPHASIS*	FIRST TERMERS	11250	11270 DIFFICULTY**
4E. REPORT TECHNICAL ORDER DEFICIENCIES	2b 2c 3c				
B36 INITIATE AFTO FORMS 22 (TECHNICAL ORDER SYSTEM PUBLICATION IMPROVEMENT REPORT AND REPLY)		1.32	1%	3%	13%
5. PARTICIPATE IN USAF GRADUATE EVALUATION PROGRAM	-- 2b 2b				
C74 PARTICIPATE IN USAF GRADUATE EVALUATION PROGRAM		.23	2%	2%	4%
9J. PERFORM ANTI-HIJACKING PROCEDURES	4d 4d 4d				
G199 PERFORM OR PRACTICE ANTI-HIJACKING PROCEDURES		4.45	38%	46%	51%

\* HIGH TRAINING EMPHASIS = 5.73+

\*\* HIGH TASK DIFFICULTY = 6.0 +

TABLE 24

SELECTED TASKS NOT REFERENCED TO TENTATIVE 112X0 STS  
(30 DECEMBER 1982)

TASKS	TRAINING EMPHASIS*	PERCENT MEMBERS PERFORMING			TASK DIFFICULTY**
		ENL (N=148)	11250 (N=320)	11270 (N=287)	
F163 BRIEF FLIGHT CREWS CONCERNING AIR REFUELING ACTIVITIES	6.24	91	91	91	4.36
G192 MONITOR FLIGHT INSTRUMENTS	6.24	93	94	93	4.75
H219 PERIODICALLY CHECK CARGO RESTRAINTS ON CARGO MISSIONS	6.21	83	81	77	4.53
G191 MONITOR ENGINE INSTRUMENTS	6.16	93	95	94	4.47
H220 PERIODICALLY CHECK CARGO RESTRAINTS ON NORMAL MISSIONS	5.76	86	85	83	4.35
F169 MAKE ENTRIES ON AFTO FORMs 76 (135 AIRCRAFT STRUCTURAL ASSESSMENT DATA)	5.51	95	92	86	4.48
E129 OPERATE FLIGHTLINE MOTOR VEHICLES	5.05	84	86	79	4.11
F178 PREPARE MISSION ACCOMPLISHMENT REPORTS	4.91	70	73	81	3.86
F180 REFUEL TANKER AIRCRAFT ON GROUND THROUGH SINGLE POINT REFUELING RECEPTACLES	4.63	53	48	43	5.70
F167 INSTALL ENGINE STARTER CARTRIDGES	3.97	53	52	38	4.80
F179 PREPARE TRAINING ACCOMPLISHMENT AND PROGRESS REPORT FORMS	3.92	40	45	72	4.75
F183 REPLENISH OIL OR HYDRAULIC FLUIDS	3.69	39	38	28	4.56
E198 TURN IN AIRCRAFT LIFE SUPPORT EQUIPMENT	3.52	85	83	77	2.77
E150 PICK UP AIRCRAFT LIFE SUPPORT EQUIPMENT	3.41	83	80	77	2.94
F181 REFUEL TANKER AIRCRAFT ON GROUND THROUGH WING TANKS	3.41	16	13	14	6.18
E145 PERFORM HIGH ALTITUDE PROCEDURES IN ALTITUDE CHAMBER	3.40	51	53	53	4.85

\* Average = 3.34, Standard Deviation = 2.39, High TE = 5.73+

\*\* Average = 5.0, Standard Deviation = 1, High TD = 6.0+

TABLE 25

## COMMON TASKS PERFORMED BY FIRST-ENLISTMENT 112X0 PERSONNEL

TASKS	PERCENT MEMBERS PERFORMING (N=148)
G206 REFUEL RECEIVER AIRCRAFT WITH BOOM REFUELING NORMAL SYSTEMS	97
G203 PERFORM PREPARATION FOR CONTACT CHECKLIST PROCEDURES FOR NORMAL AIR REFUELING	97
E133 ORDER AIRCREW FLIGHT LUNCHES	97
E117 DEMONSTRATE TO PASSENGERS THE PROPER USE OF LIFE PRESERVERS, PARACHUTES, OR OXYGEN MASKS	97
E126 OPEN OR CLOSE CREW ENTRANCE DOORS	97
G202 PERFORM POST AIR REFUELING CHECKLIST PROCEDURES	97
G210 TAKE INFLIGHT CELESTIAL OBSERVATIONS	97
G201 PERFORM OR PRACTICE TANKER AIR REFUELING BREAKAWAY PROCEDURES	97
G211 VERBALLY DIRECT RECEIVER AIRCRAFT INTO REFUELING POSITION	97
H213 COMPUTE DD FORMS 365F (WEIGHT AND BALANCE CLEARANCE) USING LOAD ADJUSTER	96
G193 MONITOR FUEL PANELS	96
E152 PICK UP COFFEE JUGS, WATER JUGS, OR OVENS	96
E135 PARTICIPATE IN CREW MAINTENANCE DEBRIEFINGS	96
G194 OPERATE AIR-CONDITIONING CONTROLS	96
F162 ALIGN SEXTANT	96
E151 PICK UP AND INSPECT FLIGHT LUNCHES	95
F175 PERFORM PREFLIGHT SEXTANT OPERATIONAL CHECKS	95
E124 MAKE ENTRIES ON AFTO FORMS 781A (MAINTENANCE DISCREPANCY AND WORK DOCUMENT)	95
G204 PERFORM PREPARATION FOR CONTACT CHECKLIST PROCEDURES FOR TANKER MANUAL AIR REFUELING	95
F169 MAKE ENTRIES ON AFTO FORMS 76 (C-135 AIRCRAFT STRUCTURAL ASSESSMENT DATA (OMR))	95
E159 TURN IN COFFEE JUGS, WATER JUGS, OR OVENS	95
E125 MONITOR RADIO COMMUNICATIONS	94
E155 SECURE EQUIPMENT FOR FLIGHT OPERATIONS	94
G198 PERFORM NORMAL INFLIGHT CHECKLISTS OTHER THAN AIR REFUELING	94
G207 REFUEL RECEIVER AIRCRAFT WITH BOOM REFUELING TANKER MANUAL OPERATION	94
H230 SUPERVISE PASSENGERS ON NORMAL MISSIONS	94
E130 OPERATE GALLEY EQUIPMENT, SUCH AS OVENS OR COFFEE MAKERS	94
F171 PERFORM ALERT CHECKLISTS	94
E122 LOAD CREW GEAR ON AIRCRAFT	93
G192 MONITOR FLIGHT INSTRUMENTS	93
F186 TAKE GROUND PREFLIGHT CELESTIAL OBSERVATIONS	93

FIGURE 2

DISTRIBUTION OF FIRST ENLISTMENT  
PERSONNEL WITHIN JOBS  
(N=148)

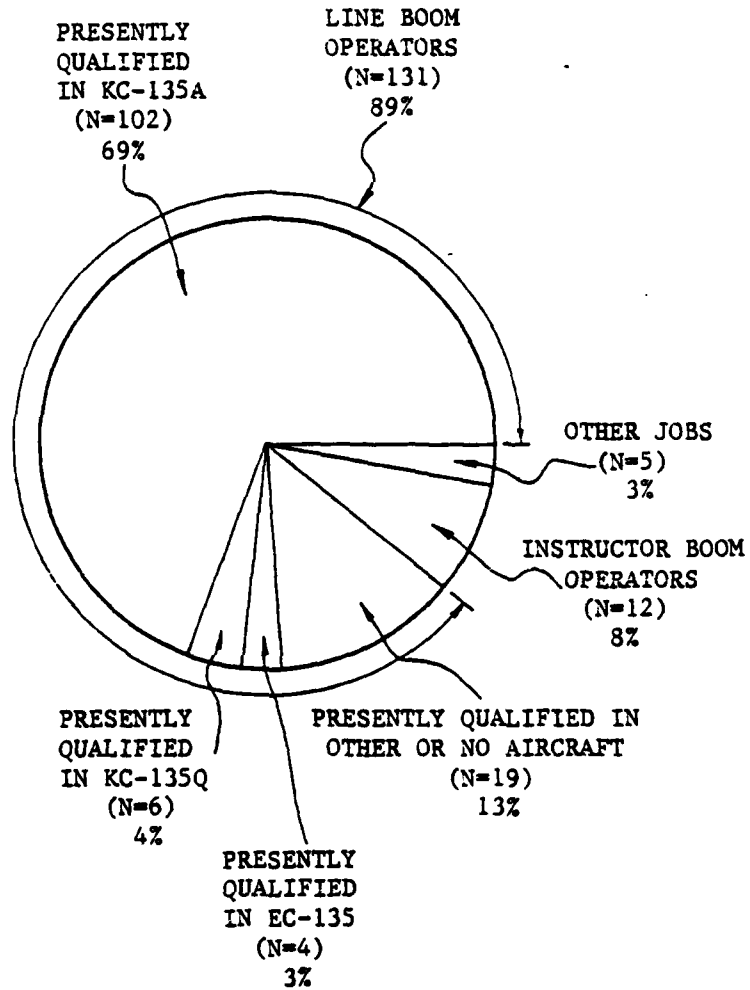


TABLE 26

## TASKS RATED HIGHEST IN TRAINING EMPHASIS

TASK	TRAINING EMPHASIS	112X0 FIRST-TERMER PERCENT MEMBERS PERFORMING
G201 PERFORM OR PRACTICE TANKER AIR REFUELING BREAKAWAY PROCEDURES	7.43	97
E121 INSTRUCT EXTRA CREW MEMBERS OR PASSENGERS ON INFLIGHT OR GROUND EMERGENCY PROCEDURES	7.41	93
E117 DEMONSTRATE TO PASSENGERS THE PROPER USE OF LIFE PRESERVERS, PARACHUTES, OR OXYGEN MASKS	7.31	97
E123 MAINTAIN CURRENCY OF FLIGHT MANUALS, SAFETY AND OPERATIONAL SUPPLEMENTS, AND FLIGHT CREW CHECKLISTS	7.28	92
H213 COMPUTE DD FORMS 365F (WEIGHT AND BALANCE CLEARANCE) USING LOAD ADJUSTER	7.27	96
G206 REFUEL RECEIVER AIRCRAFT WITH BOOM REFUELING NORMAL SYSTEMS	7.17	97
G207 REFUEL RECEIVER AIRCRAFT WITH BOOM REFUELING TANKER MANUAL OPERATION	7.12	94
G212 VISUALLY DIRECT RECEIVER AIRCRAFT INTO REFUELING POSITION	7.12	93
E155 SECURE EQUIPMENT FOR FLIGHT OPERATIONS	7.09	94
G204 PERFORM PREPARATION FOR CONTACT CHECKLIST PROCEDURES FOR TANKER MANUAL AIR REFUELING	7.07	95
G197 PERFORM BOOM SYSTEM EMERGENCY OPERATIONS	7.05	84
E157 STUDY TECHNICAL ORDERS FOR ABNORMAL AND EMERGENCY INFLIGHT PROCEDURES	6.96	83
G203 PERFORM PREPARATION FOR CONTACT CHECKLIST PROCEDURES FOR NORMAL AIR REFUELING	6.95	97
E125 MONITOR RADIO COMMUNICATIONS	6.93	94
E127 OPERATE EMERGENCY ESCAPE HATCHES	6.93	92
G211 VERBALLY DIRECT RECEIVER AIRCRAFT INTO REFUELING POSITION	6.89	97
G187 ACT AS INFLIGHT SAFETY OBSERVER	6.88	85
E124 MAKE ENTRIES ON AFTO FORMS 781A (MAINTENANCE DISCREPANCY AND WORK DOCUMENT)	6.87	95
E153 POST CHANGES TO PERSONAL AIRCREW PUBLICATIONS	6.80	87
H229 SUPERVISE PASSENGERS ON CARGO MISSIONS	6.80	83
H215 DIRECT CARGO LOADING OR UNLOADING ON CARGO MISSIONS	6.75	82
G202 PERFORM POST AIR REFUELING CHECKLIST PROCEDURES	6.72	97
G196 PERFORM BOOM REFUELING SYSTEM OPERATIONAL CHECKS	6.71	93
G200 PERFORM OR PRACTICE INFLIGHT EMERGENCY PROCEDURES	6.71	87

TABLE 26 (CONTINUED)

TASKS RATED HIGHEST IN TRAINING EMPHASIS

TASK	TRAINING EMPHASIS	112X0 FIRST-TERMER PERCENT MEMBERS PERFORMING
H227 SECURE CARGO ON CARGO MISSIONS	6.64	82
G193 MONITOR FUEL PANELS	6.63	96
H230 SUPERVISE PASSENGERS ON NORMAL MISSIONS	6.60	94
H217 PERFORM LOAD PLANNING ON CARGO MISSIONS	6.59	84

## ANALYSIS OF JOB ATTITUDES

Another area of occupational survey reports useful to the Air Force is the examination of attitudes incumbents hold about their job. This examination is accomplished by providing five questions in the background section of the inventory. These questions address perceptions of how interesting the job is, how well talents and training are utilized by the job, what sense of accomplishment the person gains from the job, and whether they intend to reenlist.

Table 27 provides the pertinent data on 112X0 job attitudes. To provide a meaningful standard by which to measure job attitudes, those recently surveyed AFSCs which are similar in job performance are compared with each study on these measures. For the 112X0, the only similar AFSC available for comparison was the 111X0 Defensive Aerial Gunners.

As can be seen in the table, 112X0 personnel in all three experience groups have higher opinions of their job in every area than do the Defensive Aerial Gunners. For all 112X0 experience groups, job attitudes are comparable, with the exception of reenlistment intentions. The 112X0 first-enlistment personnel have lower reenlistment intentions than either the 112X0 second or career experience groups.

In summary then, the 112X0 personnel have more positive job attitudes than the 111X0 personnel; and job attitudes are similar for the three 112X0 experience groups, excluding reenlistment intentions which are lower for the first-enlistment group.



TABLE 27

JOB ATTITUDE DATA FOR 112X0 EXPERIENCE GROUPS  
AND COMPARATIVE SAMPLE PERSONNEL  
(PERCENT MEMBERS RESPONDING)

	MONTHS TAFTMS					
	1-48		49-96		97+	
	112X0 (N=148)	1981 COMP* SAMPLE (N=90)	112X0 (N=202)	1981 COMP* SAMPLE (N=120)	112X0 (N=415)	1981 COMP* SAMPLE (N=234)
<u>I FIND MY JOB:</u>						
DULL	2	11	3	13	1	8
SO-SO	3	16	4	6	4	6
INTERESTING	95	73	92	80	91	85
<u>MY JOB UTILIZES MY TALENTS:</u>						
NOT AT ALL TO VERY LITTLE	14	40	9	29	5	18
FAIRLY WELL OR BETTER	84	60	91	71	94	81
<u>MY JOB UTILIZES MY TRAINING:</u>						
NOT AT ALL TO VERY LITTLE	3	13	4	8	7	9
FAIRLY WELL OR BETTER	95	87	95	81	92	90
<u>WITH SENSE OF ACCOMPLISHMENT, I AM:</u>						
DISATISFIED	5	25	6	22	7	18
AMBIVALENT	6	13	2	13	5	4
SATISFIED	88	61	92	64	87	76
<u>I PLAN TO REENLIST:</u>						
I PLAN TO RETIRE	0	**	1	**	8	**
NO, OR PROBABLY NO	32	39	12	28	4	28
YES, OR PROBABLY YES	67	61	87	71	87	71

NOTE: QUESTION COLUMNS MAY NOT ADD TO 100 PERCENT DUE TO SOME RESPONDENTS NOT ANSWERING THE QUESTION.

\* COMPARATIVE SAMPLE IS AFSC 111X0, DEFENSIVE AERIAL GUNNERS.

\*\* PLAN TO RETIRE IS UNAVAILABLE FOR COMPARATIVE SAMPLE, SO THIS OPTION IS INCLUDED IN "NO, OR PROBABLY NO" OPTION FOR THE 111X0 GROUPS.

## COMPARISON OF PRESENT TO PREVIOUS STUDY

The previous occupational survey report (OSR) of the 112X0 Inflight Refueling Operator career ladder was published in August 1978. Findings in that report were not much different from the present findings. Since career ladder structure analysis was performed by job title examination in the present report, more jobs are reported in the current study. Table 28 shows how the former jobs identified relate to the present.

The Line Boom Operators group identified in the 1978 OSR correspond to the Line Boom Operators and part of the Instructor Boom Operators in the present OSR. The 1978 Squadron Instructors are subsumed in the Instructor Boom Operators job in the 1982 study. As the table illustrates, most of the remaining jobs identified in the 1978 study had corresponding jobs in the 1982 study. Only one group, the Curriculum Developers, in the 1978 study had no related group in the 1982 analysis. Two groups, the CFIC Instructors and the Boom Operator Part Task Trainers were identified in the 1982, but not the 1978, OSR.

Table 29 reveals that job satisfaction has increased noticeably since 1978. Reenlistment intentions have increased by almost 10 percent for every experience group--10 percent for first-termers. Career personnel find their job more interesting and their talents better utilized now than in 1978.

In summary, comparison of the present 112X0 OSR to the 112X0 OSR of 1978 shows about the same jobs being performed. Even with jobs the same, though, job attitudes have improved noticeably since 1978. Reenlistment intentions are substantially higher presently than they were when the previous OSR was published.

TABLE 28

COMPARISON OF 1978 112X0 STUDY TO THE PRESENT STUDY

JOB GROUP IDENTIFIED

<u>1982 STUDY (N=765)</u>	<u>1978 STUDY (N=696)</u>
LINE BOOM OPERATORS (N=319)	LINE BOOM OPERATORS (N=404)
INSTRUCTOR BOOM OPERATORS (N=170)	SQUADRON INSTRUCTORS (N=88)
UNIT INFLIGHT REFUELING PROGRAM MANAGERS (N=42)	IFR SUPERINTENDENTS (N=45)
TANKER SCHEDULING MANAGERS (N=13)	CURRICULUM DEVELOPERS (N=5)
STAN/EVAL IBOs (N=79)	FLIGHT EXAMINERS (N=78)
COMBAT EVALUATION GROUP FLIGHT EXAMINER BOs (N=13)	CCTS INSTRUCTORS (N=11)
CCTS FLIGHT INSTRUCTOR BOs (N=37)	ALERT FORCE MANAGERS (N=12)
CCTS ACADEMIC INSTRUCTOR BOs (N=7)	
ALERT FORCE MANAGERS (N=25)	
CFIC INSTRUCTORS (N=9)	
BO PART TASK TRAINERS (N=7)	

TABLE 29

<u>JOB SATISFACTION</u>	<u>TAFMS GROUPS</u>					
	<u>1-48</u>		<u>49-96</u>		<u>97+</u>	
	<u>1978</u>	<u>1982</u>	<u>1978</u>	<u>1982</u>	<u>1978</u>	<u>1982</u>
FIND JOB INTERESTING:	88	95	90	92	83	91
FEEL TALENTS ARE WELL UTILIZED:	80	84	90	91	86	94
FEEL TRAINING IS WELL UTILIZED:	98	95	94	95	90	92
PLAN TO REENLIST:	48	67	79	87	73	87

## IMPLICATIONS

The 112X0 career ladder is stable and well organized. Sixty-six percent of the career ladder personnel are "mission ready" and 59 percent are in units tasked with supporting Strategic Projection Force Operations. Around 72 percent of the sample also perform regular TDY and 73 percent perform regular Alert Duty. Loadmaster functions consume 14 percent of the job time of the total sample.

All the jobs in the specialty include a high degree of technical line boom operation. Supervisory training and managerial functions are supplemental to the basic Boom Operator job. This trend (technical job and added functions) is also seen in analysis of skill levels and TAFMS groups, which confirm that this is a very operationally-oriented aircrew specialty where everyone is to a considerable degree involved in the technical aspects of the specialty.

Job attitudes are very positive throughout the career ladder. Comparison shows job attitudes are noticeably better than when surveyed in 1978.

In conclusion, occupational survey data reveals the 112X0 career ladder to be well structured, organized, and managed, with a majority of satisfied personnel.

APPENDIX A

LINE BOOM OPERATOR AIRCRAFT SUBGROUPS

TABLE A1

COMMON TASKS PERFORMED BY LINE  
BOOM OPERATORS CURRENTLY QUALIFIED IN EC-135 AIRCRAFT

TASKS	PERCENT MEMBERS PERFORMING
G193 MONITOR FUEL PANELS	100
E159 TURN IN COFFEE JUGS, WATER JUGS, OR OVENS	100
H213 COMPUTE DD FORMS 365F (WEIGHT AND BALANCE CLEARANCE) USING LOAD ADJUSTER	100
E152 PICK UP COFFEE JUGS, WATER JUGS, OR OVENS	100
E126 OPEN OR CLOSE CREW ENTRANCE DOORS	100
G194 OPERATE AIR-CONDITIONING CONTROLS	100
E153 POST CHANGES TO PERSONAL AIRCREW PUBLICATIONS	100
E123 MAINTAIN CURRENCY OF FLIGHT MANUALS, SAFETY AND OPERATIONAL SUPPLEMENTS, AND FLIGHT CREW CHECKLISTS	100
G206 REFUEL RECEIVER AIRCRAFT WITH BOOM REFUELING NORMAL SYSTEM	100
G203 PERFORM PREPARATION FOR CONTACT CHECKLIST PROCEDURES FOR NORMAL AIR REFUELING	100
E122 LOAD CREW GEAR ON AIRCRAFT	100
E151 PICK UP AND INSPECT FLIGHT LUNCHES	100
G201 PERFORM OR PRACTICE TANKER AIR REFUELING BREAKAWAY PROCEDURES	100
F176 POSITION PROFESSIONAL EQUIPMENT AT BOOM OPERATORS FORWARD STATION	100
E157 STUDY TECHNICAL ORDERS FOR ABNORMAL AND EMERGENCY INFLIGHT PROCEDURES	100
G204 PERFORM PREPARATION FOR CONTACT CHECKLIST PROCEDURES FOR TANKER MANUAL AIR REFUELING	100
G207 REFUEL RECEIVER AIRCRAFT WITH BOOM REFUELING TANKER MANUAL OPERATION	100
G211 VERBALLY DIRECT RECEIVER AIRCRAFT INTO REFUELING POSITION	100
E124 MAKE ENTRIES ON AFTO FORMS 781A (MAINTENANCE DISCREPANCY AND WORK DOCUMENT)	100
E135 PARTICIPATE IN CREW MAINTENANCE DEBRIEFINGS	100
F175 PERFORM PREFLIGHT SEXTANT OPERATIONAL CHECKS	100
G210 TAKE INFLIGHT CELESTIAL OBSERVATIONS	100
E127 OPERATE EMERGENCY ESCAPE HATCHES	100
E137 PARTICIPATE IN GENERAL OR SPECIALIZED MISSION BRIEFINGS	100
E138 PARTICIPATE IN LIFE SUPPORT TRAINING SEMINARS	100
E117 DEMONSTRATE TO PASSENGERS THE PROPER USE OF LIFE PRESERVERS, PARACHUTES, OR OXYGEN MASKS	100
E125 MONITOR RADIO COMMUNICATIONS	95
G191 MONITOR ENGINE INSTRUMENTS	95
G198 PERFORM NORMAL INFLIGHT CHECKLISTS OTHER THAN AIR REFUELING	95

TABLE A2

COMMON TASKS PERFORMED BY LINE  
BOOM OPERATORS CURRENTLY QUALIFIED IN KC-10A AIRCRAFT

TASKS	PERCENT MEMBERS PERFORMING
G187 ACT AS INFLIGHT SAFETY OBSERVER	100
G206 REFUEL RECEIVER AIRCRAFT WITH BOOM REFUELING NORMAL SYSTEMS	100
E126 OPEN OR CLOSE CREW ENTRANCE DOORS	100
E123 MAINTAIN CURRENCY OF FLIGHT MANUALS, SAFETY AND OPERATIONAL SUPPLEMENTS, AND FLIGHT CREW CHECKLISTS	100
G196 PERFORM BOOM REFUELING SYSTEM OPERATIONAL CHECKS	100
G202 PERFORM POST AIR REFUELING CHECKLIST PROCEDURES	100
G203 PERFORM PREPARATION FOR CONTACT CHECKLIST PROCEDURES FOR NORMAL AIR REFUELING	100
H232 UPDATE WEIGHT AND BALANCE FORMS ON NORMAL MISSIONS	100
E136 PARTICIPATE IN CREW OPERATION DEBRIEFINGS	100
E133 ORDER AIRCREW FLIGHT LUNCHES	100
E135 PARTICIPATE IN CREW MAINTENANCE DEBRIEFINGS	100
G211 VERBALLY DIRECT RECEIVER AIRCRAFT INTO REFUELING POSITIONS	100
E124 MAKE ENTRIES ON AFTO FORMS 781A (MAINTENANCE DISCREPANCY AND WORK DOCUMENT)	100
E121 INSTRUCT EXTRA CREW MEMBERS OR PASSENGERS ON INFLIGHT OR GROUND EMERGENCY PROCEDURES	100
G207 REFUEL RECEIVER AIRCRAFT WITH BOOM REFUELING TANKER MANUAL OPERATION	100
F177 PREPARE AF FORMS 791 (SERIAL TANKER INFLIGHT ISSUE LOG)	100
G201 PERFORM OR PRACTICE TANKER AIR REFUELING BREAKAWAY PROCEDURES	100
G204 PERFORM PREPARATION FOR CONTACT CHECKLIST PROCEDURES FOR TANKER MANUAL AIR REFUELING	100
E125 MONITOR RADIO COMMUNICATIONS	92
G212 VISUALLY DIRECT RECEIVER AIRCRAFT INTO REFUELING POSITION	92
E151 PICK UP AND INSPECT FLIGHT LUNCHES	92
E157 STUDY TECHNICAL ORDERS FOR ABNORMAL AND EMERGENCY INFLIGHT PROCEDURES	92
E132 OPERATE ULTRAHIGH FREQUENCY (UHF) RADIOS	92
E137 PARTICIPATE IN GENERAL OR SPECIALIZED MISSION BRIEFINGS	92
G191 MONITOR ENGINE INSTRUMENTS	92
G193 MONITOR FUEL PANELS	92
G195 PERFORM BOOM DROGUE AIR REFUELING SYSTEM OPERATIONAL CHECKS	92
G198 PERFORM NORMAL INFLIGHT CHECKLISTS OTHER THAN AIR REFUELING	92
E154 REVIEW AFTO FORMS 781 SERIES FOR AIRCRAFT DISCREPANCIES	92
H230 SUPERVISE PASSENGERS ON NORMAL MISSIONS	92

TABLE A3

COMMON TASKS PERFORMED BY LINE  
BOOM OPERATORS CURRENTLY QUALIFIED IN KC-135A

TASKS	PERCENT MEMBERS PERFORMING
G202 PERFORM POST AIR REFUELING CHECKLIST PROCEDURES	99
G206 REFUEL RECEIVER AIRCRAFT WITH BOOM REFUELING NORMAL SYSTEMS	98
E126 OPEN OR CLOSE CREW ENTRANCE DOORS	98
G203 PERFORM PREPARATION FOR CONTACT CHECKLIST PROCEDURES FOR NORMAL AIR REFUELING	98
G210 TAKE INFLIGHT CELESTIAL OBSERVATIONS	98
E135 PARTICIPATE IN CREW MAINTENANCE DEBRIEFINGS	98
E133 ORDER AIRCREW FLIGHT LUNCHES	98
G201 PERFORM OR PRACTICE TANKER AIR REFUELING BREAKAWAY PROCEDURES	98
E117 DEMONSTRATE TO PASSENGERS THE PROPER USE OF LIFE PRESERVERS, PARACHUTES, OR OXYGEN MASKS	98
G193 MONITOR FUEL PANELS	97
F162 ALIGN SEXTANT	97
E124 MAKE ENTRIES ON AFTO FORMS 781A (MAINTENANCE DISCREPANCY AND WORK DOCUMENT)	97
G211 VERBALLY DIRECT RECEIVER AIRCRAFT INTO REFUELING POSITION	97
G194 OPERATE AIR-CONDITIONING CONTROLS	97
E152 PICK UP COFFEE JUGS, WATER JUGS, OR OVENS	97
F171 PERFORM ALERT CHECKLISTS	97
G204 PERFORM PREPARATION FOR CONTACT CHECKLIST PROCEDURES FOR TANKER MANUAL AIR REFUELING	97
F175 PERFORM PREFLIGHT SEXTANT OPERATIONAL CHECKS	96
H213 COMPUTE DD FORMS 365F (WEIGHT AND BALANCE CLEARANCE) USING LOAD ADJUSTER	96
G196 PERFORM BOOM REFUELING SYSTEM OPERATIONAL CHECKS	96
E130 OPERATE GALLEY EQUIPMENT, SUCH AS OVENS OR COFFEE MAKERS	96
E155 SECURE EQUIPMENT FOR FLIGHT OPERATIONS	95
G212 VISUALLY DIRECT RECEIVER AIRCRAFT INTO REFUELING POSITION	95
G207 REFUEL RECEIVER AIRCRAFT WITH BOOM REFUELING TANKER MANUAL OPERATION	95
F186 TAKE GROUND PREFLIGHT CELESTIAL OBSERVATIONS	95
E122 LOAD CREW GEAR ON AIRCRAFT	95
G198 PERFORM NORMAL INFLIGHT CHECKLISTS OTHER THAN AIR REFUELING	95
G191 MONITOR ENGINE INSTRUMENTS	95
E141 PARTICIPATE IN PERMISSION WEATHER BRIEFINGS	95
E125 MONITOR RADIO COMMUNICATIONS	95
E159 TURN IN COFFEE JUGS, WATER JUGS, OR OVENS	95
E151 PICK UP AND INSPECT FLIGHT LUNCHES	95



TABLE A4

COMMON TASKS PERFORMED BY LINE BOOM  
OPERATORS CURRENTLY QUALIFIED IN KC-135Q

TASKS	PERCENT MEMBERS PERFORMING
E133 ORDER AIRCREW FLIGHT LUNCHES	100
E122 LOAD CREW GEAR ON AIRCRAFT	100
E123 MAINTAIN CURRENCY OF FLIGHT MANUALS, SAFETY AND OPERATIONAL SUPPLEMENTS, AND FLIGHT CREW CHECKLISTS	100
E126 OPEN OR CLOSE CREW ENTRANCE DOORS	100
E135 PARTICIPATE IN CREW MAINTENANCE DEBRIEFINGS	100
E137 PARTICIPATE IN GENERAL OR SPECIALIZED MISSION BRIEFINGS	100
E117 DEMONSTRATE TO PASSENGERS THE PROPER USE OF LIFE PRESERVERS, PARACHUTES, OR OXYGEN MASKS	100
E130 OPERATE GALLEY EQUIPMENT, SUCH AS OVENS OR COFFEE MAKERS	100
E124 MAKE ENTRIES ON AFTO FORMS 781A (MAINTENANCE DISCREPANCY AND WORK DOCUMENT)	100
E121 INSTRUCT EXTRA CREW MEMBERS OR PASSENGERS ON INFLIGHT OR GROUND EMERGENCY PROCEDURES	100
E127 OPERATE EMERGENCY ESCAPE HATCHES	100
E138 PARTICIPATE IN LIFE SUPPORT TRAINING SEMINARS	100
E125 MONITOR RADIO COMMUNICATIONS	95
H213 COMPUTE DD FORMS 365F (WEIGHT AND BALANCE CLEARANCE) USING LOAD ADJUSTER	95
H230 SUPERVISE PASSENGERS ON NORMAL MISSIONS	95
F162 ALIGN SEXTANT	95
G212 VISUALLY DIRECT RECEIVER AIRCRAFT INTO REFUELING POSITION	95
E152 PICK UP COFFEE JUGS, WATER JUGS, OR OVENS	95
F163 BRIEF FLIGHT CREWS CONCERNING AIR REFUELING MISSION ACTIVITIES	95
E141 PARTICIPATE IN PREMISSION WEATHER BRIEFINGS	95
H222 POSITION PARACHUTES OR OXYGEN BOTTLES ON NORMAL MISSIONS	95
E116 COORDINATE CORRECTION OF AIRCRAFT DISCREPANCIES OR MALFUNCTIONS WITH AIRCRAFT COMMANDER	95
G211 VERBALLY DIRECT RECEIVER AIRCRAFT INTO REFUELING POSITION	95
H227 SECURE CARGO ON CARGO MISSIONS	90
H229 SUPERVISE PASSENGERS ON CARGO MISSIONS	90
G198 PERFORM NORMAL INFLIGHT CHECKLISTS OTHER THAN AIR REFUELING	90
E153 POST CHANGES TO PERSONAL AIRCREW PUBLICATIONS	90
G193 MONITOR FUEL PANELS	90
G196 PERFORM BOOM REFUELING SYSTEM OPERATIONAL CHECKS	90
G191 MONITOR ENGINE INSTRUMENTS	90
G210 TAKE INFLIGHT CELESTIAL OBSERVATIONS	90
H228 SECURE CARGO ON NORMAL MISSIONS	90

APPENDIX B

INSTRUCTOR SUBGROUPS

TABLE B1  
COMMON TASKS PERFORMED BY INSTRUCTOR BOOM OPERATORS  
(SPC046)

TASKS	PERCENT MEMBERS PERFORMING (N=170)
E117 DEMONSTRATE TO PASSENGERS THE PROPER USE OF LIFE PRESERVERS, PARACHUTES, OR OXYGEN MASKS	98
E141 PARTICIPATE IN PREMISSION WEATHER BRIEFINGS	98
G201 PERFORM OR PRACTICE TANKER AIR REFUELING BREAKAWAY PROCEDURES	97
E123 MAINTAIN CURRENCY OF FLIGHT MANUALS, SAFETY AND OPERATIONAL SUPPLEMENTS, AND FLIGHT CREW CHECKLISTS	96
E126 OPEN OR CLOSE CREW ENTRANCE DOORS	96
G206 REFUEL RECEIVER AIRCRAFT WITH BOOM REFUELING NORMAL SYSTEMS	96
G194 OPERATE AIR-CONDITIONING CONTROLS	96
F176 POSITION PROFESSIONAL EQUIPMENT AT BOOM OPERATORS FORWARD STATION	96
G202 PERFORM POST AIR REFUELING CHECKLIST PROCEDURES	96
E125 MONITOR RADIO COMMUNICATIONS	96
G193 MONITOR FUEL PANELS	96
G191 MONITOR ENGINE INSTRUMENTS	96
G210 TAKE INFLIGHT CELESTIAL OBSERVATIONS	96
F175 PERFORM PREFLIGHT SEXTANT OPERATIONAL CHECKS	96
E121 INSTRUCT EXTRA CREW MEMBERS OR PASSENGERS ON INFLIGHT OR GROUND EMERGENCY PROCEDURES	96
G207 REFUEL RECEIVER AIRCRAFT WITH BOOM REFUELING TANKER MANUAL OPERATION	95
G192 MONITOR FLIGHT INSTRUMENTS	95
G196 PERFORM BOOM REFUELING SYSTEM OPERATIONAL CHECKS	95
G211 VERBALLY DIRECT RECEIVER AIRCRAFT INTO REFUELING POSITION	95
E133 ORDER AIRCREW FLIGHT LUNCHES	95
G203 PERFORM PREPARATION FOR CONTACT CHECKLIST PROCEDURES FOR NORMAL AIR REFUELING	95
E135 PARTICIPATE IN CREW MAINTENANCE DEBRIEFINGS	95
E137 PARTICIPATE IN GENERAL OR SPECIALIZED MISSION BRIEFINGS	95
F162 ALIGN SEXTANT	95
G204 PERFORM PREPARATION FOR CONTACT CHECKLIST PROCEDURES FOR TANKER MANUAL AIR REFUELING	95
E130 OPERATE GALLEY EQUIPMENT, SUCH AS OVENS OR COFFEE MAKERS	95
H213 COMPUTE DD FORMS 365F (WEIGHT AND BALANCE CLEARANCE) USING LOAD ADJUSTER	94
E122 LOAD CREW GEAR ON AIRCRAFT	94
E124 MAKE ENTRIES ON AFTO FORMS 781A (MAINTENANCE DISCREPANCY AND WORK DOCUMENT)	94

TABLE B2

COMMON TASKS PERFORMED BY STANDARDIZATION/EVALUATION INSTRUCTOR BOOM OPERATORS  
(SPC048)

TASKS	PERCENT MEMBERS PERFORMING (N=79)
E124 MAKE ENTRIES ON AFTO FORMS 781A (MAINTENANCE DISCREPANCY AND WORK DOCUMENT)	96
G207 REFUEL RECEIVER AIRCRAFT WITH BOOM REFUELING TANKER MANUAL OPERATION	96
E125 MONITOR RADIO COMMUNICATIONS	95
H213 COMPUTE DD FORMS 365F (WEIGHT AND BALANCE CLEARANCE) USING LOAD ADJUSTER	95
E123 MAINTAIN CURRENCY OF FLIGHT MANUALS, SAFETY AND OPERATIONAL SUPPLEMENTS, AND FLIGHT CREW CHECKLISTS	95
G206 REFUEL RECEIVER AIRCRAFT WITH BOOM REFUELING NORMAL SYSTEMS	95
E153 POST CHANGES TO PERSONAL AIRCREW PUBLICATIONS	95
E159 TURN IN COFFEE JUGS, WATER JUGS, OR OVENS	95
E135 PARTICIPATE IN CREW MAINTENANCE DEBRIEFINGS	95
E155 SECURE EQUIPMENT FOR FLIGHT OPERATIONS	95
E126 OPEN OR CLOSE CREW ENTRANCE DOORS	95
G201 PERFORM OR PRACTICE TANKER AIR REFUELING BREAKAWAY PROCEDURES	95
G202 PERFORM POST AIR REFUELING CHECKLIST PROCEDURES	95
E152 PICK UP COFFEE JUGS, WATER JUGS, OR OVENS	95
E151 PICK UP AND INSPECT FLIGHT LUNCHES	95
E130 OPERATE GALLEY EQUIPMENT, SUCH AS OVENS OR COFFEE MAKERS	95
E133 ORDER AIRCREW FLIGHT LUNCHES	95
G191 MONITOR ENGINE INSTRUMENTS	94
G193 MONITOR FUEL PANELS	94
G192 MONITOR FLIGHT INSTRUMENTS	94
E122 LOAD CREW GEAR ON AIRCRAFT	94
G203 PERFORM PREPARATION FOR CONTACT CHECKLIST PROCEDURES FOR NORMAL AIR REFUELING	94
G210 TAKE INFLIGHT CELESTIAL OBSERVATIONS	94
E117 DEMONSTRATE TO PASSENGERS THE PROPER USE OF LIFE PRESERVERS, PARACHUTES, OR OXYGEN MASKS	94
C52 ADMINISTER PROFICIENCY CHECKS	92
E137 PARTICIPATE IN GENERAL OR SPECIALIZED MISSION BRIEFINGS	92
E141 PARTICIPATE IN PERMISSION WEATHER BRIEFINGS	92
G196 PERFORM BOOM REFUELING SYSTEM OPERATIONAL CHECKS	92
E154 REVIEW AFTO FORMS 781 SERIES FOR AIRCRAFT DISCREPANCIES	92
E121 INSTRUCT EXTRA CREW MEMBERS OR PASSENGERS ON INFLIGHT OR GROUND EMERGENCY PROCEDURES	92
C52 ADMINISTER PROFICIENCY CHECKS	92
C53 ADMINISTER RECURRENCE CHECKS	89
C54 ADMINISTER STANDARDIZATION BOARD CHECKS	81
A18 PLAN STANDARDIZATION PROGRAMS	78
B34 IMPLEMENT STANDARDIZATION PROGRAMS	75

TABLE B3

COMMON TASKS PERFORMED BY CCTS FLIGHT INSTRUCTOR BOOM OPERATORS  
(SPC044)

TASKS	PERCENT MEMBERS PERFORMING (N=37)
E155 SECURE EQUIPMENT FOR FLIGHT OPERATIONS	95
F179 PREPARE TRAINING ACCOMPLISHMENT AND PROGRESS REPORT FORMS	92
D90 DEMONSTRATE HOW TO LOCATE TECHNICAL INFORMATION	92
G203 PERFORM PREPARATION FOR CONTACT CHECKLIST PROCEDURES FOR NORMAL AIR REFUELING	92
E161 VISUALLY INSPECT SPARE LIFE SUPPORT EQUIPMENT	92
G193 MONITOR FUEL PANELS	92
E133 ORDER AIRCREW FLIGHT LUNCHES	92
G206 REFUEL RECEIVER AIRCRAFT WITH BOOM REFUELING NORMAL SYSTEMS	92
G192 MONITOR FLIGHT INSTRUMENTS	92
G191 MONITOR ENGINE INSTRUMENTS	92
F163 BRIEF FLIGHT CREWS CONCERNING AIR REFUELING MISSION ACTIVITIES	92
G210 TAKE INFLIGHT CELESTIAL OBSERVATIONS	92
F162 ALIGN SEXTANT	92
G197 PERFORM BOOM SYSTEM EMERGENCY OPERATIONS	92
G202 PERFORM POST AIR REFUELING CHECKLIST PROCEDURES	92
G194 OPERATE AIR-CONDITIONING CONTROLS	92
E159 TURN IN COFFEE JUGS, WATER JUGS, OR OVENS	92
E152 PICK UP COFFEE JUGS, WATER JUGS, OR OVENS	92
E151 PICK UP AND INSPECT FLIGHT LUNCHES	92
D89 COUNSEL TRAINEES ON TRAINING PROGRESS	89
E147 PERFORM PERSONAL EQUIPMENT INSPECTION	89
E137 PARTICIPATE IN GENERAL OR SPECIALIZED MISSION BRIEFINGS	89
E116 COORDINATE CORRECTION OF AIRCRAFT DISCREPANCIES OR MALFUNCTIONS WITH AIRCRAFT COMMANDER	89
E135 PARTICIPATE IN CREW MAINTENANCE DEBRIEFINGS	89
E117 DEMONSTRATE TO PASSENGERS THE PROPER USE OF LIFE PRESERVERS, PARACHUTES, OR OXYGEN MASKS	89
G207 REFUEL RECEIVER AIRCRAFT WITH BOOM REFUELING TANKER MANUAL OPERATION	89
E123 MAINTAIN CURRENCY OF FLIGHT MANUALS, SAFETY AND OPERATIONAL SUPPLEMENTS, AND FLIGHT CREW CHECKLISTS	89
F169 MAKE ENTRIES ON AFTO FORMS 76 (C/KE-135 AIRCRAFT STRUCTURAL ASSESSMENT DATA (OMR))	89
H213 COMPUTE DD FORMS 365F (WEIGHT AND BALANCE CLEARANCE) USING LOAD ADJUSTER	89
G212 VISUALLY DIRECT RECEIVER AIRCRAFT INTO REFUELING POSITION	89
E122 LOAD CREW GEAR ON AIRCRAFT	89
D78 ADMINISTER TESTS	81
D87 CONDUCT RESIDENT COURSE FLIGHT INSTRUCTION	78
D84 CONDUCT RECEIVER CATEGORY TRAINING	78

TABLE B4

## COMMON TASKS PERFORMED BY CCTS ACADEMIC INSTRUCTOR BOOM OPERATORS

TASKS	PERCENT MEMBERS PERFORMING (N=7)
D78 ADMINISTER TESTS	100
D86 CONDUCT RESIDENT COURSE CLASSROOM TRAINING	100
D109 SCORE TESTS	100
D89 COUNSEL TRAINEES ON TRAINING PROGRESS	100
D90 DEMONSTRATE HOW TO LOCATE TECHNICAL INFORMATION	100
D104 MAINTAIN TRAINING RECORDS, CHARTS, OR GRAPHS	100
D112 WRITE TEST QUESTIONS	100
D93 DEVELOP LESSON PLANS	100
E153 POST CHANGES TO PERSONAL AIRCREW PUBLICATIONS	100
H213 COMPUTE DD FORMS 365F (WEIGHT AND BALANCE CLEARANCE) USING LOAD ADJUSTER	100
E123 MAINTAIN CURRENCY OF FLIGHT MANUALS, SAFETY AND OPERATIONAL SUPPLEMENTS, AND FLIGHT CREW CHECKLISTS	100
E133 ORDER AIRCREW FLIGHT LUNCHES	100
E125 MONITOR RADIO COMMUNICATIONS	100
E136 PARTICIPATE IN CREW OPERATION DEBRIEFINGS	100
E137 PARTICIPATE IN GENERAL OR SPECIALIZED MISSION BRIEFINGS	100
E135 PARTICIPATE IN CREW MAINTENANCE DEBRIEFINGS	100
E126 OPEN OR CLOSE CREW ENTRANCE DOORS	100
E127 OPERATE EMERGENCY ESCAPE HATCHES	100
G196 PERFORM BOOM REFUELING SYSTEM OPERATIONAL CHECKS	100
G203 PERFORM PREPARATION FOR CONTACT CHECKLIST PROCEDURES FOR NORMAL AIR REFUELING	100
H232 UPDATE WEIGHT AND BALANCE FORMS ON NORMAL MISSIONS	100
F162 ALIGN SEXTANT	100
E151 PICK UP AND INSPECT FLIGHT LUNCHES	100
E152 PICK UP COFFEE JUGS, WATER JUGS, OR OVENS	100
E114 ADVISE MAINTENANCE PERSONNEL IN IDENTIFYING AIRCRAFT SYSTEMS MALFUNCTIONS	100
G198 PERFORM NORMAL INFLIGHT CHECKLISTS OTHER THAN AIR REFUELING	100
G202 PERFORM POST AIR REFUELING CHECKLIST PROCEDURES	100
E150 PICK UP AIRCRAFT LIFE SUPPORT EQUIPMENT	100
E155 SECURE EQUIPMENT FOR FLIGHT OPERATIONS	100
E130 OPERATE GALLEY EQUIPMENT, SUCH AS OVENS OR COFFEE MAKERS	100
G206 REFUEL RECEIVER AIRCRAFT WITH BOOM REFUELING NORMAL SYSTEMS	100
G207 REFUEL RECEIVER AIRCRAFT WITH BOOM REFUELING TANKER MANUAL OPERATIONS	100
G212 VISUALLY DIRECT RECEIVER AIRCRAFT INTO REFUELING POSITION	100

TABLE B5

COMMON TASKS PERFORMED BY CENTRAL FLIGHT INSTRUCTOR COURSE INSTRUCTORS  
(SPC042)

TASKS	PERCENT MEMBERS PERFORMING (N=9)
G194 OPERATE AIR-CONDITIONING CONTROLS	100
F179 PREPARE TRAINING ACCOMPLISHMENT AND PROGRESS REPORT FORMS	100
E137 PARTICIPATE IN GENERAL OR SPECIALIZED MISSION BRIEFINGS	100
G206 REFUEL RECEIVER AIRCRAFT WITH BOOM REFUELING NORMAL SYSTEMS	100
F163 BRIEF FLIGHT CREWS CONCERNING AIR REFUELING MISSION ACTIVITIES	100
H213 COMPUTE DD FOR'S 365F (WEIGHT AND BALANCE CLEARANCE) USING LOAD ADJUSTER	100
D93 DEVELOP LESSON PLANS	100
E125 MONITOR RADIO COMMUNICATIONS	100
G197 PERFORM BOOM SYSTEM EMERGENCY OPERATIONS	100
G201 PERFORM OR PRACTICE TANKER AIR REFUELING BREAKAWAY PROCEDURES	100
E157 STUDY TECHNICAL ORDERS FOR ABNORMAL AND EMERGENCY INFLIGHT PROCEDURES	100
E136 PARTICIPATE IN CREW OPERATION DEBRIEFINGS	100
G202 PERFORM POST AIR REFUELING CHECKLIST PROCEDURES	100
G203 PERFORM PREPARATION FOR CONTACT CHECKLIST PROCEDURES FOR NORMAL AIR REFUELING	100
G207 REFUEL RECEIVER AIRCRAFT WITH BOOM REFUELING TANKER MANUAL OPERATION	100
E126 OPEN OR CLOSE CREW ENTRANCE DOORS	100
G204 PERFORM PREPARATION FOR CONTACT CHECKLIST PROCEDURES FOR TANKER MANUAL AIR REFUELING	100
G198 PERFORM NORMAL INFLIGHT CHECKLISTS OTHER THAN AIR REFUELING	100
G200 PERFORM OR PRACTICE INFLIGHT EMERGENCY PROCEDURES	100
G205 PERFORM REVERSE REFUELING	100
E127 OPERATE EMERGENCY ESCAPE HATCHES	100
E150 PICK UP AIRCRAFT LIFE SUPPORT EQUIPMENT	100
E122 LOAD CREW GEAR ON AIRCRAFT	100
E153 POST CHANGES TO PERSONAL AIRCREW PUBLICATIONS	100
E141 PARTICIPATE IN PREMISSION WEATHER BRIEFINGS	100
G196 PERFORM BOOM REFUELING SYSTEM OPERATIONAL CHECKS	100
G192 MONITOR FLIGHT INSTRUMENTS	100
E123 MAINTAIN CURRENCY OF FLIGHT MANUALS, SAFETY AND OPERATIONAL SUPPLEMENTS, AND FLIGHT CREW CHECKLISTS	100
E151 PICK UP AND INSPECT FLIGHT LUNCHES	100
E152 PICK UP COFFEE JUGS, WATER JUGS, OR OVENS	100
G190 INTERPRET RADIO SILENT SIGNALS	100
D113 WRITE TRAINING REPORTS	89
D86 CONDUCT RESIDENT COURSE CLASSROOM TRAINING	78

TABLE B6

COMMON TASKS PERFORMED BY BOOM OPERATOR PART TASK TRAINERS  
(SPC041)

TASKS	PERCENT MEMBERS PERFORMING (N=7)
G202 PERFORM POST AIR REFUELING CHECKLIST PROCEDURES	100
G207 REFUEL RECEIVER AIRCRAFT WITH BOOM REFUELING TANKER MANUAL OPERATION	100
G197 PERFORM BOOM SYSTEM EMERGENCY OPERATIONS	100
G196 PERFORM BOOM REFUELING SYSTEM OPERATIONAL CHECKS	100
E157 STUDY TECHNICAL ORDERS FOR ABNORMAL AND EMERGENCY INFLIGHT PROCEDURES	100
E153 POST CHANGES TO PERSONAL AIRCREW PUBLICATIONS	100
G206 REFUEL RECEIVER AIRCRAFT WITH BOOM REFUELING NORMAL SYSTEMS	86
G212 VISUALLY DIRECT RECEIVER AIRCRAFT INTO REFUELING POSITION	86
G211 VERBALLY DIRECT RECEIVER AIRCRAFT INTO REFUELING POSITION	86
G203 PERFORM PREPARATION FOR CONTACT CHECKLIST PROCEDURES FOR NORMAL AIR FUELING	86
G204 PERFORM PREPARATION FOR CONTACT CHECKLIST PROCEDURES FOR TANKER MANUAL AIR REFUELING	86
G201 PERFORM OR PRACTICE TANKER AIR REFUELING BREAKAWAY PROCEDURES	86
E125 MONITOR RADIO COMMUNICATIONS	86
G200 PERFORM OR PRACTICE INFLIGHT EMERGENCY PROCEDURES	86
D90 DEMONSTRATE HOW TO LOCATE TECHNICAL INFORMATION	86
G198 PERFORM NORMAL INFLIGHT CHECKLISTS OTHER THAN AIR REFUELING	86
G210 TAKE INFLIGHT CELESTIAL OBSERVATIONS	86
E123 MAINTAIN CURRENCY OF FLIGHT MANUALS, SAFETY AND OPERATIONAL SUPPLEMENTS, AND FLIGHT CREW CHECKLISTS	86
E154 REVIEW AFTO FORMS 781 SERIES FOR AIRCRAFT DISCREPANCIES	86
G191 MONITOR ENGINE INSTRUMENTS	86
G192 MONITOR FLIGHT INSTRUMENTS	86
E121 INSTRUCT EXTRA CREW MEMBERS OR PASSENGERS ON INFLIGHT OR OR GROUND EMERGENCY PROCEDURES	86
F182 REVIEW OR REPLACE FUSES OR BULBS	86
E137 PARTICIPATE IN GENERAL OR SPECIALIZED MISSION BRIEFINGS	86
E122 LOAD CREW GEAR ON AIRCRAFT	86
E135 PARTICIPATE IN CREW MAINTENANCE DEBRIEFINGS	86
F169 MAKE ENTRIES ON AFTO FORMS 76 (C-135 AIRCRAFT STRUCTURAL ASSESSMENT DATA)	86
E158 TURN IN AIRCRAFT LIFE SUPPORT EQUIPMENT	86
E141 PARTICIPATE IN PERMISSION WEATHER BRIEFINGS	86
G190 INTERPRET RADIO SILENT SIGNALS	86
D87 CONDUCT RESIDENT COURSE FLIGHT INSTRUCTION	71



APPENDIX C

MANAGER SUBGROUPS

TABLE C1

COMMON TASKS PERFORMED BY UNIT INFLIGHT REFUELING PROGRAM MANAGERS  
(SPC050)

TASKS	PERCENT MEMBERS PERFORMING (N=42)
B46 SUPERVISE INFLIGHT REFUELING OPERATORS (AFSC 11250)	98
B48 SUPERVISE INFLIGHT REFUELING OPERATORS/TECHNICIANS (AFSC 11270)	98
A3 COORDINATE OPERATIONAL WORK ACTIVITIES WITH OTHER SECTIONS	95
G206 REFUEL RECEIVER AIRCRAFT WITH BOOM REFUELING NORMAL SYSTEMS	95
G207 REFUEL RECEIVER AIRCRAFT WITH BOOM REFUELING TANKER MANUAL OPERATION	95
G201 PERFORM OR PRACTICE TANKER AIR REFUELING BREAKAWAY PROCEDURES	95
B25 COUNSEL PERSONNEL ON PERSONAL OR MILITARY-RELATED PROBLEMS	93
G187 ACT AS INFLIGHT SAFETY OBSERVER	93
G193 MONITOR FUEL PANELS	93
G191 MONITOR ENGINE INSTRUMENTS	93
G192 MONITOR FLIGHT INSTRUMENTS	93
G203 PERFORM PREPARATION FOR CONTACT CHECKLIST PROCEDURES FOR NORMAL AIR REFUELING	93
G210 TAKE INFLIGHT CELESTIAL OBSERVATIONS	93
D84 CONDUCT RECEIVER CATEGORY TRAINING	90
B51 WRITE CORRESPONDENCE	90
E123 MAINTAIN CURRENCY OF FLIGHT MANUALS, SAFETY AND OPERATIONAL SUPPLEMENTS, AND FLIGHT CREW CHECKLISTS	90
E121 INSTRUCT EXTRA CREW MEMBERS OR PASSENGERS ON INFLIGHT OR GROUND EMERGENCY PROCEDURES	90
G212 VISUALLY DIRECT RECEIVER AIRCRAFT INTO REFUELING POSITION	90
E117 DEMONSTRATE TO PASSENGERS THE PROPER USE OF LIFE PRESERVERS, PARACHUTES, OR OXYGEN MASKS	90
G196 PERFORM BOOM REFUELING SYSTEM OPERATIONAL CHECKS	90
H213 COMPUTE DD FORMS 365F (WEIGHT AND BALANCE CLEARANCE) USING LOAD ADJUSTER	90
G204 PERFORM PREPARATION FOR CONTACT CHECKLIST PROCEDURES FOR TANKER MANUAL AIR REFUELING	90
G194 OPERATE AIR-CONDITIONING CONTROLS	90
G202 PERFORM POST AIR REFUELING CHECKLIST PROCEDURES	90
G211 VERBALLY DIRECT RECEIVER AIRCRAFT INTO REFUELING POSITION	90
G198 PERFORM NORMAL INFLIGHT CHECKLISTS OTHER THAN AIR REFUELING	90
F168 INVENTORY PREPOSITIONED LIFE SUPPORT EQUIPMENT	90
F175 PERFORM PREFLIGHT SEXTANT OPERATIONAL CHECKS	90
E126 OPEN OR CLOSE CREW ENTRANCE DOORS	90
D79 ADVISE STAFF OR UNIT PERSONNEL ON TRAINING MATTERS	88

TABLE C2

COMMON TASKS PERFORMED BY ALERT FORCE MANAGERS  
(SPC040)

TASKS	PERCENT MEMBERS PERFORMING (N=25)
E135 PARTICIPATE IN CREW MAINTENANCE DEBRIEFINGS	100
H213 COMPUTE DD FORMS 365F (WEIGHT AND BALANCE CLEARANCE) USING LOAD ADJUSTER	100
G202 PERFORM POST AIR REFUELING CHECKLIST PROCEDURES	100
E154 REVIEW AFTO FORMS 781 SERIES FOR AIRCRAFT DISCREPANCIES	100
G198 PERFORM NORMAL INFLIGHT CHECKLISTS OTHER THAN AIR REFUELING	100
G211 VERBALLY DIRECT RECEIVER AIRCRAFT INTO REFUELING POSITION	100
G201 PERFORM OR PRACTICE TANKER AIR REFUELING BREAKAWAY PROCEDURES	100
G210 TAKE INFLIGHT CELESTIAL OBSERVATIONS	100
G196 PERFORM BOOM REFUELING SYSTEM OPERATIONAL CHECKS	100
G204 PERFORM PREPARATION FOR CONTACT CHECKLIST PROCEDURES FOR TANKER MANUAL AIR REFUELING	100
E125 MONITOR RADIO COMMUNICATIONS	96
E123 MAINTAIN CURRENCY OF FLIGHT MANUALS, SAFETY AND OPERATIONAL SUPPLEMENTS, AND FLIGHT CREW CHECKLISTS	96
E141 PARTICIPATE IN PERMISSION WEATHER BRIEFINGS	96
G212 VISUALLY DIRECT RECEIVER AIRCRAFT INTO REFUELING POSITION	96
E153 POST CHANGES TO PERSONAL AIRCREW PUBLICATIONS	96
G206 REFUEL RECEIVER AIRCRAFT WITH BOOM REFUELING NORMAL SYSTEMS	96
E126 OPEN OR CLOSE CREW ENTRANCE DOORS	96
E124 MAKE ENTRIES ON AFTO FORM 781A (MAINTENANCE DISCREPANCY AND WORK DOCUMENT)	96
E122 LOAD CREW GEAR ON AIRCRAFT	96
G203 PERFORM PREPARATION FOR CONTACT CHECKLIST PROCEDURES FOR NORMAL AIR REFUELING	96
E130 OPERATE GALLEY EQUIPMENT, SUCH AS OVENS OR COFFEE MAKERS	96
F175 PERFORM PREFLIGHT SEXTANT OPERATIONAL CHECKS	96
G207 REFUEL RECEIVER AIRCRAFT WITH BOOM REFUELING TANKER MANUAL OPERATION	96
F162 ALIGN SEXTANT	96
G193 MONITOR FUEL PANELS	92
G191 MONITOR ENGINE INSTRUMENTS	92
E136 PARTICIPATE IN CREW OPERATION DEBRIEFINGS	92
E157 STUDY TECHNICAL ORDERS FOR ABNORMAL AND EMERGENCY INFLIGHT PROCEDURES	92
G192 MONITOR FLIGHT INSTRUMENTS	92
G189 INFORM PILOTS OF REFUELING OPERATION STATUS	92

TABLE C3  
 COMMON TASKS PERFORMED BY  
 COMBAT EVALUATION GROUP FLIGHT EXAMINER BOOM OPERATORS  
 (SPC045)

TASKS	PERCENT MEMBERS PERFORMING (N=13)
E158 TURN IN AIRCRAFT LIFE SUPPORT EQUIPMENT	100
D109 SCORE TESTS	92
E125 MONITOR RADIO COMMUNICATIONS	92
G187 ACT AS INFLIGHT SAFETY OBSERVER	92
E157 STUDY TECHNICAL ORDERS FOR ABNORMAL AND EMERGENCY INFLIGHT PROCEDURES	92
G201 PERFORM OR PRACTICE TANKER AIR REFUELING BREAKAWAY PROCEDURES	92
F169 MAKE ENTRIES ON AFTO FORMS 76 (C/KE-135 AIRCRAFT STRUCTURAL ASSESSMENT DATA (OMR))	92
G203 PERFORM PREPARATION FOR CONTACT CHECKLIST PROCEDURES FOR NORMAL AIR REFUELING	92
G191 MONITOR ENGINE INSTRUMENTS	92
E123 MAINTAIN CURRENCY OF FLIGHT MANUALS, SAFETY AND OPERATIONAL SUPPLEMENTS, AND FLIGHT CREW CHECKLISTS	92
G207 REFUEL RECEIVER AIRCRAFT WITH BOOM REFUELING TANKER MANUAL OPERATION	92
G202 PERFORM POST AIR REFUELING CHECKLIST PROCEDURES	92
G193 MONITOR FUEL PANELS	92
G189 INFORM PILOTS OF REFUELING OPERATION STATUS	92
F178 PREPARE MISSION ACCOMPLISHMENT REPORTS	92
H230 SUPERVISE PASSENGERS ON NORMAL MISSIONS	92
H222 POSITION PARACHUTES OR OXYGEN BOTTLES ON NORMAL MISSIONS	92
G194 OPERATE AIR-CONDITIONING CONTROLS	92
E135 PARTICIPATE IN CREW MAINTENANCE DEBRIEFINGS	92
E141 PARTICIPATE IN PREMISSION WEATHER BRIEFINGS	92
H213 COMPUTE DD FORMS 365F (WEIGHT AND BALANCE CLEARANCE) USING LOAD ADJUSTER	92
E155 SECURE EQUIPMENT FOR FLIGHT OPERATIONS	92
E124 MAKE ENTRIES ON AFTO FORMS 781A (MAINTENANCE DISCREPANCY AND WORK DOCUMENT)	92
G192 MONITOR FLIGHT INSTRUMENTS	92
H229 SUPERVISE PASSENGERS ON CARGO MISSIONS	92
E127 OPERATE EMERGENCY ESCAPE HATCHES	92
G196 PERFORM BOOM REFUELING SYSTEM OPERATIONAL CHECKS	92
H219 PERIODICALLY CHECK CARGO RESTRAINTS ON CARGO MISSIONS	92
G206 REFUEL RECEIVER AIRCRAFT WITH BOOM REFUELING NORMAL SYSTEMS	92
H217 PERFORM LOAD PLANNING ON CARGO MISSIONS	92

TABLE C4

COMMON TASKS PERFORMED BY TANKER SCHEDULING MANAGERS  
(SPC049)

TASKS	PERCENT MEMBERS PERFORMING (N=10)
E125 MONITOR RADIO COMMUNICATIONS	100
E126 OPEN OR CLOSE NEW ENTRANCE DOORS	100
H213 COMPUTE DD FORMS 365F( WEIGHT AND BALANCE CLEARANCE) USING LOAD ADJUSTER	100
G198 PERFORM NORMAL INFLIGHT CHECKLISTS OTHER THAN AIR REFUELING	100
E136 PARTICIPATE IN CREW OPERATION DEBRIEFINGS	100
E135 PARTICIPATE IN CREW MAINTENANCE DEBRIEFINGS	100
G187 ACT AS INFLIGHT SAFETY OBSERVER	100
E123 MAINTAIN CURRENCY OF FLIGHT MANUALS, SAFETY AND OPERATIONAL SUPPLEMENTS, AND FLIGHT CREW CHECKLISTS	100
G191 MONITOR ENGINE INSTRUMENTS	100
E155 SECURE EQUIPMENT FOR FLIGHT OPERATIONS	100
G192 MONITOR FLIGHT INSTRUMENTS	100
G193 MONITOR FUEL PANELS	100
H232 UPDATE WEIGHT AND BALANCE FORMS ON NORMAL MISSIONS	100
E141 PARTICIPATE IN PREMISSION WEATHER BRIEFINGS	100
E157 STUDY TECHNICAL ORDERS FOR ABNORMAL AND EMERGENCY INFLIGHT PROCEDURES	100
E124 MAKE ENTRIES ON AFTO FORMS 781A (MAINTENANCE DISCREPANCY AND WORK DOCUMENT)	100
E154 REVIEW AFTO FORMS 781 SERIES FOR AIRCRAFT DISCREPANCIES	100
E137 PARTICIPATE IN GENERAL OR SPECIALIZED MISSION BRIEFINGS	100
E130 OPERATE GALLEY EQUIPMENT, SUCH AS OVENS OR COFFEE MAKERS	100
F165 COORDINATE OPERATIONAL WORK WITH OTHER CREW MEMBERS	100
E122 LOAD CREW GEAR ON AIRCRAFT	100
E114 ADVISE MAINTENANCE PERSONNEL IN IDENTIFYING AIRCRAFT SYSTEMS MALFUNCTIONS	100
E138 PARTICIPATE IN LIFE SUPPORT TRAINING SEMINARS	100
E152 PICK UP COFFEE JUGS, WATER JUGS, OR OVENS	100
E115 APPLY EXTERNAL ALTERNATING CURRENT (AC) AND DIRECT CURRENT (DC) POWER TO AIRCRAFT	100
G200 PERFORM AND PRACTICE INFLIGHT EMERGENCY PROCEDURES	100
A14 PLAN FLIGHT SCHEDULES	90
G206 REFUEL RECEIVER AIRCRAFT WITH BOOM REFUELING NORMAL SYSTEMS	90
G203 PERFORM PREPARATION FOR CONTACT CHECKLIST PROCEDURES FOR NORMAL AIR REFUELING	90
G202 PERFORM POST AIR REFUELING CHECKLIST PROCEDURES	90
G212 VISUALLY DIRECT RECEIVER AIRCRAFT INTO REFUELING POSITION	90

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