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DIGITAL FLIGHT SIMULATOR CAREER LADDER AFSCS 34134, 34154 AND 3--ETC(U)
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LEVEL II

OCCUPATIONAL SURVEY REPORT

DIGITAL FLIGHT SIMULATOR CAREER LADDER

AFSCs 34134, 34154 and 34174

AFPT 90-31-322

December 1978

98p.

OCCUPATIONAL SURVEY BRANCH
USAF OCCUPATIONAL MEASUREMENT CENTER
RANDOLPH AFB TEXAS 78148

TABLE OF CONTENTS

PREFACE

This report presents the results of a detailed Air Force Occupational Survey of the Digital Flight Simulator career ladder (AFSCs 34134, 34154 and 34174). The project was directed by USAF Program Technical Training, Volume 2, dated February 1977. 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 Second Lieutenant Linda A. Wiekhorst, Inventory Development Specialist. Captain Frederick B. Bower, Jr. and Mr. Guy B. Cole, Occupational Survey Analysts, analyzed the data and wrote the final report. This report has been reviewed and approved by Lieutenant Colonel Jimmy L. Mitchell, Chief, Airman Career Ladders Analysis Section, Occupational Survey Branch, USAF Occupational Measurement Center, Randolph AFB, Texas, 78148.

Computer programs for analyzing the occupational data were designed by Dr. Raymond E. Christal, Occupational and Manpower Research Division, Air Force Human Resources Laboratory (AFHRL), and were written by the Project Analysis and Programming Branch, Computational Sciences Division, AFHRL.

Copies of this report are available to air staff sections, major commands, and other interested training and management personnel upon request to the USAF Occupational Measurement Center, attention of the Chief, Occupational Survey Branch (OMY), Randolph AFB, Texas 78148.

This report has been reviewed and is approved.

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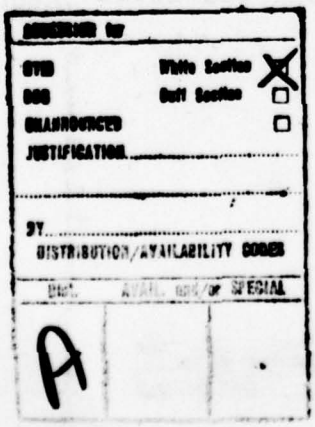


OCCUPATIONAL SURVEY REPORT
DIGITAL FLIGHT SIMULATOR CAREER LADDER
(AFSCs 34134, 34154, AND 34174)

INTRODUCTION

This is a report of an occupational survey of personnel in the Digital Flight Simulator career ladder by the Occupational Survey Branch, USAF Occupational Measurement Center, completed during October 1978. This specialty was created in April 1976, when the AFS 342X0, Flight Simulator career ladder was split forming AFS 341X4 and AFS 341X3 (Analog Flight Simulator career ladder). An occupational survey of the AFS 342X0 had been conducted and results published in March 1974.

Responsible primarily for the operation and maintenance of digital flight simulators and associated equipment, personnel usually enter this career ladder by first attending the C3ABR34134 Digital Flight Simulator Specialist course at Chanute AFB, Illinois. These personnel may be either "pipeline" students from basic training or retrainees from other career specialties. Upon completion of this 15 week four day course, graduates are awarded the 3-skill level. They are then assigned to operational units worldwide possessing digital flight simulators. Currently the career ladder is slightly overmanned in the seven through nine and 12+ year groups, but slightly under strength in the grade of E-5 as reported in the USAF Retraining Advisory.

This report is intended to examine the Digital Flight Simulator career ladder based on tasks performed by survey respondents. Topics discussed in this report include: (1) development and administration of the survey instrument; (2) the job structure found within the career ladder and the relationship to skill level and experience level groupings; (3) comparisons of the job structure with current career ladder documents such as the AFR 39-1 Specialty Descriptions and the Specialty Training Standard (STS); (4) comparison of the results of this study with results from the previous survey; and (5) background data relative to job satisfaction.

The survey instrument used to collect the data for this report was designed to survey all seven Training Devices career ladders. Therefore, it was possible to compare this specialty with the other ladders in the career field. An analysis of the AFS 341XX Training Devices career field is attached to this report. Since all career ladders in this field combine at the 9-skill level, the analysis of AFS 34197 personnel is also included in the addendum.

SUMMARY OF RESULTS

1. Survey Coverage: Inventory booklets were administered to Digital Flight Simulator personnel during the period December 1977 through April 1978. Survey results are based on responses from 415 of the 531 incumbents assigned, or 78 percent of the total assigned career ladder population.

2. Career Ladder Structure: Eight major groups of jobs were identified within the career ladder. Six of these groups were concerned with the operation and maintenance of digital flight simulators. Group differences were based primarily on the types of flight simulators maintained and the average number of inventory tasks performed. The remaining groups consisted of personnel assigned either as supervisors and managers, or as software and simulator development technicians.

3. DAFSC Differences: Jobs performed by members of the career ladder were fairly homogeneous. The 3- and 5-skill level incumbents were primarily performing tasks relating to performing preventive maintenance and operating training devices. The 5-skill level airmen do however, perform a higher average number of tasks than do 3-skill level airmen. At the 7-skill level, respondents continue to spend the majority of their time performing technical tasks and duties although they also function as supervisors.

4. CONUS/Overseas Comparison: Major differences were noted between the CONUS and overseas groups. The 5-skill level airmen overseas perform more and varied tasks than their CONUS counterparts particularly tasks normally performed by DAFSC 341X6, Digital Navigation/Tactics Training Devices, personnel.

5. AFR 39- Evaluation: The current AFR 39-1 specialty descriptions were found to be complete and accurately portrayed the duties and responsibilities of personnel in the career ladder in general terms.

6. STS Evaluation: Overall, the STS was found to be up to date and complete in providing general training requirements. However, many paragraphs were subject knowledge rather than task knowledge oriented, making a complete analysis difficult.

7. Implications: There is a similarity of basic knowledges and skills, as evidenced by the performance of a large number of common tasks, between this and four of the 6 other ladders in this career field. Based on these similarities it may be possible to restructure the career field to provide a more efficient and viable career structure.

INVENTORY DEVELOPMENT

The data collection instrument for this occupational survey was USAF Job Inventory AFPT 90-341-322. The survey instruments from previous studies of career ladders in the Training Devices career field served as the starting point for development of this new task inventory. The previous task lists were expanded and refined through a thorough research of career field publications and directives. Inventory developers then conducted personal interviews with 44 subject matter specialists at eight separate facilities to review the tentative task list for completeness and accuracy. This process resulted in a final comprehensive "career field" inventory of 1144 tasks grouped under 21 duty headings and a background section that requested information about the respondents such as grade, TAFMS, duty title and job interest.

INVENTORY ADMINISTRATION

During the period December 1977 through April 1978, consolidated base personnel offices in operational units worldwide administered the inventory to job incumbents holding DAFSC 341XX. These job incumbents were selected from a computer generated mailing list obtained from personnel data tapes maintained by the Air Force Human Resources Laboratory (AFHRL). Each individual who completed the inventory first completed an identification and biographical information section (background section), and then checked each task performed in their current job.

After checking all tasks performed, each incumbent then rated each of these tasks on a nine-point scale showing relative time spent on that task as compared to all other tasks checked. The ratings ranged from one (very- small-amount time spent) through five (about-average time spent) to nine (very-large-amount time spent). To determine relative time spent for each task checked by a respondent, all of an incumbents ratings are assumed to account for 100 percent of the individuals time spent on the job and are summed. Each task rating is then divided by the total task responses and the quotient multiplied by 100. This procedure now provides a basis for comparing tasks in terms of the average percent time spent performing any given task and for comparing groups.

SURVEY SAMPLE

Personnel were selected to participate in this survey so as to insure a balanced representation across MAJCOM and DAFSC groups. Table 1 reflects the percentage distribution, by major command, of assigned personnel in the AFS 341X4 career ladder as of March 1978. Also reflected is the distribution of incumbents in the final survey sample. The 415 respondents making up the final sample represent 78 percent of the 531 members assigned to the Digital Flight Simulator career ladder.

Table 2 represents the percentage distribution by DAFSC of assigned personnel and the comparison to the survey sample. Table 3 reflects the percentage distribution of the survey sample by AFMS groups. These sampling distributions tend to verify that the survey sample is representative of the overall career ladder population.

TABLE 1

COMMAND REPRESENTATION IN THE SURVEY SAMPLE

COMMAND	PERCENT OF ASSIGNED	PERCENT OF SAMPLE
TAC	38	35
MAC	30	30
SAC	15	17
USAFE	7	7
ATC	6	6
OTHER	4	5
TOTAL	100	100

TOTAL ASSIGNED - 531
TOTAL SAMPLE - 415
PERCENT OF SAMPLE - 78%

TABLE 2

DAFSC REPRESENTATION IN THE SURVEY SAMPLE

DAFSC	PERCENT OF ASSIGNED	PERCENT OF SAMPLE
34134	11	7
34154	50	56
34174	39	37

TABLE 3

SURVEY DISTRIBUTION BY MONTHS TIME IN SERVICE

	1-48	49-96	97-144	145-192	193-240	241+
NUMBER IN SAMPLE	127	107	77	49	38	17
PERCENT OF SAMPLE	31%	26%	18%	12%	9%	4%

CAREER LADDER STRUCTURE

A key aspect of the occupational survey program is to examine the job structure of career fields or ladders on the basis of what people are actually doing in the field, rather than on the basis of how official career field and ladder documents say they are structured. This analysis of actual job structure is made possible by the use of the Comprehensive Occupational Data Analysis Programs (CODAP). By using CODAP, job functions are identified on the basis of similarity in tasks performed and relative time spent performing the tasks. Using the job structure as a starting point, it is then possible to first describe the career field or career ladder as it presently exists, and then, in turn, evaluate the pertinent career ladder documents, such as AFR 39-1 Specialty Descriptions and the Specialty Training Standard.

The career ladder structure analysis process consists of determining the functional job structure of career ladder personnel in terms of job types, clusters, and independent job types. A job type is a group of individuals who perform many of the same tasks and also spend similar amounts of time performing them. When there is a substantial degree of similarity between different job types, they are grouped together and labeled as clusters. Finally, there are often cases of specialized job types that are too dissimilar to be grouped into any cluster. These fairly unique groups are labeled independent job types.

Based on task similarity and relative time spent, the best division of the jobs performed in the 341X4 career ladder is illustrated in figure 1. These clusters and job types are listed below. Job types within clusters are not specifically titled or referenced by group numbers since, in most cases, they represent only a difference in scope and complexity of jobs performed by cluster members. The cluster description however describes the primary differences between the various job types that make up the cluster. The GRP number shown beside each title is a reference to computer printed information included for use by classification and training officials.

I. Flight/Mission Simulator Supervisors and Managers (GRP010, N=55)

II. Digital Flight Simulator Operator Maintainers (GRP117, N=206)

III. B-52 Cockpit Procedures Trainer Operator Maintainers, (GRP112, N=10)

IV. Digital Flight Simulator Shift Supervisors (GRP111, N=18)

V. Fighter Aircraft Digital Flight Simulator Operator Maintainers (GRP088, N=22)

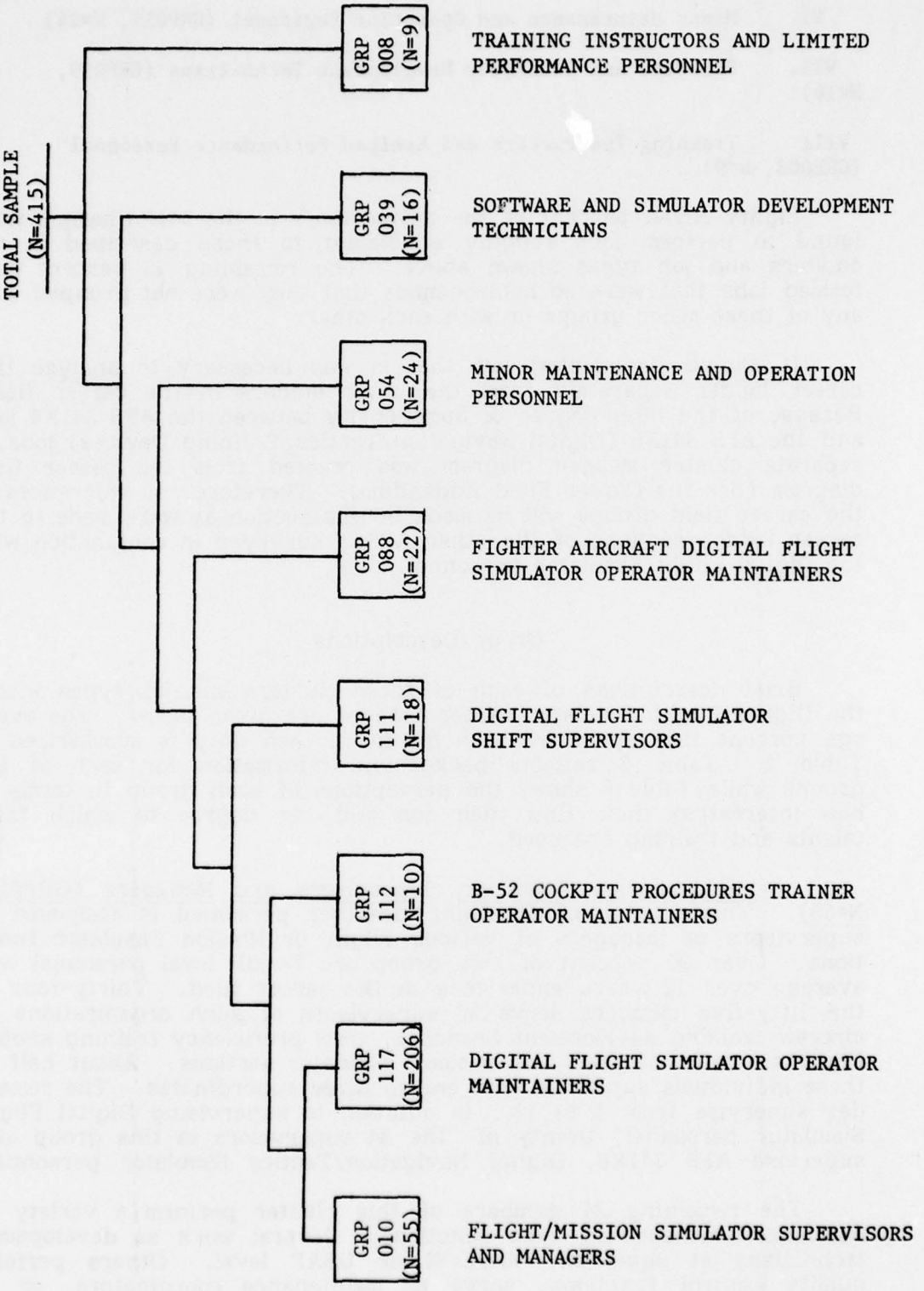


FIGURE 1

DIGITAL FLIGHT SIMULATOR CAREER LADDER
341X4

VI. Minor Maintenance and Operation Personnel (GRP054, N=24)

VII. Software and Simulator Development Technicians (GRP039, N=16)

VIII. Training Instructors and Limited Performance Personnel (GRP008, N=9)

Eighty-seven percent of the respondents in the 341X4 sample were found to perform jobs roughly equivalent to those described in the clusters and job types shown above. The remaining 13 percent performed jobs that were so heterogenous that they were not grouped with any of these major groups or with each other.

It should be pointed out that is was necessary to analyze this career ladder separately from the other ladders in the career field. Because of the high degree of homogeneity between the AFS 341X4 jobs and the AFS 341X6 (Digital Navigation/Tactics Training Devices) jobs, a separate cluster merger diagram was created from the career field diagram (See the Career Field Addendum). Therefore, no references to the career field groups will be made in this section as were made in the career ladder sections of the other AFSCs surveyed in conjunction with the Digital Flight Simulator personnel.

Group Descriptions

Brief descriptions of each of these clusters and job types within the Digital Flight Simulator career ladders are given below. The average percent time spent by each group on each duty is summarized in Table 4. Table 5 reflects background information for each of the groups while Table 6 shows the perceptions of each group in terms of how interesting their find their job and the degree to which their talents and training are used.

I. Flight/Mission Simulator Supervisors and Managers (GRP010, N=55). This cluster of 55 flight simulator personnel is composed of supervisors or managers of various Flight or Mission Simulator functions. Over 90 percent of this group are 7-skill level personnel who average over 12 years experience in the career filed. Thirty-four of the fifty-five members serve as supervisors of such organizations as aircrew training development branches, crew proficiency training shops, flight simulator sections, or mission simulator sections. About half of these individuals supervise from one to three subordinates. The remainder supervise from 4 to 12. In addition to supervising Digital Flight Simulator personnel, twenty of the 34 supervisors in this group also supervise AFS 341X6, Digital Navigation/Tactics Simulator personnel.

The remaining 21 members of this cluster perform a variety of specialized management type functions. Several work as development technicians at squadron, MAJCOM or USAF level. Others perform quality control functions, serve as maintenance coordinators, or as supply and equipment monitors.

II. Digital Flight Simulator Operator Maintainers (GRP117, N=206). This large cluster of 206 personnel includes over half of the Digital Flight Simulator personnel responding to the survey. Approximately 70 percent of these personnel hold the 5-skill level. Performing an average of over 300 tasks, these personnel form the nucleus of the operation and maintenance of digital flight simulators. Although approximately one third supervise a subordinates, technical operation and maintenance task performance is the predominant function of all members of this cluster.

The job types within this cluster represent four different degrees of scope and complexity of jobs performed by operation and maintenance personnel in this ladder. Two factors seemed to contribute to the grouping of jobs within this cluster. The first and foremost was experience level of group members, however, differences in the kind of simulators operated and/or maintained also appeared to be a factor in some of the groups.

The first job type containing 38 members or approximately 18 percent of the cluster, was composed of individuals who were primarily assigned to MAC and who averaged only 28 months experience in the career ladder. Since this group was considerably below the other three groups in experience level, it is reasonable to assume that this was a major factor in limiting these personnel to performance of an average of only 187 tasks while other groups averaged performing 250 or more tasks. Further analysis of task performance revealed that tasks performed by this group were those which were also performed by large percentages of other groups but which were often the less difficult tasks. This was further substantiated by the fact that the average task difficulty per unit time spent was lower for this group than other groups in this cluster. The second job type group in this cluster included 120 personnel who perform on the average 359 tasks, most of which are related to the technical operation and maintenance of digital flight simulators. Although 40 percent of this group are 7-skill level personnel and 44 percent report that they supervise one or more subordinates, supervisory tasks occupy less than 4 percent of the group work time. In essence this group represents the highly trained specialist/ technician in this career ladder. Members average eight years in service and over 70 months in the career field. Except for ATC all major using commands are represented in this group. A variety of simulators were operated and maintained by these personnel including C-5A and C-141, 28 percent; F-4E, 17 percent; 15/A, 6 percent; and FB111A, 8 percent.

A third small group composed of four TAC and four USAFE personnel was also identified in this cluster. The personnel in this group was much like those described above except that they performed an average of only 263 tasks and had slightly less time in service and in the career ladder than the previous group. Most of this group operated and maintained F-15A simulators although 12 percent worked on F-111 equipment. Although some of the tasks were common to both groups, there was a considerable difference in many of the tasks per-

formed due primarily to the difference in simulators operated and maintained by the two groups.

The fourth group in this cluster included 25 personnel, also primarily from TAC and USAFE. These personnel averaged slightly over five years in service and had an average of almost four and one-half years in the career field. The average number of tasks performed was below that of the previous two groups and the average task difficulty per unit time spent only slightly above that of the first group in this cluster. These personnel performed operations and maintenance tasks primarily in support of F-4E simulators.

III. B-52 Cockpit Procedures Trainer Operator Maintainers (GRP112, N=10). All but two of this ten member group operate and maintain B-52 Cockpit Procedures Trainers. Typically members of this group are 5-skill level personnel with an average of 28 months in the career field and slightly over four years in service. They perform an average of 174 tasks with the largest percentage of their work time spent on removing or replacing components or systems units, performing preventive maintenance and operating training devices. Many of the tasks performed are those which are common to most digital flight simulator operator maintainers. Some tasks however were relatively unique to this group. These included a number of operator tasks such as operating digital readout units, card readers, graphic display units, keypunches, line printer units, magnetic disc units and manufacturer supplied specialized test equipment. In addition to isolating malfunctions on many of the above items of equipment, 50 percent or more of these personnel also isolated malfunctions on CRT terminals, central processor units, direct or random memory access systems, graphic display and weather or environmental effects systems.

IV. Flight Simulator Shift Supervisors (GRP111, N=18). This group of 18 respondents were primarily shift chiefs. As such, they devote approximately one third of their work time to supervision and administration and the remainder to the performance of technical tasks. The large number of tasks performed and the large percentage of time spent on operations, maintenance and repair of simulators, delineates this group from supervisors in the Flight/Mission Simulator Supervisors and Managers cluster who perform few tasks and spend very little of their work time in the performance of technical tasks.

Members of this group are from four of the major using commands, one third from MAC, one third from TAC and the remainder from SAC and PACAF.

In addition to supervising Digital Flight Simulator personnel, 78 percent report that they also supervise Digital Navigational/Tactics Training Devices Specialists.

V. Fighter Aircraft Digital Flight Simulator Operator Maintainers (GRP088, N=22). Over 90 percent of the members of this group are from TAC and USAFE and are engaged in the operation and maintenance

of Flight Simulators for fighter aircraft, primarily the F-4E and F-15A. These personnel are primarily 5-skill level with an average of two years in the career field and slightly over four years time in service.

Analysis of task performance reveals that approximately one-third of their job time is devoted to the performance of simulator operator tasks although they also perform maintenance on the equipment operated. The primary tasks performed which discriminate this group from others is a number of specialized operator tasks characteristic of fighter type flight simulators. Typical tasks of this nature include input air-to-air intercepts, insert malfunctions or emergencies into systems, insert simulated electronic countermeasures, operate air decoy missile systems such as drones, operate threat display ECM systems, and serve as ground crew during simulator missions.

VI. Minor Maintenance and Operation Personnel (GRP054, N=24). This independent job type contains personnel who perform an average of only 103 tasks, most of which are concentrated within the duties of preventive maintenance, removing or replacing components or systems units and operating training devices. A review of tasks performed by these personnel reveals that jobs performed are rather heterogenous in that only a few tasks are common to 80 percent or more of the group. Most of these are the more routine type tasks such as clean up shops; remove or install indicator or panel lights; test electronic components such as diodes, transistors, capacitors or resistors; operate teletypewriters; etc. In comparing this group to other jobs identified by the job grouping process, it was found that a majority of the tasks performed are common to other operator maintenance groups in this ladder and that none are unique to this group. The low average number of tasks and the kind of tasks most commonly performed, indicates that jobs performed by these respondents are of a very limited scope as compared to other maintenance and operator jobs. This is understandable since members of this group have the lowest experience level of any group, with an average of only 16 months experience in the career ladder, and an average of only 44 months service.

VII. Software and Simulator Development Technicians (GRP039, N=16). All but one of these sixteen high level technicians are 7-skill level and work in a variety of specialized jobs resulting in a rather heterogenous group. Although members averaged 133 tasks performed, only 17 of these tasks were common to 80 percent or more of the group members. All of these common tasks were either related to the development or modification of software programs; preparation of recommendations for, or evaluation of new equipment; or pertained to the modification of flight simulators. As an average, members of this group have over 12 years in service and ten years in the career ladder. Only members of the Flight/Mission Simulator Supervisors and Managers group have more experience in the career ladder than these personnel.

VIII. Training Instructors and Limited Performance Personnel (GRP008, N=9). This small group includes nine individuals who perform jobs involving a very few tasks. Five of these personnel are formal training

instructors who perform such tasks as conduct course classroom training, prepare lesson plans, write test questions and evaluate progress of trainees. The other four individuals perform tasks primarily in the duties of performing preventive maintenance and operating training devices. These personnel grouped together primarily because they perform a very limited number of tasks.

TABLE 4

PERCENT TIME SPENT ON DUTIES

DUTIES	SUPERVISORS & MANAGERS (GRP010)	OPERATOR MAINTAINERS (GRP117)	B-52 OPERATOR MAINTAINERS (GRP112)	SHIFT SUPERVISORS (GRP111)	FIGHTER AC OPERATOR MAINTAINERS (GRP088)	MINOR MAINT & OPERATION PERSONNEL (GRP054)	DEVELOPMENT TECHNICIANS (GRP039)	INSTRUCTORS & LIMITED PERFORMANCE PERSONNEL (GRP008)
SUPERVISORY AND MANAGEMENT FUNCTIONS								
A ORGANIZING AND PLANNING	16	*	*	4	*	*	0	*
B DIRECTING AND IMPLEMENTING	26	2	2	11	2	2	7	3
C INSPECTING AND EVALUATING	20	1	*	7	*	*	13	*
D TRAINING	9	2	1	7	*	*	2	29
ADMINISTRATIVE FUNCTIONS								
E WORKING WITH FORMS, RECORDS, REPORTS DIRECTIVES, OR TECHNICAL DATA	10	3	4	5	4	4	5	*
TECHNICAL FUNCTIONS								
F PERFORMING PREVENTIVE MAINTENANCE	5	12	16	11	17	21	2	21
G OPERATING TRAINING DEVICES	4	16	15	7	33	19	22	27
H OPERATING MISSILE PROCEDURES TRAINERS	*	*	*	*	1	*	0	0
I ISOLATE MALFUNCTIONS ON COMPUTERS AND PERIPHERAL EQUIPMENT	*	4	4	3	2	3	9	2
J ISOLATE MALFUNCTIONS ON SIMULATOR SYSTEMS AND PERIPHERAL EQUIPMENT	*	5	5	5	6	4	2	*
K ISOLATE MALFUNCTIONS ON SIMULATOR SYSTEMS WITH ANALOG COMPUTERS	*	*	0	*	*	*	0	*
L ISOLATE MALFUNCTIONS ON SIMULATOR SYSTEMS WITH DIGITAL COMPUTERS	*	5	4	4	4	3	2	1
M ISOLATE MALFUNCTIONS ON SIMULATOR AND COMPUTER COMPONENTS	1	9	9	9	4	8	14	3
N ISOLATE MALFUNCTIONS ON MISSILE PROCEDURE TRAINERS	0	*	*	*	0	*	0	0
O REMOVING OR REPLACING COMPONENTS OR SYSTEM UNITS	2	16	17	9	9	19	3	2
P ALIGNING AND ADJUSTING SIMULATOR SYSTEMS OR COMPONENTS	1	9	7	6	3	5	3	2
Q PERFORMING IN-SHOP MAINTENANCE	2	6	6	4	3	4	1	0
R PERFORMING INSTRUMENT TRAINER INSTRUCTION FUNCTIONS	*	1	1	1	3	*	3	3
S MAINTAINING MOBILE AIRCREW TRAINING DEVICES	0	*	0	*	0	0	0	0
T PERFORMING OPERATIONAL CHECKS	1	5	7	4	3	4	3	1
U MAINTAINING MISCELLANEOUS EQUIPMENT	2	1	3	*	2	3	1	3

* LESS THAN 1 PERCENT

TABLE 5

BACKGROUND INFORMATION BY JOB TYPE GROUPS

	SUPERVISORS & MANAGERS (GRP010)	OPERATOR MAINTAINERS (GRP117)	B-52 OPERATOR MAINTAINERS (GRP112)	SHIFT SUPERVISORS (GRP111)	FIGHTER AC OPERATOR MAINTAINERS (GRP088)	MINOR MAINT & OPERATION PERSONNEL (GRP054)	DEVELOPMENT TECHNICIANS (GRP039)	INSTRUCTORS & LIMITED PERFORMANCE PERSONNEL (GRP008)
AVERAGE NUMBER OF TASKS PERFORMED	76	307	174	245	108	103	133	26
AVERAGE PAYGRADE	6.3	4.4	3.8	5.9	3.8	3.5	5.6	4.2
PERCENT MEMBERS IN FIRST ENLISTMENT	2%	35%	50%	6%	59%	63%	0%	33%
PERCENT ASSIGNED OVERSEAS	9%	15%	0%	17%	14%	0%	19%	0%
PERCENT OF MEMBERS WHO SUPERVISE	62%	32%	10%	72%	9%	4%	37%	0%
MONTHS AVERAGE TIME IN 341X4 CAREER FIELD	147	59	28	123	24	16	130	48
MONTHS AVERAGE TOTAL ACTIVE MILITARY SERVICE (TAFMS)	195	80	49	168	52	44	146	74
DAFSC REPRESENTATION WITHIN GROUPS								
MEMBERS WHO ARE 3-SKILL LEVEL	0%	4%	10%	0%	14%	33%	0%	22%
MEMBERS WHO ARE 5-SKILL LEVEL	7%	69%	80%	17%	86%	67%	6%	78%
MEMBERS WHO ARE 7-SKILL LEVEL	93%	27%	10%	83%	0%	0%	94%	0%

TABLE 6

EXPRESSION OF JOB INTEREST AND PERCEIVED UTILIZATION OF TALENTS AND TRAINING BY JOB TYPE GROUPS
(PERCENT RESPONDING)

	SUPERVISORS & MANAGERS (GRP010)	OPERATOR MAINTAINERS (GRP117)	B-52 OPERATOR MAINTAINERS (GRP112)	SHIFT SUPERVISORS (GRP111)	FIGHTER AC OPERATOR MAINTAINERS (GRP088)	MINOR MAINT & OPERATION PERSONNEL (GRP054)	DEVELOPMENT TECHNICIANS (GRP039)	INSTRUCTORS & LIMITED PERFORMANCE PERSONNEL (GRP008)
I FIND MY JOB:								
DULL	18%	6%	10%	0%	9%	8%	6%	11%
SO-SO	6%	4%	10%	11%	18%	8%	0%	0%
INTERESTING	78%	90%	80%	89%	73%	84%	94%	89%
MY JOB UTILIZES MY TALENTS:								
NOT AT ALL TO VERY LITTLE	18%	11%	0%	6%	36%	21%	13%	11%
FAIRLY WELL TO VERY WELL	66%	76%	100%	55%	55%	75%	43%	78%
EXCELLENTLY TO PERFECTLY	16%	12%	0%	39%	9%	4%	44%	11%
NOT REPORTED	0%	1%	0%	0%	0%	0%	0%	0%
MY JOB UTILIZES MY TRAINING:								
NOT AT ALL TO VERY LITTLE	18%	11%	0%	11%	36%	33%	13%	22%
FAIRLY WELL TO VERY WELL	64%	79%	100%	61%	50%	63%	49%	78%
EXCELLENTLY TO PERFECTLY	18%	10%	0%	28%	9%	4%	38%	0%
NOT REPORTED	0%	0%	0%	0%	5%	0%	0%	0%

ANALYSIS OF DAFSC GROUPS

In conjunction with examining the job structure of the career ladder, DAFSC groups are also examined as part of each occupational analysis. This analysis allows for the identification of skill level differences and for comparison of similar skill level personnel across various career ladders (See Career Field Addendum). This data by DAFSC groups is used in the analysis of career ladder documents such as the AFR 39-1 Specialty Descriptions and the Specialty Training Standard (STS).

Jobs within the Digital Flight Simulator career ladder represent a relatively homogeneous grouping encompassing duties and tasks specific to the operation and maintenance of digital flight simulators. Table 7 depicts the relative percent of time spent by skill level groups on the various duties listed in the job inventory. There is a clear differentiation between 3- and 5-skill level technical specialists and the 7-skill level supervisors. As would be expected those jobs requiring more supervision, management or technical skill are performed by higher skill level personnel. However, 7-skill levels continue to spend more of their time performing technical duties as opposed to supervisory and management functions. Tasks representative of the total career ladder are listed in Table 8.

Skill Level Groups

As a group, DAFSC 34134 apprentice digital flight simulator specialists perform an average of 131 of the 1144 tasks listed in the job inventory. They spend 59 percent of their time performing in the three duty areas of performing preventive maintenance, operating training devices, and removing or replacing system components. Only 16 tasks are performed by 65 percent or more of the 3-skill level personnel as listed in Table 9. Fifty-five tasks are performed by 50 percent or more of the group.

Averaging 229 tasks performed, the 5-skill level digital flight simulator specialists perform much like the 3-skill level group in that they spend a great deal of their time performing in the same task areas (See Table 7). However, 5-skill levels spend more time performing tasks perform in the technical duties are of a higher level of difficulty. Therefore, the differences between the two groups are as would be expected. While both jobs are essentially technical, the 5-skill level job is more complicated and involved because of the inclusion of more difficult technical and supervisory tasks. Representative tasks for this group appear in Table 10.

At the 7-skill level, the duties performed shift from technical toward supervisory functions (See Table 7). However, DAFSC 34174 personnel are still spending 55 percent of their time performing technical functions. Only 68 percent of this group indicated they were

supervisors which could be some of the explanation for the low amount of time spent in supervisory duties. In addition to performing routine as well as the more difficult tasks relating to training devices maintenance, 7-skill level personnel also spend a large block of time operating training devices. Averaging 201 tasks performed, 63 of those tasks are performed by 50 percent or more of the group. The least homogeneous of the DAFSC groups in this career ladder, only 16 tasks are performed by 60 percent or more of DAFSC 34174 personnel as listed in Table 11. The differences between 5- and 7-skill level personnel are shown in Table 12. As would be expected, the differences are routine technical tasks for the 5-skill level group and supervisory tasks for the 7-skill level group.

A factor that may account for the low degree of homogeneity in this career ladder is the diverse number of simulators and computers operated and maintained by AFS 341X4 personnel. Table 13 illustrates this diversity and the low percentages operating and maintaining this equipment.

TABLE 7

PERCENT TIME SPENT ON DUTIES BY DAFSC GROUPS
341X4

	DUTIES	DAFSC 34134 (N=29)	DAFSC 34154 (N=232)	DAFSC 34174 (N=154)
SUPERVISORY AND MANAGEMENT				
A	ORGANIZING AND PLANNING	*	1	8
B	DIRECTING AND IMPLEMENTING	1	3	14
C	INSPECTING AND EVALUATING	*	2	12
D	TRAINING	1	2	5
ADMINISTRATIVE FUNCTIONS				
E	WORKING WITH FORMS, RECORDS, REPORTS, DIRECTIVES, OR TECHNICAL DATA	5	4	6
TECHNICAL FUNCTIONS				
F	PERFORMING PREVENTIVE MAINTENANCE	21	14	7
G	OPERATING TRAINING DEVICES	24	19	10
H	OPERATING MISSILE PROCEDURES TRAINERS	1	*	*
I	ISOLATE MALFUNCTIONS ON COMPUTERS AND PERIPHERAL EQUIPMENT	2	3	3
J	ISOLATE MALFUNCTIONS ON SIMULATOR SYSTEMS AND PERIPHERAL EQUIPMENT	4	5	3
K	ISOLATE MALFUNCTIONS ON SIMULATOR SYSTEMS WITH ANALOG COMPUTERS	1	*	*
L	ISOLATE MALFUNCTIONS ON SIMULATOR SYSTEMS WITH DIGITAL COMPUTERS	3	4	3
M	ISOLATE MALFUNCTIONS ON SIMULATOR AND COMPUTER COMPONENTS	6	8	6
N	ISOLATE MALFUNCTIONS ON MISSILE PROCEDURE TRAINERS	*	*	*
O	REMOVING OR REPLACING COMPONENTS OR SYSTEM UNITS	14	14	8
P	ALIGNING AND ADJUSTING SIMULATOR SYSTEMS OR COMPONENTS	5	7	6
Q	PERFORMING IN-SHOP MAINTENANCE	5	5	4
R	PERFORMING INSTRUMENT TRAINER INSTRUCTION FUNCTIONS	*	2	1
S	MAINTAINING MOBILE AIRCREW TRAINING DEVICES	-	*	*
T	PERFORMING OPERATIONAL CHECKS	4	5	3
U	MAINTAINING MISCELLANEOUS EQUIPMENT	3	2	1

* INDICATES LESS THAN ONE PERCENT

TABLE 8

REPRESENTATIVE TASKS PERFORMED BY DAFSC 341X4 PERSONNEL
(N=415)

	TASKS	PERCENT MEMBERS PERFORMING
E11	MAKE ENTRIES ON SIMULATOR MAINTENANCE FORMS SUCH AS AFTO FORMS 349, 350, 359, 781 OR 781A	79
F19	CLEAN UP SHOPS	78
F46	TEST ELECTRONIC COMPONENTS SUCH AS DIODES, TRANSISTORS, CAPACITORS, OR RESISTORS	76
G40	OPERATE DIGITAL COMPUTER CONTROL PANELS	74
F50	VISUALLY INSPECT ELECTRICAL SYSTEMS	73
F54	VISUALLY INSPECT POWER SUPPLY SYSTEMS	73
G12	LOAD DIGITAL COMPUTER PROGRAMS	72
G41	OPERATE DIGITAL COMPUTER SYSTEMS	70
056	REMOVE OR INSTALL INDICATORS	70
F52	VISUALLY INSPECT HYDRAULIC SYSTEMS	70
F60	VISUALLY INSPECT WIRE HARNESSES, CABLES, OR CONNECTOR PLUGS	70
F58	VISUALLY INSPECT VOLTAGE LEVELS, FREQUENCY VARIATIONS, OR CURRENT	70
F37	PHYSICALLY CHECK FOR LOOSE MOUNTINGS OR CONNECTIONS	70
F45	STRIP ELECTRICAL WIRES	70
F20	CONDUCT PERIODIC MAINTENANCE INSPECTIONS	68
J16	ISOLATE MALFUNCTIONS ON HANDSETS, HEADSETS, OR MICROPHONES	68
M47	ISOLATE MALFUNCTIONS USING SCHEMATICS OR WIRING DIAGRAMS	67
G6	DOCUMENT DISCREPANCIES OF SIMULATOR PERFORMANCES	67
055	REMOVE OR INSTALL INDICATOR LIGHTS OR PANEL LIGHTS	67
F17	CLEAN SOLDERING IRONS	67

TABLE 9

REPRESENTATIVE TASKS PERFORMED BY DAFSC 34134 PERSONNEL
(N=29)

TASKS		PERCENT MEMBERS PERFORMING
F19	CLEAN UP SHOPS	93
F46	TEST ELECTRONIC COMPONENTS SUCH AS DIODES, TRANSISTORS, CAPACITORS, OR RESISTORS	86
F17	CLEAN SOLDERING IRONS	83
F45	STRIP ELECTRICAL WIRES	79
O55	REMOVE OR INSTALL INDICATOR LIGHTS OR PANEL LIGHTS	76
G40	OPERATE DIGITAL COMPUTER CONTROL PANELS	76
E11	MAKE ENTRIES ON SIMULATOR MAINTENANCE FORMS SUCH AS AFTO FORMS 349, 350, 359, 781 OR 781A	72
G41	OPERATE DIGITAL COMPUTER SYSTEMS	72
G101	OPERATE TELETYPEWRITERS	72
M47	ISOLATE MALFUNCTIONS USING SCHEMATICS OR WIRING DIAGRAMS	69
O56	REMOVE OR INSTALL INDICATORS	69
F9	CLEAN HAND TOOLS OR SHOP EQUIPMENT	66
F37	PHYSICALLY CHECK FOR LOOSE MOUNTINGS OR CONNECTIONS	66
F50	VISUALLY INSPECT ELECTRICAL SYSTEMS	66
F58	VISUALLY INSPECT VOLTAGE LEVELS, FREQUENCY VARIATIONS, OR CURRENT	66
O57	REMOVE OR INSTALL INSTRUMENT KNOBS	66

TABLE 10

REPRESENTATIVE TASKS PERFORMED BY DAFSC 34154 PERSONNEL
(N=232)

TASKS		PERCENT MEMBERS PERFORMING
F19	CLEAN UP SHOPS	93
F46	TEST ELECTRONIC COMPONENTS SUCH AS DIODES, TRANSISTORS, CAPACITORS, OR RESISTORS	88
F50	VISUALLY INSPECT ELECTRICAL SYSTEMS	85
F54	VISUALLY INSPECT POWER SUPPLY SYSTEMS	85
F45	STRIP ELECTRICAL WIRES	84
O56	REMOVE OR INSTALL INDICATORS	84
E11	MAKE ENTRIES ON SIMULATOR MAINTENANCE FORMS SUCH AS AFTO FORMS 349, 350, 359, 781 OR 781A	83
G40	OPERATE DIGITAL COMPUTER CONTROL PANELS	83
F52	VISUALLY INSPECT HYDRAULIC SYSTEMS	82
F60	VISUALLY INSPECT WIRE HARNESSES, CABLES, OR CONNECTOR PLUGS	82
G41	OPERATE DIGITAL COMPUTER SYSTEMS	81
G12	LOAD DIGITAL COMPUTER PROGRAMS	81
F58	VISUALLY INSPECT VOLTAGE LEVELS, FREQUENCY VARIATIONS, OR CURRENT	81
F37	PHYSICALLY CHECK FOR LOOSE MOUNTINGS OR CONNECTIONS	81

TABLE 11

REPRESENTATIVE TASKS PERFORMED BY DAFSC 34174 PERSONNEL
(N=154)

	TASKS	PERCENT MEMBERS PERFORMING
E11	MAKE ENTRIES ON SIMULATOR MAINTENANCE FORMS SUCH AS AFTO FORMS 349, 350, 359, 781 OR 781A	74
E18	RESEARCH OR REQUISITION SUPPLY STOCK NUMBERS OR PARTS	70
C37	PRE APRS	69
D10	DEMONSTRATE HOW TO LOCATE TECHNICAL INFORMATION	69
B8	COUNSEL PERSONNEL ON PERSONAL OR MILITARY RELATED PROBLEMS	68
D17	MAINTAIN OJT RECORDS	67
E3	IDENTIFY SIMULATOR PARTS	66
D11	DEMONSTRATE OPERATION OF EQUIPMENT	66
B59	SUPERVISE DIGITAL FLIGHT SIMULATOR SPECIALISTS (AFSC 34154)	64
A15	MONITOR OR CERTIFY PREPARATION OF RECORDS OR REPORTS	62
A3	ASSIGN WORK PRIORITIES	62
B16	DIRECT SHOP HOUSEKEEPING	62
G40	OPERATE DIGITAL COMPUTER CONTROL PANELS	61
B6	CONDUCT TOURS THROUGH TRAINER FACILITIES	60
D15	EVALUATE PROGRESS OF TRAINEES	60
D9	COUNSEL TRAINEES ON TRAINING PROGRESS	60

TABLE 12

TASKS WHICH BEST DIFFERENTIATE BETWEEN DAFSC 34154 AND 34174 PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS		DAFSC 34154	DAFSC 34174	DIFFERENCE
F19	CLEAN UP SHOPS	93	53	+40
F45	STRIP ELECTRICAL WIRES	84	47	+37
056	REMOVE OR INSTALL INDICATORS	84	49	+35
F48	VACUUM EQUIPMENT	66	32	+34
F6	CLEAN AIR FILTERS	78	44	+34
F9	CLEAN HAND TOOLS OR SHOP EQUIPMENT	78	45	+33
F17	CLEAN SOLDERING IRONS	79	46	+33
C37	PREPARE APRs	10	69	-59
D17	MAINTAIN OJT RECORDS	15	67	-52
B8	COUNSEL PERSONNEL ON PERSONAL OR MILITARY RELATED PROBLEMS	19	68	-49
A15	MONITOR OR CERTIFY PREPARATION OF RECORDS OR REPORTS	15	62	-47
B59	SUPERVISE DIGITAL FLIGHT SIMULATOR SPECIALISTS (AFSC 34154)	21	64	-43
D9	COUNSEL TRAINEES ON TRAINING PROGRESS	17	60	-43
A3	ASSIGN WORK PRIORITIES	20	62	-42
A29	SCHEDULE WORK ASSIGNMENTS	13	55	-42

TABLE 13

MAJOR EQUIPMENT OPERATED AND MAINTAINED BY FIVE PERCENT OR MORE OF 341X4 PERSONNEL

SIMULATORS	PERCENT OPERATING	PERCENT MAINTAINING
NONE	22	14
B-52G	4	5
C-5A	13	11
C-141	21	21
F-4E	19	19
FB-111/A	5	7

COMPUTERS	PERCENT OPERATING OR MAINTAINING
ADAGE	5
CONTROL DATA 924	7
GP-4	5
GP-4B	32
HARRIS 6024/4	6
HARRIS 6024/5	5
RAYTHEON COMMERCIAL DIGITAL 703	10
SEL 840-A	17
SEL 840-A-MC	6
SEL 840-MP	13
SIGMA 5 COMMERCIAL	9
TEXAS INSTRUMENTS 980B	12
OTHER	7

ANALYSIS OF AFMS GROUPS

An analysis was also conducted comparing job differences among individuals grouped by time in service. Very similar conclusions to those for DAFSC groups were noted.

Table 14 reflects the relative percent of time spent on duties by AFS 341X4 personnel grouped by enlistment period. Throughout all enlistment periods, airmen tend to move into positions of greater supervisory and management responsibility as they gain time in service. The longer time individuals have in service, the less time they spend performing technical tasks and duties. However, it is not until the 20 year service point that a group is identified in which the members spend more of their time on supervisory functions than on technical duties. Even then, members of this group still spend 26 percent of their time in the technical area. Therefore, regardless of experience level, AFS 341X4 personnel typically function as technicians, or at best supervisor technicians, throughout their Air Force career.

In looking at the jobs performed by first enlistment airmen (1-48 months AFMS), it was found that 115 of the 1144 inventory tasks were performed by 50 percent or more of this group. The average number of tasks performed by the group is 205, which illustrates the high degree of homogeneity of the first job within this career ladder. Representative tasks for this group are displayed in Table 15.

TABLE 14

PERCENT TIME SPENT ON DUTIES BY 341X4 AFMS GROUPS

DUTY	MONTHS TOTAL ACTIVE FEDERAL MILITARY SERVICE 1-48 (N=127)	49-96 (N=107)	97-144 (N=77)	145-192 (N=49)	193-240 (N=38)	241+ (N=17)
SUPERVISORY AND MANAGEMENT FUNCTIONS						
A ORGANIZING AND PLANNING	*	1	3	8	10	13
B DIRECTING AND IMPLEMENTING	1	3	7	13	16	28
C INSPECTING AND EVALUATING	1	2	6	14	12	17
D TRAINING	1	2	5	6	7	8
ADMINISTRATIVE FUNCTIONS						
E WORKING WITH FORMS, RECORDS, REPORTS, DIRECTIVES, OR TECHNICAL DATA	3	4	6	6	7	8
TECHNICAL FUNCTIONS						
F PERFORMING PREVENTIVE MAINTENANCE	16	13	10	7	7	6
G OPERATING TRAINING DEVICES	22	17	15	11	7	4
H OPERATING MISSILE PROCEDURES TRAINERS	*	*	*	*	*	*
I ISOLATE MALFUNCTIONS ON COMPUTERS AND PERIPHERAL EQUIPMENT	3	4	4	3	3	1
J ISOLATE MALFUNCTIONS ON SIMULATOR SYSTEMS AND PERIPHERAL EQUIPMENT	5	5	4	2	3	2
K ISOLATE MALFUNCTIONS ON SIMULATOR SYSTEMS WITH ANALOG COMPUTERS	1	*	*	*	*	*
L ISOLATE MALFUNCTIONS ON SIMULATOR SYSTEMS WITH DIGITAL COMPUTERS	4	5	4	3	3	1
M ISOLATE MALFUNCTIONS ON SIMULATOR ANC COMPUTER COMPONENTS	7	8	8	6	5	2
N ISOLATE MALFUNCTIONS ON MISSILE PROCEDURE	*	*	*	-	*	*
O REMOVING OR REPLACING COMPONENTS OR SYSTEM UNITS	15	15	11	6	8	3
P ALIGNING AND ADJUSTING SIMULATOR SYSTEMS OR COMPONENTS	7	8	6	5	5	2
Q PERFORMING IN-SHOP MAINTENANCE	5	5	4	4	3	2
R PERFORMING INSTRUMENT TRAINER INSTRUCTION FUNCTIONS	2	2	1	1	*	1
S MAINTAINING MOBILE AIRCREW TRAINING DEVICES	*	*	*	-	*	*
T PERFORMING OPERATIONAL CHECKS	5	4	4	3	3	1
U MAINTAINING MISCELLANEOUS EQUIPMENT	2	2	2	2	1	1

* INDICATES LESS THAN ONE PERCENT

TABLE 15

REPRESENTATIVE TASKS PERFORMED BY 341X4 PERSONNEL WITH 1-48 MONTHS TAFMS
(N=127)

	TASKS	PERCENT MEMBERS PERFORMING
F19	CLEAN UP SHOPS	97
F46	TEST ELECTRONIC COMPONENTS SUCH AS DIODES, TRANSISTORS, CAPACITORS, OR RESISTORS	92
F45	STRIP ELECTRICAL WIRES	86
O56	REMOVE OR INSTALL INDICATORS	84
F17	CLEAN SOLDERING IRONS	83
F50	VISUALLY INSPECT ELECTRICAL SYSTEMS	83
F51	VISUALLY INSPECT ELECTRO-MECHANICAL DEVICES	82
F54	VISUALLY INSPECT POWER SUPPLY SYSTEMS	82
E11	MAKE ENTRIES ON SIMULATOR MAINTENANCE FORMS SUCH AS AFTO FORMS 349, 350, 359, 781 OR 781A	81
G12	LOAD DIGITAL COMPUTER PROGRAMS	81
G40	OPERATE DIGITAL COMPUTER CONTROL PANELS	81
F20	CONDUCT PERIODIC MAINTENANCE INSPECTIONS	80
O55	REMOVE OR INSTALL INDICATOR LIGHTS OR PANEL LIGHTS	80
G41	OPERATE DIGITAL COMPUTER SYSTEMS	80
F37	PHYSICALLY CHECK FOR LOOSE MOUNTINGS OR CONNECTIONS	80

ANALYSIS OF CONUS/OVERSEAS DIFFERENCES

A comparison of tasks performed by 5-skill level incumbents assigned within the CONUS and those assigned overseas was made for the AFS 341X4 career ladder. There were major differences noted in the number and types of tasks performed between these two groups.

Averaging 256 tasks performed, 5-skill level personnel overseas were performing jobs more varied than their counterparts assigned to the CONUS who averaged 225 tasks performed. Some of the difference may be accounted for by experience, as the overseas group averaged 68 months in the career ladder as opposed to 34 months for the CONUS group. However, many of the differentiating tasks relate to the operation and maintenance of digital navigation/tactics training devices. It appears that DAFSC 34154 personnel overseas perform some tasks that are the responsibility of DAFSC 341X6, Digital Navigation/Tactics Training Devices, career ladder personnel. Examples of these tasks are listed in Table 16. As illustrated, AFS 34154 CONUS personnel are also performing these tasks but in fewer numbers. In addition, DAFSC 34154 personnel overseas also spend slightly more time operating training devices (See Table 17). They are apparently responsible for operating digital navigation/tactics training devices as well as their own flight simulator systems.

TABLE 16

TASKS WHICH BEST DIFFERENTIATE BETWEEN DAFSC 34154 CONUS AND OVERSEAS PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS		CONUS (N=207)	OVERSEAS (N=26)	DIFFERENCE
G125	SET UP GROUND TARGETS	28	85	-57
G8	INSERT AIR-TO-AIR INTERCEPTS	35	88	-53
G10	INSERT SIMULATED ELECTRONIC COUNTER MEASURES (ECMs)	36	85	-49
J1	ISOLATE MALFUNCTIONS ON CANOPY ACTUATING MECHANISMS	33	81	-48
O91	REMOVE OR INSTALL RADAR SCOPES	30	77	-47
L6	ISOLATE MALFUNCTIONS ON ATTACK RADAR SYSTEMS	23	69	-46
L21	ISOLATE MALFUNCTIONS ON INERTIAL NAVIGATION SYSTEMS	31	73	-42
G9	INSERT MALFUNCTIONS OR EMERGENCIES INTO SYSTEMS	52	92	-40
U1	CONSTRUCT SHELVES, CARTS, WORK BENCHES OR TOOL RACKS	34	73	-39
G60	OPERATE INERTIAL NAVIGATION SYSTEMS	35	73	-38
U2	CONSTRUCT SIGNS	32	69	-37
G24	OPERATE ATTACK RADARS	25	62	-37
G82	OPERATE RADAR WARNING RECEIVER (RWR) ECM SYSTEMS SUCH AS RADAR HOMING AND WARNING SYSTEMS (RHAWS)	33	69	-36
O117	REMOVE OR INSTALL WINDSHIELDS OR CANOPIES	23	58	-35
L36	ISOLATE MALFUNCTIONS ON RWR ECM SYSTEMS SUCH AS RHAWS OR TEWS	27	62	-35
P63	ADJUST MICRO SWITCHES	43	77	-34
G68	OPERATE LINE PRINTER UNITS	31	--	+31
M13	ISOLATE MALFUNCTIONS ON CIRCUIT CARD TESTERS	58	31	+27

TABLE 17

PERCENT TIME SPENT BY DAFSC 34154 CONUS AND OVERSEAS GROUPS

	DUTIES	DAFSC 34154 ASSIGNED CONUS (N=207)	DAFSC 34154 ASSIGNED OVERSEAS (N=26)
	SUPERVISORY AND MANAGEMENT FUNCTIONS		
A	ORGANIZING AND PLANNING	1	1
B	DIRECTING AND IMPLEMENTING	3	3
C	INSPECTING AND EVALUATING	2	1
D	TRAINING	3	1
	ADMINISTRATIVE FUNCTIONS		
E	WORKING WITH FORMS, RECORDS, REPORTS, DIRECTIVES, OR TECHNICAL DATA	3	4
	TECHNICAL FUNCTIONS		
F	PERFORMING PREVENTIVE MAINTENANCE	14	13
G	OPERATING TRAINING DEVICES	19	21
H	OPERATING MISSILE PROCEDURES TRAINERS	*	*
I	ISOLATE MALFUNCTIONS ON COMPUTERS AND PERIPHERAL EQUIPMENT	3	4
J	ISOLATE MALFUNCTIONS ON SIMULATOR SYSTEMS AND PERIPHERAL EQUIPMENT	5	6
K	ISOLATE MALFUNCTIONS ON SIMULATOR SYSTEMS WITH ANALOG COMPUTERS	*	*
L	ISOLATE MALFUNCTIONS ON SIMULATOR SYSTEMS WITH DIGITAL COMPUTERS	4	5
M	ISOLATE MALFUNCTIONS ON SIMULATOR AND COMPUTER COMPONENTS	8	6
N	ISOLATE MALFUNCTIONS ON MISSILE PROCEDURE TRAINERS	*	*
O	REMOVING OR REPLACING COMPONENTS OR SYSTEM UNITS	14	14
P	ALIGNING AND ADJUSTING SIMULATOR SYSTEMS OR COMPONENTS	7	7
Q	PERFORMING IN-SHOP MAINTENANCE	5	5
R	PERFORMING INSTRUMENT TRAINER INSTRUCTION FUNCTIONS	2	1
S	MAINTAINING MOBILE AIRCREW TRAINING DEVICES	*	*
T	PERFORMING OPERATIONAL CHECKS	5	5
U	MAINTAINING MISCELLANEOUS EQUIPMENT	2	3

* INDICATES LESS THAN ONE PERCENT

ANALYSIS OF TASK DIFFICULTY

From the listing of airmen identified to receive the occupational survey inventory, incumbents from various commands and locations who held a 7- or 9-skill level DAFSC and PAFSC were identified to also receive a task difficulty booklet. This booklet contained only the duty/task list section of the original occupational survey inventory. The survey respondent was instructed to rate all of the tasks on a nine-point scale from extremely low to extremely high, with difficulty being defined as the length of time it requires an average incumbent to learn to do the task. Interrater agreement (as assessed through components of variance of standardized group means) among the 56 raters who returned booklets was .96. Ratings were adjusted so that tasks of average difficulty have ratings of 5.00.

Of the 1,144 tasks in the job inventory, 603 were rated above average in difficulty. Tasks shown in Table 18 are representative of the more difficult tasks performed by Digital Flight Simulator personnel. All of these are technical in nature and cover a variety of different maintenance functions, most prominently, operating training devices, malfunction isolation on simulator and computer components, and malfunction isolation on simulator systems and peripheral equipment. All of these tasks were also performed by high percentages of first enlistment airmen. This indicates that first enlistment airmen are actively involved in performing the more difficult job associated with this career ladder and not relegated to performing strictly routine tasks.

Tasks rated below average in difficulty, which were performed by AFS 341X4 respondents are illustrated by the tasks shown in Table 19. Concentrated in the duties of performing preventive maintenance and removing or replacing components, these tasks are typical of the common core of tasks for this career ladder. As in the case of the higher difficulty tasks, these 72 tasks are performed by 50 percent or more of first enlistment airmen, and usually by greater percentages than for the total sample. Since the tasks are relatively routine in nature, and of the type not requiring a great deal of experience, this is to be expected.

Job Difficulty Index (JDI)

Having computed the task difficulty index for each inventory item, it was then possible to compute a Job Difficulty Index (JDI) for any group identified in the survey analysis. The index provides a relative measure of which jobs, when compared to other jobs identified in the analysis, are more or less difficult. The JDI is based on an equation using number of tasks performed and the average difficulty per unit time spent. The indices are then adjusted so that the average job difficulty index is 13.00. The JDI was computed for the major job groups identified in the specialty structure, and this information is presented in Table 20.

TABLE 18

REPRESENTATIVE TASKS RATED ABOVE AVERAGE IN DIFFICULTY WHICH ARE PERFORMED BY DAFSC 341X4 RESPONDENTS

TASKS		DIFFICULTY INDEX	PERCENT TOTAL SAMPLE PERFORMING	PERCENT FIRST ENLISTMENT MEMBERS PERFORMING
M47	ISOLATE MALFUNCTIONS USING SCHEMATICS OR WIRING DIAGRAMS	6.03	68	76
M21	ISOLATE MALFUNCTIONS ON DIGITAL-TO-ANALOG CONVERTERS	5.94	59	61
G41	REMOVE OR REPLACE DESICCANTS	5.78	70	80
T21	TEST OPERATE SIMULATORS TO ISOLATE MALFUNCTIONS	5.70	60	65
I38	ISOLATE MALFUNCTIONS ON POWER SUPPLIES	5.67	56	60
M38	ISOLATE MALFUNCTIONS ON PRINTED OR ELECTRONIC CIRCUIT CARDS	5.63	60	63
J45	ISOLATE SIMULATOR MALFUNCTIONS BY INSTRUMENT READINGS	5.48	59	62
G39	OPERATE DIAGNOSTIC TEST PROGRAMS ON SIMULATORS WHICH USE DIGITAL COMPUTERS	5.44	57	63
M25	ISOLATE MALFUNCTIONS ON DISCRETE SWITCH INPUTS	5.43	63	68
G40	OPERATE DIGITAL COMPUTER CONTROL PANELS	5.38	74	81
M26	ISOLATE MALFUNCTIONS ON DISCRETE SWITCH OUTPUTS	5.37	62	68
J46	ISOLATE SIMULATOR MALFUNCTIONS USING CONSOLE READOUTS	5.36	58	65
J5	ISOLATE MALFUNCTIONS ON ELECTRICAL SYSTEMS	5.36	57	63
G63	OPERATE INSTRUCTOR CONSOLES	5.21	55	59
F47	TEST ELECTRO-MECHANICAL COMPONENTS SUCH AS SYNCHROS, RESOLVERS, POTENTIOMETERS, OR TRANSFORMERS	5.19	59	64
T8	OPERATIONALLY CHECK SIMULATOR SYSTEMS	5.19	63	68
J22	ISOLATE MALFUNCTIONS ON INDICATOR SYSTEMS	5.12	60	65
Q61	SOLDER INTEGRATED CIRCUITS	5.12	63	65
L19	ISOLATE MALFUNCTIONS ON HYDRAULIC SYSTEMS	5.10	57	60
Q62	SOLDER TRANSISTORIZED CIRCUITS	5.01	65	69

TABLE 19

REPRESENTATIVE TASKS RATED BELOW AVERAGE IN DIFFICULTY WHICH ARE PERFORMED BY DAFSC 341X4 RESPONDENTS

TASKS		DIFFICULTY INDEX	PERCENT TOTAL SAMPLE PERFORMING	PERCENT FIRST ENLISTMENT MEMBERS PERFORMIN
G12	LOAD DIGITAL COMPUTER PROGRAMS	4.82	72	81
M15	ISOLATE MALFUNCTIONS ON COCKPIT INSTRUMENTS OR INDICATORS	4.65	66	74
F20	CONDUCT PERIODIC MAINTENANCE INSPECTIONS	4.64	68	80
0104	REMOVE OR INSTALL SOLDERED COMPONENTS SUCH AS TRANSISTORS, RESISTORS OR CAPACITORS	4.62	65	75
F46	TEST ELECTRONIC COMPONENTS SUCH AS DIODES, TRANSISTORS, CAPACITORS, OR RESISTORS	4.61	76	92
E11	MAKE ENTRIES ON SIMULATOR MAINTENANCE FORMS SUCH AS AFTO FORMS 349, 350, 359, 781 OR 781A	4.26	79	81
J16	ISOLATE MALFUNCTIONS ON HANDSETS, HEADSETS, OR MICROPHONES	4.00	68	78
F58	VISUALLY INSPECT VOLTAGE LEVELS, FREQUENCY VARIATIONS, OR CURRENT	3.82	70	82
G6	DOCUMENT DISCREPANCIES OF SIMULATOR PERFORMANCES	3.81	67	73
	REMOVE OR INSTALL POWER SUPPLIES	3.78	66	72
F54	VISUALLY INSPECT POWER SUPPLY SYSTEMS	3.59	73	82
F52	VISUALLY INSPECT HYDRAULIC SYSTEMS	3.48	70	77
F50	VISUALLY INSPECT ELECTRICAL SYSTEMS	3.40	74	83
F37	PHYSICALLY CHECK FOR LOOSE MOUNTINGS OR CONNECTIONS	3.39	70	80
F60	VISUALLY INSPECT WIRE HARNESSES, CABLES OR CONNECTOR PLUGS	3.39	70	78
056	REMOVE OR INSTALL INDICATORS	3.03	70	84
055	REMOVE OR INSTALL INDICATOR LIGHTS OR PANEL LIGHTS	2.71	67	80
F17	CLEAN SOLDERING IRONS	2.21	67	84
057	REMOVE OR INSTALL INSTRUMENT KNOBS	2.10	66	78
F45	STRIP ELECTRICAL WIRES	2.08	70	86
59	CLEAN HAND TOOLS OR SHOP EQUIPMENT	2.04	65	77
F19	CLEAN UP SHOPS	1.95	78	97

TABLE 20

JOB DIFFICULTY INDICES FOR SPECIALTY JOB GROUPS

GROUPS	JOB DIFFICULTY INDEX *
FLIGHT/MISSION SIMULATOR SUPERVISORS AND MANAGERS	9.6
DIGITAL FLIGHT SIMULATOR OPERATOR MAINTAINERS	15.9
B-52 COCKPIT PROCEDURES TRAINER OPERATOR MAINTAINERS	11.2
DIGITAL FLIGHT SIMULATOR SHIFT SUPERVISORS	15.9
FIGHTER AIRCRAFT DIGITAL FLIGHT SIMULATOR OPERATOR MAINTAINERS	10.9
MINOR MAINTENANCE AND OPERATION PERSONNEL	7.4
SOFTWARE AND SIMULATOR DEVELOPMENT TECHNICIANS	15.0
TRAINING INSTRUCTORS AND LIMITED PERFORMANCE PERSONNEL	5.0

* AVERAGE DIFFICULTY - 13.0

COMPARISON OF AFR 39-1 SPECIALTY DESCRIPTIONS WITH SURVEY DATA

The AFR 39-1 specialty descriptions for AFSCs 34141. 34154 and 34174 were compared against the survey data. Both specialty descriptions appear to be complete, and accurately portray the duties and responsibilities of the personnel in this career ladder. All the duties and responsibilities mentioned in the specialty descriptions could be matched to tasks in the job inventory, and sufficient numbers of survey respondents were found performing those functions to warrant their inclusion in the descriptions.

A discussion concerning the commonalities of the job descriptions for all the ladders in the Training Devices career field is included in the Career Field Addendum to this report.

COMPARISON OF THE SPECIALTY TRAINING STANDARD (STS) WITH SURVEY RESULTS

A review of the current STS 341X4, dated November 1977, was made for the 3-, 5-, and 7-skill levels. Each of the STS subparagraphs containing task knowledge or performance requirements were compared to the survey results. Subparagraphs containing only general information or subject knowledge proficiency level requirements were not evaluated.

Overall the STS appears to be up to date and complete in providing general training requirements. The STS subparagraphs evaluated were supported by survey data. However, many subparagraphs were subject knowledge oriented making much of the STS difficult to compare to survey data. A comparison of specialty training standards across the career field is included in the Career Field Addendum attached to this report.

COMPARISON OF CURRENT SURVEY TO PREVIOUS SURVEY

A previous survey of this career ladder was conducted in March 1974. At that time both the AFS 342X0, Flight Simulator career ladder, and the AFS 343X0, Navigation/Bomb/Tactics Trainer career ladder, were surveyed in conjunction with one another and the results compared. Then in April 1976, upon the recommendation of the Mission Simulator Support Requirements Working Group held at Chanute AFB, Illinois in June 1974; the two career ladders were split, forming the AFS 341X3, AFS 341X4, AFS 341X5, and 341X6 career ladders. The AFSC split along analog and digital simulator systems has, therefore, made it very difficult to compare each of the current individual career ladders with the results of the previous survey. Thus, a comparison of the results of all four of these career ladders has been made to the results of the previous survey and is included in the Career Field Addendum.

SUMMARY OF BACKGROUND INFORMATION

Assignment to Career Ladder

Sixty-seven percent of the AFS 341X4 survey respondents indicated they were initially assigned to the career ladder after completing resident technical training. Another 23 percent were retrainees who attended resident technical training and four percent entered the career ladder through conversion from another Air Force specialty without training. Two percent indicated that they entered the career ladder by other than normal classification methods.

Relative Job Satisfaction

Table 21 displays the various percentages by AFMS groups of the responses to questions regarding job interest and perceived utilization of talents and training. In order to provide a better understanding of these figures, comparisons with individuals in mission equipment maintenance AFSCs surveyed in 1977 are also included by AFMS groups. These comparative AFSCs include such specialties as communications electronics systems, avionics systems, missile maintenance and aircraft maintenance.

Ninety percent of AFS 341X4 first enlistment respondents found their job interesting. This is considerably higher than the 62 percent average reported for this enlistment group in the 1977 comparative studies. Their perceived utilization of talents and training are also well above those reported by first enlistment personnel in the comparative sample.

The second enlistment personnel also display higher job interest and perceived utilization of talents and training than their 1977 comparative counterparts. It is interesting to note however, that while their perceived utilization of talents and training is higher than the percentages for first enlistment personnel in this survey, the job interest level is lower.

Career airmen in this AFS display a wide variance in their perceptions of job satisfaction. While their perception of how their training is being utilized is the highest in the survey sample, their job interest level is the lowest. It is rare to find first enlistment personnel with a job interest level higher than that of career airmen in the same specialty. At the same time, while their utilization of training is above that of the 1977 comparative figures, their utilization of talents responses are below those of their contemporaries surveyed last year.

Reenlistment Intentions

The expressed intentions toward reenlistment by AFS 341X4 survey respondents are displayed in Table 22. First enlistment respondents showed an intention to reenlist at a much higher percentage rate than first enlistment airmen in the comparative sample. Second enlistment personnel and career airmen also indicated a higher intention to reenlist than their comparative groups.

TABLE 21

EXPRESSION OF JOB INTEREST AND PERCEIVED UTILIZATION OF TALENTS AND TRAINING
BY 341X4 TAFMS GROUPS
(PERCENT RESPONDING)

	1-48 MONTHS TAFMS		49-96 MONTHS TAFMS		97+ MONTHS TAFMS	
	341X4	COMPARATIVE AFSCs*	341X4	COMPARATIVE AFSCs*	341X4	COMPARATIVE AFSCs*
I FIND MY JOB						
NO REPLY	-	-	-	-	1	-
EXTREMELY DULL TO FAIRLY DULL	6	17	9	12	11	9
SO-SO	4	21	7	16	7	11
FAIRLY INTERESTING TO EXTREMELY INTERESTING	90	62	84	72	81	80
MY JOB UTILIZES MY TALENTS						
NO REPLY	1	-	-	-	1	-
NOT AT ALL OR VERY LITTLE	19	32	15	21	16	14
FAIRLY WELL TO VERY WELL	72	64	76	71	62	68
EXCELLENTLY TO PERFECTLY	8	4	9	8	21	18
MY JOB UTILIZES MY TRAINING						
NO REPLY	-	-	-	-	1	-
NOT AT ALL OR VERY LITTLE	20	26	16	22	15	18
FAIRLY WELL TO VERY WELL	73	67	74	68	66	63
EXCELLENTLY TO PERFECTLY	7	7	10	10	18	19

* BASED ON A SUMMARY OF OVER 21,800 RESPONSES FROM MISSION EQUIPMENT MAINTENANCE AFSCs SURVEYED IN 1977.

IMPLICATIONS

In the analysis of the survey data, it was found that the Digital Flight Simulator specialty is composed of fairly homogeneous jobs which involve operating and maintaining digital flight simulators. However, as pointed out in the Career Field Addendum, there is a very high degree of commonality in the tasks performed by this career ladder's personnel and that of AFS 341X2, Defensive System Trainer personnel; AFS 341X3 Analog Flight Simulator personnel; AFS 341X5, Analog Navigation/ Tactics Training Devices personnel; and AFS 341X6 Digital Navigation/ Tactics Training Devices personnel. There certainly appears, based on the survey data, that fewer than five career ladders could be organized to operate and maintain these various trainer systems. This is especially true in light of the fact that analog trainers are gradually being phased out of the Air Force inventory and replaced with the more advanced digital trainers. In addition, as reported in the CONUS/ Overseas analysis of 5-skill level personnel, airmen in this career ladder are already capable of performing many of the principle tasks and duties of AFS 341X6 personnel.

Solutions to problems facing this specialty as it expands with the modernization of the Air Force's training devices will not be arrived at easily, but career ladder managers should carefully consider the data presented in this report and the attached Career Field Addendum when planning the future of the Digital Flight Simulator career ladder.

TABLE 22

REENLISTMENT INTENTIONS OF AFS 341X4 PERSONNEL
(PERCENT RESPONDING)

REENLISTMENT INTENTIONS	FIRST ENLISTMENT	
	341X4	COMPARATIVE AFSCs*
NO REPLY	2	-
NO	28	34
UNCERTAIN, PROBABLY NO	23	27
UNCERTAIN, PROBABLY YES	32	26
YES	15	13

	SECOND ENLISTMENT	
	341X4	COMPARATIVE AFSCs*
NO REPLY	-	-
NO	21	17
UNCERTAIN, PROBABLY NO	23	18
UNCERTAIN, PROBABLY YES	41	33
YES	15	32

	CAREER	
	341X4	COMPARATIVE AFSCs*
NO REPLY	3	-
NO	12	20
UNCERTAIN, PROBABLY NO	10	8
UNCERTAIN, PROBABLY YES	17	16
YES	58	56

* BASED ON A SUMMARY OF OVER 21,600 RESPONDENTS FROM MISSION EQUIPMENT MAINTENANCE AFSCs SURVEYED IN 1977.

AFS 341XX

CAREER FIELD ADDENDUM

Atch 1

TABLE OF CONTENTS

SUMMARY OF RESULTS

1. Survey Coverage: Inventory booklets were administered to all 2,480 incumbents assigned to the Training Devices career field during the period December 1977 through April 1978. Survey results are based on responses from 1,886 airmen or 76 percent of the assigned career field population.

2. Career Field Structure: Four major groups of jobs were found within the career field. The operation and maintenance group contained 13 subgroups. These were differentiated by the number and kinds of tasks performed, the type of equipment maintained, and the percent of time spent performing various maintenance and supervisory duties. The remaining three groups were composed of personnel assigned as supervisors and managers, formal training personnel, and airmen performing primarily as instrument trainer instructors.

3. DAFSC Differences: Jobs performed by 3- and 5-skill level incumbents were fairly homogeneous. They consisted of tasks relating to performing preventive maintenance, operating training devices, and removing or replacing system components. However, 5-skill level airmen perform a higher average number of tasks than typical 3-skill level airmen. DAFSC 3417X personnel were less homogeneous due to the diversity of technical tasks performed. While functioning as supervisors, they still spend a majority of their time performing technical tasks and duties. DAFSC 34197 personnel are clearly the managers in this career field.

4. Similarities and Differences In Task Performance: There is a great deal of similarity among maintainers in all career ladders in the areas of operating training devices, performing preventive maintenance, and in performing general malfunction isolation procedures. There are also distinct differences between instrument trainer instructor operators and the other ladders; equipment maintainers. In addition, each ladder is different from the others in operation and maintenance of career ladder unique equipment.

5. AFR 39-1 Review: Specialty descriptions were found in general to be accurate depictions of career ladder duties and responsibilities. However, there is considerable commonality among these specialty descriptions, differentiated mainly through the highlighting of equipment unique to each ladder.

6. STS Review: The first 10 paragraphs of each STS in the career field are essentially the same. There is additional commonality in STS paragraphs among the career ladders responsible for operating and maintaining aircrew training devices.

CAREER FIELD ADDENDUM
TRAINING DEVICES CAREER FIELD
(AFSCs 341X1, 341X2, 341X3, 341X4, 341X5, 341X6, 341X7, AND 34192)

INTRODUCTION

The principle purpose of constructing a comprehensive job inventory for the Training Devices career field was to provide data in a format that would allow an in-depth analysis of similarities and differences across all the specialties within the career field. Such an analysis was performed and is contained in this addendum which is attached to each Training Devices career ladder Occupational Survey Report.

A great deal of Major Air Command and Air Staff interest exists concerning the collapse of career ladders within the Training Devices career field to create fewer, easier to manage, less expensive to train career specialties. This report is therefore designed to display the survey data in a manner that would facilitate personnel managers in making decisions concerning the future of the career field structure. This report will include: (1) the job structure found within the career field and the relation to skill level and experience level groups; (2) a discussion of the similarities and differences among career ladders; (3) background data relative to job satisfaction; and (4) an analysis of the DAFSC 34197 skill level personnel.

SURVEY SAMPLE

Personnel were selected to participate in this survey so as to insure a balanced representation across MAJCOM and DAFSC groups. A sufficient response was achieved from all career ladders in the Training Devices career field so that the desired comparisons could be made. Table 1 reflects the percentage distribution, by career ladder, of assigned personnel in the AFS 341XX career field as of March 1978, and the distribution of incumbents in the final survey sample. The 1,886 respondents making up the final sample represent 76 percent of the 2,480 members making up the total Training Devices career field. Thirty-two individuals (or 2 percent of the total sample) did not indicate their specific ladder and are shown only with the generic 341XX specialty code. This error rate is within acceptable limits and is not considered a serious problem for data analysis.

Table 2 reflects the distribution, by major command, of assigned personnel with DAFSC 34197 as of March 1978, as well as the distribution of incumbents in the final survey sample. The 102 respondents making up the final sample represent 61 percent of the 168 members assigned as Training Devices Superintendents.

TABLE 1

DISTRIBUTION OF CAREER FIELD SURVEY SAMPLE BY CAREER LADDER

CAREER LADDER		TOTAL ASSIGNED	TOTAL IN SAMPLE	PERCENT OF LADDER SAMPLE	PERCENT OF TOTAL SAMPLE
341X1	INSTRUMENT TRAINER	262	185	71%	10%
341X2	DEFENSIVE SYSTEM TRAINER	174	137	79%	7%
341X3	ANALOG FLIGHT SIMULATOR	596	483	81%	26%
341X4	DIGITAL FLIGHT SIMULATOR	531	415	78%	22%
341X5	ANALOG NAVIGATION/TACTICS TRAINING DEVICES	235	159	68%	8%
341X6	DIGITAL NAVIGATION/TACTICS TRAINING DEVICES	396	277	70%	15%
341X7	MISSILE TRAINER	118	96	85%	5%
34197	TRAINING DEVICES SUPERINTENDENT	168	102	61%	5%
341XX	(DAFSC NOT INDICATED)	___	32	___	2%
	TOTAL	2480	1886	76%	100%

TABLE 2

COMMAND REPRESENTATION IN THE SURVEY SAMPLE OF DAFSC 34197 PERSONNEL

COMMAND	PERCENT OF ASSIGNED	PERCENT OF SAMPLE
SAC	33	33
TAC	27	26
MAC	13	16
ATC	13	10
USAFE	5	7
PACAF	4	3
ADC	3	3
OTHER	2	2
TOTAL	100	100

TOTAL ASSIGNED - 168
TOTAL SAMPLED - 102
PERCENT OF SAMPLE - 61%

CAREER FIELD STRUCTURE

An analysis of the career field structure was conducted by using the Comprehensive Occupational Data Analysis Programs (CODAP), as described in the career ladder section in the main body of this report. In fact, the career ladder structures were extracted from the career field structure diagram with the exception of AFS 341X4 and AFS 341X6. Because of their high degree of task similarity, these specialties did not cluster independently, thus requiring separate cluster diagrams in order to perform complete career ladder analyses.

Based on task similarity and relative percent time spent, the most realistic division of the jobs performed in the 341XX career field is illustrated in Figure 1. These job clusters and job types are listed below. The GRP number shown beside each title is a reference to computer print out information included for use by classification and training officials.

I. Training Devices Operation and Maintenance Personnel (GRP017, N=1,453)

A. Senior Analog Training Devices Operator Maintainers (GRO393, N=309)

B. Defensive System - Analog Navigation/Tactics Training Devices Operator Maintainers (GRP391, N=122)

C. Digital Training Devices Operator Maintainers (GRP310, N=376)

D. Digital Training Devices Shift Supervisors (GRP251, N=25)

E. Analog Navigation/Tactics Training Devices Operator Maintainers (GRP232, N=30)

F. Missile Trainer Operator Maintainers (GRP216, N=73)

G. Instrument Trainer Operator Maintainers (GRP261, N=28)

H. Radar Landmass Systems Operator Maintainers (GRP156, N=16)

I. Training Devices Supervisory Operator Maintainers (GRP161, N=64)

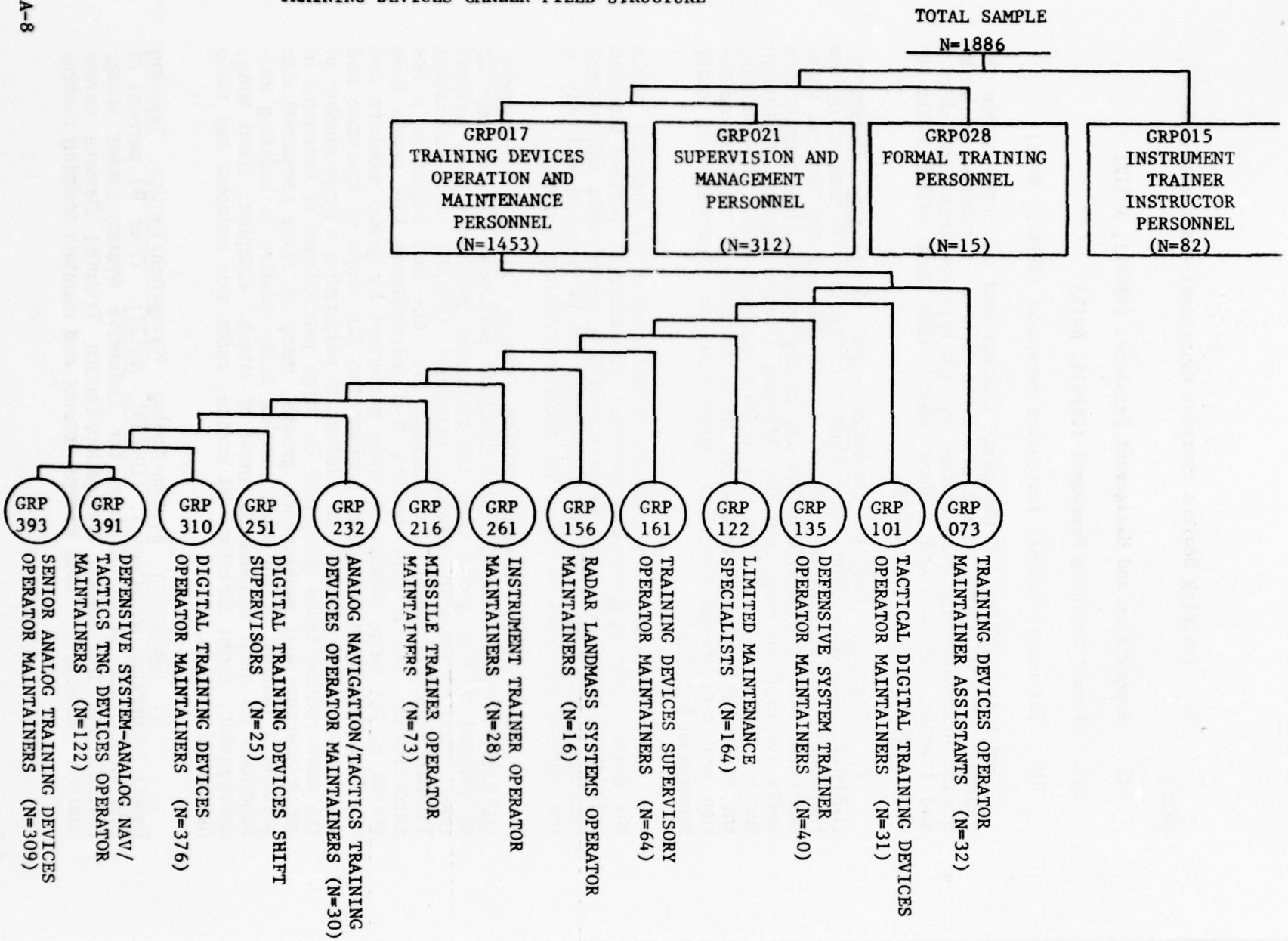
J. Limited Maintenance Personnel (GRP122, N=164)

K. Defensive System Trainer Operator Maintainers (GRP135, N=40)

L. Tactical Digital Training Devices Operator Maintainers (GRP101, N=31)

FIGURE 1

TRAINING DEVICES CAREER FIELD STRUCTURE



M. Training Devices Operator Maintainer Assistants (GRP073, N=32)

II. Supervision and Management Personnel (GRP021, N=312)

III. Formal Training Personnel (GRP028, N=15)

IV. Instrument Trainer Instructor Personnel (GRP015, N=82)

Brief descriptions for the major clusters and job types within the Training Devices Career Field are given below. Summaries of background information for each cluster and job type are shown in Tables 3 and 4 while, Tables 5 and 6 show relative time spent within duties for each cluster and job type group.

I. Training Devices Operation and Maintenance Personnel, (GRP017, N=1453). This large cluster containing 77 percent of the respondents to the Training Devices career field survey includes those personnel who are performing the day to day operation and maintenance tasks required to carry out the Training Devices mission. Although there are a number of first line NCOICs included within this cluster, the major job emphasis remains on the performance of technical operation and maintenance functions rather than on supervision or other managerial functions.

Ninety percent of the members of this cluster are included within the thirteen job type groups reported. The other 10 percent included individuals whose jobs were so unique in task performance and percent time spent on those tasks that they could not be grouped with any of the existing job types or into other separate meaningful groups.

A. Senior Analog Training Devices Operator Maintainers, (GRP393, N=309). Analog Flight Simulator personnel (341X3) make up 82 percent of this group while the remainder includes Analog Navigation/ Tactics Training Devices personnel (341X5) and Instrument Trainer personnel (341X1). Although over one half supervise a few subordinates, the primary feature that discriminates this group from others is the large number of tasks performed by group members and the fact that these personnel perform the full scope of operation and maintenance. For example, in addition to performing a large number of the more routine tasks performed by large percentages of personnel in other operator and maintenance groups, many of these personnel also perform a number of the more complex tasks relative to isolating malfunctions on such systems as angle of attack, autopilot, fixed wing, aerodynamic, flight director, jet engine, radio aids consoles and radio navigation systems.

B. Defensive System-Analog Navigation/Tactics Training Devices Operator Maintainers, (GRP391, N=122). Over 90 percent of this group are personnel from the Defensive System career ladder (341X2) and the Analog Navigation/Tactics Training Devices career ladders. Members of both groups operate and maintain training devices

which involve similar principles of operation. While this group performs many of the same general operator and maintenance tasks as many of the other groups, these personnel tend to be more involved in maintenance of T1, T4 and T10 trainers. Some of the tasks which are relatively exclusive to this group include isolation of malfunctions on doppler systems, timing systems, radio navigation systems, comparators, and composite video signals. In addition, approximately one third of this group adjust multi-channel tape recorders, phasing, radar display units, T-10 terrain data signal generators and target intensity. These tasks were performed by very few of the members of other groups in the career field structure analysis.

C. Digital Training Devices Operator Maintainers, (GRP310, N=376). This relatively large group contains personnel who operate and maintain digital training devices. Sixty percent are from the Digital Flight Simulator career ladder (341X4) while 35 percent are from the Digital Navigation/Tactics Training Devices career ladder (341X6). Although a few of these individuals serve as shift chiefs and perform a number of first level supervisory tasks, the primary purpose of personnel in this group is to accomplish the day-to-day operation and maintenance of digital training devices.

Within this job type there appeared to be no real differences between the jobs performed by AFS 341X4 personnel and AFS 341X6 personnel. In fact, a review of the grouping process indicates that 341X4 and 341X6 personnel within the same organizations perform essentially the same jobs.

D. Digital Training Devices Shift Supervisors, (GRP251, N=25). This small group, like the preceding group is composed primarily of 341X4 and 341X6 personnel. Again, there appears to be no specific grouping by ladder. These personnel, perform somewhat fewer tasks than the preceding group and in addition spend considerably more time on supervisory functions. Characteristically members of this group are 7-skill level and call themselves Shift Chiefs but spend a majority of their time on the technical operation and maintenance tasks.

E. Analog Navigation/Tactics Training Devices Operator Maintainers (GRP232, N=30). Members of this group are primarily Analog Navigation/Tactics Training Devices personnel (341X5) and are engaged in operation and maintenance of analog navigation/tactics training devices for T-10, C-5A or C-141 trainers. A small percentage also operate or maintain navigation/tactics training devices for B-52 simulators. Although forty percent of these personnel supervise and many work as section chiefs or shift supervisors, their primary functions are the operation and maintenance of training devices.

Members of this group perform fewer tasks than those of proceeding groups. Most of these tasks are the normal routine functions common to other groups. However, a few unique tasks were performed by substantial percentages of these personnel. These included the operation of closed circuit T.V. systems and digital readout units

(DROS), the isolation of malfunctions and removal or installation of parts of closed circuit simulators or visual attachments, and the operation of digital computers and control panels.

F. Missile Trainer Operator Maintainers (GRP216, N=73). Seventy-one members (97 percent) of this group are missile trainer personnel (341X7). These individuals perform a large number of tasks including many of those general operation and maintenance tasks common to most personnel in this career field. In addition, they perform those tasks unique to missile trainers including the duties of operating missile procedures trainers and the isolation of malfunctions on missile procedures trainers. A more detailed discussion of this group can be found in the Career Ladder Structure section of the Missile Trainer Career Ladder Occupational Survey Report, AFS 341X7, under the Missile Procedures Trainer Maintainers Group (SPL750).

G. Instrument Trainer Operator Maintainers (GRP261, N=28) The 28 members of this group are all members of the Instrument Trainer career ladder, 341X1. These personnel spend approximately 38 percent of their time performing instrument trainer instructor and operation tasks. In addition, 47 percent of their time is spent maintaining the instrument trainer and associated equipment. Although this group is primarily concerned with the performance of technical tasks, slightly over one third also serve as supervisors of small units or as shift chiefs.

H. Radar Landmass Systems Operator Maintainers (GRP156, N=16). This group is made up of personnel from the 341X4 (38 percent) and 341X6 (62 percent) career ladders. Fifty-six percent of these personnel (including personnel from both ladders) are assigned to SAC, operating and maintaining FB-111 mission simulators. The remainder work in TAC organizations and are operating and maintaining simulators for F-4E and F-111 aircraft. Tasks which are unique to this group include: adjust landmass gantry drive systems; remove or install radar scopes; and isolate malfunctions on attack radar systems, CPUS radar landmass systems, and target generation systems. In addition, personnel from this group also perform a variety of other general operation and maintenance tasks common to other operator maintainers within the Training Devices career field.

I. Training Devices Supervisory Operator Maintainers (GRP161, N=64). This group is composed primarily of 7-skill level personnel who in addition to performing supervisory and administrative tasks also perform operator and maintenance tasks for over 50 percent of their work time. Personnel from all of the Training Devices career ladders were found in this group. However, over 50 percent were from the Analog Flight Simulator career ladder (341X3). A majority of this group were in SAC and MAC, but ADC, TAC and ATC were also represented. Primarily tasks from supervisory duties formed the basis for the grouping of these personnel. These included such tasks as, direct shop housekeeping, assign work priorities, make entries on simulator maintenance forms, counsel personnel on personal or military related

problems, and prepare APRs. Also a number of general preventive maintenance tasks were performed by high percentages of the group indicating a day-to-day involvement in the actual maintenance function. These included; visually inspect test equipment for serviceability; visually inspect electrical systems, wire harness, cables, or connector plugs; and physically check for loose mountings or connections. Several simulators were maintained by personnel in this group, however the most common included the KC-135, maintained by 23 percent of the group; the T-1, maintained by 19 percent and the T-4 maintained by 22 percent. Smaller percentages maintained simulators for the B-52, the C-130 or F-106 aircraft.

J. Limited Maintenance Specialists (GRP122, N=164). Members of this group characteristically are in their first enlistment, are 3- or 5-skill level and have an average of only 27 months in the training device career field. Approximately three-fourths of these personnel are from the Analog Flight Simulator career ladder. The remainder include small numbers of personnel from the other ladder in this career field. These personnel perform a variety of tasks which are common to most simulator operation and maintenance functions, but require only minor specialized knowledges of their specific simulator in order to perform them.

K. Defensive System Trainer Operator Maintainers (GRP135, N=40). All but two of this group are from the Defensive System Trainer (341X2) career ladder. These personnel are primarily 5-skill level airmen who average slightly over five years average experience in the career ladder. Tasks which are common to large percentages of the members of this group are primarily the general preventive maintenance and remove and replace tasks which are common to most operator maintenance personnel within this career field. Some operator tasks however, which were somewhat unique to this group were operate flight director controls, fire control radars, graphic display units, and ground track recorders. Thirty percent or more of this group also isolated malfunctions on a variety of systems which were maintained by few members of other groups. These included signal analyzer ECM systems, simulated automatic and manual jamming systems, chaff dispenser ECM systems and flare ECM systems. In addition, approximately one third adjust fire control systems, and multi-channel tape recorders, tasks performed by very few personnel in other groups.

L. Tactical Digital Training Devices Operator Maintainers (GRP101, N=31). This rather heterogeneous group is made up of 18 Digital Flight Simulator and 13 Digital Navigation/Tactics Training Devices personnel. Most of these personnel operate and maintain simulators for tactical aircraft such as the F-4E, F-111F and F-15A. In addition to performing a variety of general operation and maintenance tasks common to most other operator maintainer groups, there were several operator tasks performed by higher percentages of this group than any other group within the career field. Typical examples of these included operating instructor consoles (87 percent), operating digital computer control panels (87 percent), setting up ground targets

(71 percent), operating digital radar landmass systems (64 percent), serving as ground crew during simulator missions (58 percent), and operating armament systems (45 percent). Also included within this group were four airmen from SAC who were assigned as command development technicians.

M. Training Devices Operator Maintainer Assistants (GRP073, N=32). This is a very heterogeneous grouping of training devices personnel who perform a variety of general operating and maintenance tasks which are common to most of the other groups within the career field. Fifty-six percent of these airmen are from the 341X4 career ladder while twenty-eight percent are 341X6 personnel. The remainder are form the 341X1, 341X3 and 341X5 career ladders.

These personnel have the least time in military service and experience in the career field of any of the career field groups. All work in organizations within the CONUS.

II. Supervision and Management Personnel (GRP021, N=312). In addition to 95 of the 102 Training Devices Superintendents responding to the survey, this group includes a number of 7-skill level personnel performing high level supervisory, management or special technical functions within the career field. From the standpoint of tasks performed, the jobs identified within this cluster are very heterogeneous. Few tasks are common to 70 percent or more of this group. This is understandable considering the different kinds of jobs represented by this group. The majority of these personnel (68 percent) serve as supervisors in such positions as Training Devices Superintendent or Branch Chief, positions where their primary function is the supervision of the operation and maintenance of training devices for air crew training. The remainder are involved in a number of specialized support or management type jobs. Examples of some of these include Training Development Team members, MAJCOM Training Devices Representatives; Quality Control Inspectors, Maintenance and/or Supply Coordinators, and Technical Representatives of the Contracting Office (TRCOs). It was interesting to note that a majority of the Training Development Team technicians were from either the Digital Flight Simulator or the Digital Navigation/Tactics Training Devices career ladders. This may be indicative of the increasing emphasis on digital technology in the design and development of new training devices within the field.

III. Formal Training Personnel (GRP028, N=15). This small cluster of 15 personnel was primarily composed of technical school instructors teaching in the basic courses at Chanute AFB. Characteristically members of this group performed very few tasks, almost all of which were specifically related to the conduct of classroom training such as developing curricula or plans of instruction, writing test questions, evaluating progress of trainees, counseling trainees, demonstrating operation of equipment and administering or scoring tests. Although most individuals also performed a few equipment operation and maintenance tasks, these were often unique to the particular portion of the course taught and not common to other personnel in this

group. Although there were a number of other training instructor personnel included within the occupational survey, this cluster was the only group in which instructor tasks were preponderant and characterized the job. Since instructors normally perform a number of operator and maintenance tasks as a part of, or in addition to their instruction, many of these airmen grouped with personnel who operated and maintained the same type of equipment in the field as that taught in the classroom. This is especially true of those Field Training Detachment (FTD) instructors maintaining operational training devices at Vandenberg AFB and Castle AFB.

IV. Instrument Trainer Instructor Personnel (GRP015, N=82). This group contains only personnel in the Instrument Trainer career ladder and are described in detail in the AFS 341X1 Occupational Survey Report.

Summary

The clustering analysis of this career field revealed four distinctly different kinds of jobs. Two major clusters containing almost 94 percent of the survey respondents included those airmen who operate and maintain training devices as their primary job and the supervisors or managers of training devices functions. The other two small clusters contained those members of the Instrument Trainer career ladder who served as Instrument Trainer Instructors and personnel who planned and or conducted formal training for training devices personnel.

Characteristically, operation and maintenance personnel in this career field perform a rather large number of tasks that are common to all career ladders. These are general preventive maintenance, operating, isolating malfunctions, and removing and replacing components of units. These common tasks tend to group personnel from all of the ladders and was a major factor in the career field structuring process. Other factors which were instrumental in the grouping process included the degree of supervision exercised, the kind of computers (digital or analog) operated and maintained, and the number of tasks performed.

A review of the group job descriptions and background information within the training devices operation and maintenance cluster reveals that several of these groups contained rather large percentages of two or more career ladders. For example, the Senior Analog Training Devices Operator Maintainers was composed at 12 percent of respondents from the 341X1 ladder, 52 percent of 341X3 ladder respondents, and 17 percent of 341X5 ladder respondents. Airmen in the Defensive Systems-Analog Navigation/Tactics Training Devices Operator Maintainer group were from the 341X2 and the 341X5 ladders. While the Digital Training Devices Operator Maintainers group contained 54 percent of 341X4 respondents and 48 percent of 341X6 respondents. The other operator maintainer groups were made up primarily of personnel from one ladder, except in supervisory groups where supervisory tasks were the primary grouping factors and in the limited performance groups where performance was limited to a small number of routine operation and maintenance tasks common to most ladders.

TABLE 3

PERCENT TIME SPENT ON DUTIES BY CLUSTER GROUPS WITHIN THE TRAINING DEVICES CAREER FIELD
(PERCENT MEMBERS PERFORMING)

DUTIES	TRAINING DEVICES OPER & MAINT PERSONNEL	SUPERVISION & MAINT PERSONNEL	FORMAL TRAINING PERSONNEL	INSTRUMENT TRAINER INS' PERSONNEL
SUPERVISORY AND MANAGEMENT FUNCTIONS				
A ORGANIZING AND PLANNING	1	17	3	2
B DIRECTING AND IMPLEMENTING	4	26	9	4
C INSPECTING AND EVALUATIING	2	23	6	2
D TRAINING	2	9	56	5
ADMINISTRATIVE FUNCTIONS				
E WORKING WITH FORMS, RECORDS, REPORTS, DIRECTIVES, OR TECHNICAL DATA	4	8	2	1
TECHNICAL FUNCTIONS				
F PERFORMING PREVENTIVE MAINTENANCE	14	3	2	1
G OPERATING TRAINING DEVICES	12	4	6	27
H OPERATING MISSILE PROCEDURES TRAINERS	*	*	0	*
I ISOLATE MALFUNCTIONS ON COMPUTERS AND PERIPHERAL EQUIPMENT	3	1	3	*
J ISOLATE MALFUNCTIONS ON SIMULATOR SYSTEMS AND PERIPHERAL EQUIPMENT	4	*	*	*
K ISOLATE MALFUNCTIONS ON SIMULATOR SYSTEMS WITH ANALOG COMPUTERS	2	*	*	*
L ISOLATE MALFUNCTIONS ON SIMULATOR SYSTEMS WITH DIGITAL COMPUTERS	2	*	*	*
M ISOLATE MALFUNCTIONS ON SIMULATOR AND COMPUTER COMPONENTS	6	2	3	*
N ISOLATE MALFUNCTIONS ON MISSILE PROCEDURE TRAINERS	*	*	*	*
O REMOVING OR REPLACING COMPONENTS OR SYSTEM UNITS	17	*	*	*
P ALIGNING AND ADJUSTING SIMULATOR SYSTEMS OR COMPONENTS	9	*	1	*
Q PERFORMING IN-SHOP MAINTENANCE	6	*	1	*
R PERFORMING INSTRUMENT TRAINER INSTRUCTION FUNCTIONS	2	*	3	53
S MAINTAINING MOBILE AIRCREW TRAINING DEVICES	*	*	0	*
T PERFORMING OPERATIONAL CHECKS	5	1	*	*
U MAINTAINING MISCELLANEOUS EQUIPMENT	2	*	1	*

* INDICATES LESS THAN ONE PERCENT

TABLE 4

PERCENT TIME SPENT ON DUTIES BY JOB TYPE GROUPS WITHIN THE TRAINING DEVICES CAREER FIELD

DUTY	SR ANALOG TRNG DEV OPR MTR	DEF SYS ANALOG NAV/TACT OPR MTR	DIGITAL TRNG DEV OPR MTR	DIGITAL TRNG DEV SHIFT CHIEFS	ANALOG NAV/TACT TRNG DEV OPR MTR	MISSILE TRNR OPR MTR	INST TRNR OPR MTR	RADAR LANDMASS SYS OPR MTR	TRNG DEV SUPV OPR MTR	LMTD MAINT PERSNL	DEF SYS OPR MTR	TACTICAL DIGITAL TRNG DEV OPR MTR	TRNG DI OPR MTI ASST
A	1	2	1	4	1	2	2	*	7	*	1	1	*
B	3	4	2	11	3	5	4	2	14	2	3	3	1
C	2	2	1	6	1	3	2	*	9	1	2	2	*
D	2	2	2	7	2	3	3	2	7	1	1	2	1
E	3	4	3	5	4	5	4	3	7	4	4	4	6
F	14	13	12	10	16	14	13	12	10	22	17	13	20
G	9	9	17	9	10	8	14	14	5	9	12	35	22
H	*	1	*	*	*	6	*	*	*	1	*	1	1
I	2	3	4	2	2	5	1	5	2	1	2	2	2
J	5	3	5	5	2	2	3	5	3	4	3	4	3
K	5	2	1	*	2	*	1	2	3	4	2	*	1
L	*	2	5	4	1	*	1	7	1	1	2	3	3
M	5	8	8	8	7	6	3	9	4	4	6	5	7
N	*	*	*	*	*	5	*	*	*	*	0	*	*
O	19	20	16	12	22	15	9	17	10	21	19	10	15
P	11	11	9	5	12	9	6	8	7	8	9	4	6
Q	7	7	6	4	7	6	4	6	4	6	6	2	5
R	1	*	1	1	*	*	24	*	1	1	*	2	1
S	2	*	*	*	*	0	0	*	1	2	*	*	
T	5	5	5	4	6	4	4	5	4	6	7	4	3
U	2	2	2	1	2	2	2	1	1	2	3	3	3

(SEE TABLE 3 FOR DUTY TITLES)

TABLE 5

BACKGROUND INFORMATION BY CLUSTER GROUPS WITHIN THE TRAINING DEVICES CAREER FIELD

	TRAINING DEVICES OPER & MAINT PERSONNEL GRP017	SUPERVISION & MAINT PERSONNEL GRP021	FORMAL TRAINING PERSONNEL GRP028	INSTRUMENT TRAINER INST PERSONNEL GRP015
AVERAGE NUMBER OF TASKS PERFORMED	222	93	33	67
JOB DIFFICULTY INDEX	13.7	11.4	9.5	10.6
AVERAGE PAYGRADE	4.3	6.7	5.3	4.3
PERCENT OF MEMBERS WHO SUPERVISE	32	68	13	22
AVERAGE MONTHS IN TRAINING DEVICES CAREER FIELD	53	153	91	66
AVERAGE MONTHS TOTAL ACTIVE MILITARY SERVICE	80	212	133	79
PERCENT MEMBERS IN FIRST ENLISTMENT	44%	1%	0%	46%
PERCENT OF CAREER LADDER SAMPLE IN EACH GROUP				
341X1	46%	10%		44%
341X2	85%	14%	0%	0%
341X3	93%	7%	*	0%
341X4	81%	16%	1%	0%
341X5	91%	9%	0%	0%
341X6	79%	18%	3%	0%
341X7	86%	13%	0%	0%
34197	4%	95%	0%	0%

* INDICATES LESS THAN 1%

TABLE 6

BACKGROUND INFORMATION BY JOB TYPE GROUPS WITHIN THE TRAINING DEVICES CAREER FIELD

	SR ANALOG TRNG DEV OPR MTR	DEF SYS ANALOG NAV/TACT OPR MTR	DIGITAL TRNG DEV OPR MTR	DIGITAL TRNG DEV SHIFT CHIEFS	ANALOG NAV/TACT TRNG DEV OPR MTR	MISSILE TRNR OPR MTR	INST TRNR OPR MTR	RADAR LANDMASS SYS OPR MTR	TRNG DEV SUPV OPR MTR	LMTD MAINT PERSNL	DEF SYS OPR MTR	TACTICAL DIGITAL TRNG DEV OPR MTR	TRNG DEV OPR MTR ASST
AVERAGE NO. OF TASKS PERFORMED	262	248	301	215	154	230	199	153	212	124	124	142	93
JOB DIFFICULTY INDEX	14.9	15.1	16.8	15.5	11.6	14.2	13.8	13.0	14.4	8.5	9.7	10.8	7.4
AVERAGE PAYGRADE	4.3	4.3	4.4	5.9	4.6	3.9	4.6	4.4	5.7	3.6	4.0	4.2	3.6
PERCENT MEMBERS WHO SUPERVISE	37	34	29	80	40	33	39	31	84	11	22	16	9
AVG MOS IN TNG DEVICES CR FLD	57	51	54	118	46	37	57	43	117	27	39	30	19
AVG MOS TAFMS	78	84	77	184	104	61	83	87	163	43	65	64	42
PERC MBRS IN 1ST ENLISTMENT	42%	46%	41%	0%	30%	63%	36%	50%	5%	87%	73%	77%	94%
PERC OF CAREER LADDER SAMPLE IN EACH GROUP													
341X1	12%	1%	0%	1%	0%	*	15%	0%	3%	7%	0%	0%	1%
341X2	0%	41%	0%	0%	0%	0%	0%	0%	11%	2%	28%	0%	0%
341X3	52%	1%	1%	0%	0%	0%	0%	0%	7%	25%	*	0%	*
341X4	1%	*	54%	3%	0%	0%	0%	1%	*	2%	0%	4%	4%
341X5	17%	35%	2%	1%	18%	0%	0%	0%	2%	6%	1%	0%	1%
341X6	1%	1%	48%	2%	1%	0%	0%	4%	*	3%	0%	5%	3%
341X7	0%	1%	0%	0%	0%	74%	0%	0%	1%	0%	0%	0%	0%
34197	0%	2%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%

* INDICATES LESS THAN 1 PERCENT

ANALYSIS OF DAFSC GROUPS

An analysis by DAFSC of the Training Devices career field was conducted in order that comparisons could be made of each career ladder sample against the total career field sample to determine similarities and differences by skill level. The DAFSC 34197 is included in this analysis because personnel holding the 9-skill level can be placed in positions of supervisory responsibility in any of the seven career ladders within the career field.

With the exception of the time spent by DAFSC 341X1 personnel in the area of performing instrument trainer instruction functions, career field DAFSC groups are quite similar to the DAFSC groups of each career ladder. Table 7 illustrates the relative percent of time spent by the skill level groups on the various duties listed in the job inventory. There is clearly a differentiation between the 3- and 5-skill level technical specialists and the 7- and 9-skill level supervisors. However, there is also a relatively high degree of homogeneity in the total sample, indicating that supervisors also perform technical functions. As Table 8 depicts, there are 23 technical tasks performed by 60 percent or more of the total career field sample.

Skill Level Groups

As illustrated in the DAFSC analysis of each career ladder in the Training Devices career field, 3- and 5-skill level personnel are primarily technicians performing a majority of their time in three duty areas; performing preventive maintenance, operating training devices, and removing or replacing components or system units. Three-skill level personnel spend 52 percent of their time performing these duties while 5-skill level personnel spend 49 percent of their time on the same functions. There were 58 tasks performed by 50 percent or more of the 123 3-skill level respondents. Tasks performed by 67 percent or more of those airmen are listed in Table 9. The 5-skill level group is even more homogeneous. Ninety-three tasks are performed by 50 percent or more of the 1036 DAFSC 3415X respondents. Tasks performed by 70 percent or more of these airmen are listed in Table 10. As a review of the two tables shows many of the high performance tasks are performed by both 3- and 5-skill level airmen. There is more homogeneity of task performance displayed by the 5-skill level airmen but this is probably due to the larger average number of tasks performed and the experience level of the group rather than a distinct change in the type of jobs performed.

As a group, DAFSC 3417X personnel are less homogeneous than the 3- and 5-skill level groups. As shown in Table 11, tasks performed by large percentages of 7-skill level personnel tend to be supervisory and management in nature. However, only 40 percent of their time is spent performing technical duties. Since the tasks are more diverse, this creates a lower average of members performing for each task in the technical function areas. There is little doubt, though,

that 7-skill level airmen within this career field are performing more as technicians than as managers.

On the other hand, DAFSC 34197 personnel are clearly managers. Spending 86 percent of their time performing supervisory and management functions, these personnel comprise a homogeneous group of superintendents assigned to senior enlisted management positions across all the career ladders in the Training Devices career field. Typical tasks performed by DAFSC 34197 airmen are shown in Table 12. Eighty-eight percent of the members in this group indicated they were direct supervisors of personnel. Table 13 displays the various DAFSCs 9-skill level personnel supervise. It is important to note that the members of this group do have supervisory responsibility across the entire spectrum of DAFSCs in the Training Devices career field. Survey data also showed that there were members in this group that had progressed to the 9-skill level from each of the career ladders in the career field.

TABLE 7

PERCENT TIME SPENT ON DUTIES BY DAFSC GROUPS

	DUTIES	DAFSC 3413X (N=123)	DAFSC 3415X (N=1036)	DAFSC 3417X (N=593)	DAFSC 34197 (N=102)
SUPERVISORY AND MANAGEMENT					
A	ORGANIZING AND PLANNING	*	1	8	21
B	DIRECTING AND IMPLEMENTING	2	3	14	31
C	INSPECTING AND EVALUATING	1	1	11	26
D	TRAINING	1	2	7	8
ADMINISTRATIVE FUNCTIONS					
E	WORKING WITH FORMS, RECORDS, REPORTS DIRECTIVES, OR TECHNICAL DATA	4	3	6	5
TECHNICAL FUNCTIONS					
F	PERFORMING PREVENTIVE MAINTENANCE	18	14	8	2
G	OPERATING TRAINING DEVICES	16	14	8	1
H	OPERATING MISSILE PROCEDURES TRAINERS	1	1	*	*
I	ISOLATE MALFUNCTIONS ON COMPUTERS AND PERIPHERAL EQUIPMENT	3	3	3	1
J	ISOLATE MALFUNCTIONS ON SIMULATOR SYSTEMS AND PERIPHERAL EQUIPMENT	4	4	2	*
K	ISOLATE MALFUNCTIONS ON SIMULATOR SYSTEMS WITH ANALOG COMPUTERS	2	2	1	*
L	ISOLATE MALFUNCTIONS ON SIMULATOR SYSTEMS WITH DIGITAL COMPUTERS	2	2	2	*
M	ISOLATE MALFUNCTIONS ON SIMULATOR AND COMPUTER COMPONENTS	5	6	5	1
N	ISOLATE MALFUNCTIONS ON MISSILE PROCEDURE TRAINERS	*	*	*	-
O	REMOVING OR REPLACING COMPONENTS OR SYSTEM UNITS	18	16	9	1
P	ALIGNING AND ADJUSTING SIMULATOR SYSTEMS OR COMPONENTS	7	9	6	1
Q	PERFORMING IN-SHOP MAINTENANCE	6	6	4	1
R	PERFORMING INSTRUMENT TRAINER INSTRUCTION FUNCTIONS	2	5	2	*
S	MAINTAINING MOBILE AIRCREW TRAINING DEVICES	1	1	*	*
T	PERFORMING OPERATIONAL CHECKS	5	5	3	1
U	MAINTAINING MISCELLANEOUS EQUIPMENT	2	2	1	*

* INDICATES LESS THAN ONE PERCENT

TABLE 8

TASKS PERFORMED BY 60 PERCENT OR MORE OF DAFSC 341XX PERSONNEL
(N=1,886)

TASKS		PERCENT MEMBERS PERFORMING
E11	MAKE ENTRIES ON SIMULATOR MAINTENANCE FORMS SUCH AS AFTO FORMS 349, 350, 359, 781, or 781A	77
G6	DOCUMENT DISCREPANCIES OF SIMULATOR PERFORMANCES	72
F46	TEST ELECTRONIC COMPONENTS SUCH AS DIODES, TRANSISTORS, CAPACITORS, OR RESISTORS	72
F50	VISUALLY INSPECT ELECTRICAL SYSTEMS	71
F60	VISUALLY INSPECT WIRE HARNESS, CABLES, OR CONNECTOR PLUGS	70
F54	VISUALLY INSPECT POWER SUPPLY SYSTEMS	69
F37	VISUALLY CHECK FOR LOOSE MOUNTINGS OR CONNECTIONS	68
F45	STRIP ELECTRICAL WIRES	68
F58	VISUALLY INSPECT VOLTAGE LEVELS, FREQUENCY VARIATIONS, OR CURRENT	67
F57	VISUALLY INSPECT TEST EQUIPMENT FOR SERVICEABILITY	65
O56	REMOVE OR INSTALL INDICATORS	65
F17	CLEAN SOLDERING IRONS	65
G6	DOCUMENT DISCREPANCIES OF SIMULATOR PERFORMANCES	64
F20	CONDUCT PERIODIC MAINTENANCE INSPECTIONS	64
O55	REMOVE OR INSTALL INDICATOR LIGHTS OR PANEL LIGHTS	64
F51	VISUALLY INSPECT ELECTRO-MECHANICAL DEVICES	62
P2	ADJUST AC OR DC SUPPLIES	62
O104	REMOVE OR INSTALL SOLDERED COMPONENTS SUCH AS TRANSISTORS RESISTORS OR CAPACITORS	61
O1	DISASSEMBLE SUBASSEMBLIES FOR REMOVAL OR REPLACEMENT OF COMPONENTS	61
F47	TEST ELECTRO-MECHANICAL COMPONENTS SUCH AS SYNCHROS RESOLVERS, POTENTIOMETERS, OR TRANSFORMERS	61
O44	REMOVE OR INSTALL FUSES OR CIRCUIT BREAKERS	61
F9	CLEAN HAND TOOLS OR SHOP EQUIPMENT	60
O57	REMOVE OR INSTALL INSTRUMENT KNOBS	60

TABLE 9

REPRESENTATIVE TASKS PERFORMED BY DAFSC 3413X PERSONNEL
(N=123)

TASKS		PERCENT MEMBERS PERFORMING
F19	CLEAN UP SHOPS	89
F46	TEST ELECTRONIC COMPONENTS SUCH AS DIODES, TRANSISTORS, CAPACITORS, OR RESISTORS	87
055	REMOVE OR INSTALL INDICATOR LIGHTS OR PANEL LIGHTS	82
F17	CLEAN SOLDERING IRONS	80
F45	STRIP ELECTRICAL WIRES	80
F9	CLEAN HAND TOOLS OR SHOP EQUIPMENT	77
F37	PHYSICALLY CHECK FOR LOOSE MOUNTINGS OR CONNECTIONS	74
E11	MAKE ENTRIES ON SIMULATOR MAINTENANCE FORMS SUCH AS AFTO FORMS 349, 350, 359, 781 781A	73
F58	VISUALLY INSPECT VOLTAGE LEVELS, FREQUENCY VARIATIONS, OR CURRENT	73
F50	VISUALLY INSPECT ELECTRICAL SYSTEMS	73
0104	REMOVE OR INSTALL SOLDERED COMPONENTS SUCH AS TRANSISTORS, RESISTORS, OR CAPACITORS	71
056	REMOVE OR INSTALL INDICATORS	71
F60	VISUALLY INSPECT WIRE HARNESSES, CABLES, OR CONNECTOR PLUGS	69
F20	CONDUCT PERIODIC MAINTENANCE INSPECTIONS	68
044	REMOVE OR INSTALL FUSES OR CIRCUIT BREAKERS	68
T11	PERFORM PREFLIGHT OPERATIONAL CHECKS	67
F54	VISUALLY INSPECT POWER SUPPLY SYSTEMS	67

TABLE 10

TASKS PERFORMED BY 70 PERCENT OR MORE OF DAFSC 3415X PERSONNEL
(N=1,036)

TASKS		PERCENT MEMBERS PERFORMING
F19	CLEAN UP SHOPS	88
F46	TEST ELECTRONIC COMPONENTS SUCH AS DIODES, TRANSISTORS, CAPACITORS, OR RESISTORS	85
F45	STRIP ELECTRICAL WIRES	83
F50	VISUALLY INSPECT ELECTRICAL SYSTEMS	82
F37	PHYSICALLY CHECK FOR LOOSE MOUNTINGS OR CONNECTIONS	81
E11	MAKE ENTRIES ON OR ATTACH EQUIPMENT STATUS TAGS OR LABELS SUCH AS DD FORMS 1574 1575, 1577 or 1577-2	80
F60	VISUALLY INSPECT WIRE HARNESSES, CABLES, OR CONNECTOR PLUGS	80
056	REMOVE OR INSTALL INDICATORS	79
F54	VISUALLY INSPECT POWER SUPPLY SYSTEMS	79
F17	CLEAN SOLDERING IRONS	79
055	REMOVE OR INSTALL INDICATOR LIGHTS OR PANEL LIGHTS	78
F58	VISUALLY INSPECT VOLTAGE LEVELS, FREQUENCY VARIATIONS, OR CURRENT	78
F47	TEST ELECTRO-MECHANICAL COMPONENTS SUCH AS SYNCHROS, RESOLVERS, POTENTIOMETERS, OR TRANSFORMERS	75
F20	CONDUCT PERIODIC MAINTENANCE INSPECTIONS	74
P2	ADJUST AC OR DC SUPPLIES	74
01	DISASSEMBLE SUBASSEMBLIES FOR REMOVAL OR REPLACEMENT OF COMPONENTS	73
F9	CLEAN HAND TOOLS OR SHOP EQUIPMENT	73
057	REMOVE OR INSTALL INSTRUMENT KNOBS	73
G6	DOCUMENT DISCREPANCIES OF SIMULATOR PERFORMANCES	72
0104	REMOVE OR INSTALL SOLDERED COMPONENTS SUCH AS TRANSISTORS, RESISTORS OR CAPACITORS	72
044	REMOVE OR INSTALL FUSES OR CIRCUIT BREAKERS	72
F51	VISUALLY INSPECT ELECTRO-MECHANICAL DEVICES	71
F57	VISUALLY INSPECT TEST EQUIPMENT FOR SERVICEABILITY	71
F27	LACE WIRING ASSEMBLIES	70

TABLE 11

TASKS PERFORMED BY 65 PERCENT OR MORE OF DAFSC 3417X PERSONNEL
(N=593)

	TASKS	PERCENT MEMBERS PERFORMING
E11	MAKE ENTRIES ON SIMULATOR MAINTENANCE FORMS SUCH AS AFTO FORMS 349, 350, 359, 781 OR 781A	77
C37	PREPARE APRS	73
B8	COUNSEL PERSONNEL ON PERSONAL OR MILITARY RELATED PROBLEM	70
E18	RESEARCH OR REQUISITION SUPPLY STOCK NUMBERS OR PARTS	70
D10	DEMONSTRATE HOW TO LOCATE TECHNICAL INFORMATION	70
A3	ASSIGN WORK PRIORITIES	69
D11	DEMONSTRATE OPERATION OF EQUIPMENT	69
B16	DIRECT SHOP HOUSEKEEPING	68
D17	MAINTAIN OJT RECORDS	68
A15	MONITOR OR CERTIFY PREPARATION OF RECORDS OR REPORTS	65
D15	EVALUATE PROGRESS OF TRAINEES	65
E3	IDENTIFY SIMULATOR PARTS	65
D9	COUNSEL TRAINEES ON TRAINING PROGRESS	65

TABLE 12

TASKS PERFORMED BY 80 PERCENT OR MORE OF DAFSC 34197 PERSONNEL
(N=102)

	TASKS	PERCENT MEMBERS PERFORMING
B22	DRAFT CORRESPONDENCE	98
A4	ATTEND STAFF, COUNCIL, BOARD, OR PLANNING MEETINGS	98
B30	INITIATE RECOGNITION FOR COMMENDABLE PERFORMANCE	93
A1	ASSIGN PERSONNEL TO DUTY POSITIONS	92
B8	COUNSEL PERSONNEL ON PERSONAL OR MILITARY RELATED PROBLEMS	91
A15	MONITOR OR CERTIFY PREPARATION OF RECORDS OR REPORTS	90
C37	PREPARE APRS	90
A27	SCHEDULE LEAVES OR PASSES	89
B2	CLARIFY POLICIES, DIRECTIVES, OR PROCEDURES FOR SUBORDINATES	88
C3	ENDORSE AIRMAN PERFORMANCE REPORTS (APRS)	86
A2	ASSIGN SPONSORS TO NEWLY ASSIGNED PERSONNEL	86
B28	INDOCTRINATE NEWLY ASSIGNED PERSONNEL	84
B21	DISTRIBUTE CORRESPONDENCE, TECHNICAL INFORMATION, OR DIRECTIVES	83
A13	ESTABLISH PROCEDURAL GUIDELINES SUCH AS OPERATING INSTRUCTIONS (OIs) OR SPECIAL OPERATING INSTRUCTIONS (SOIS)	82
C9	EVALUATE EQUIPMENT PERFORMANCE	82
A7	COORDINATE WITH SUPPLY ACTIVITIES	81
A6	COORDINATE SIMULATOR SCHEDULES WITH TRAINING SQUADRONS, MAINTENANCE, OR OPERATIONS	80
A3	ASSIGN WORK PRIORITIES	80
C25	EVALUATE REPORTS	80
C40	REVIEW MANNING DOCUMENTS	80

TABLE 13

PERCENT OF DAFSC 34197 PERSONNEL SUPERVISING VARIOUS DAFSC PERSONNEL WITHIN THE TRAINING DEVICES CAREER FIELD

	TASK	PERCENT PERFORMING
B45	SUPERVISE CIVILIAN PERSONNEL	44
B46	SUPERVISE MILITARY PERSONNEL IN AFSCs OTHER THAN 341XX	30
B47	SUPERVISE ANALOG FLIGHT SIMULATOR SPECIALISTS (AFSC 34153)	21
B48	SUPERVISE ANALOG NAVIGATION/TACTICS SIMULATOR SPECIALISTS (AFSC 34155)	17
B49	SUPERVISE APPRENTICE ANALOG FLIGHT SIMULATOR SPECIALISTS (AFSC 34133)	10
B50	SUPERVISE APPRENTICE ANALOG NAVIGATION/TACTICS SIMULATOR SPECIALISTS (AFSC 34135)	11
B51	SUPERVISE APPRENTICE DEFENSIVE SYSTEMS TRAINER SPECIALISTS (AFSC 34132)	4
B52	SUPERVISE APPRENTICE DIGITAL FLIGHT SIMULATOR SPECIALISTS (AFSC 34134)	12
B53	SUPERVISE APPRENTICE DIGITAL NAVIGATION/TACTICS SIMULATOR SPECIALISTS (AFSC 34136)	12
B54	SUPERVISE APPRENTICE INSTRUMENT TRAINER SPECIALISTS (AFSC 34131)	8
B55	SUPERVISE APPRENTICE MISSILE PROCEDURES TRAINER SPECIALISTS (AFSC 34137)	2
B56	SUPERVISE INSTRUMENT TRAINER SPECIALISTS (AFSC 34151)	15
B57	SUPERVISE DEFENSIVE SYSTEMS TRAINER SPECIALISTS (AFSC 34152)	9
B58	SUPERVISE ANALOG FLIGHT SIMULATOR SPECIALISTS (AFSC 34153)	17
B59	SUPERVISE DIGITAL FLIGHT SIMULATOR SPECIALISTS (AFSC 34154)	22
B60	SUPERVISE ANALOG NAVIGATION/TACTICS SIMULATOR SPECIALISTS (AFSC 34155)	15
B61	SUPERVISE DIGITAL NAVIGATION/TACTICS SIMULATOR SPECIALISTS (AFSC 34156)	15
B62	SUPERVISE MISSILE PROCEDURES TRAINER SPECIALISTS (AFSC 34157)	3
B63	SUPERVISE INSTRUMENT TRAINER TECHNICIANS (AFSC 34171)	17
B64	SUPERVISE DEFENSIVE SYSTEMS TRAINER TECHNICIANS (AFSC 34172)	19
B65	SUPERVISE ANALOG FLIGHT SIMULATOR TECHNICIANS (AFSC 34173)	35
B66	SUPERVISE DIGITAL FLIGHT SIMULATOR TECHNICIANS (AFSC 34174)	43
B67	SUPERVISE ANALOG NAVIGATION/TACTICS SIMULATOR TECHNICIANS (AFSC 34175)	29
B68	SUPERVISE DIGITAL NAVIGATION/TACTICS SIMULATOR TECHNICIANS (AFSC 34176)	35
B69	SUPERVISE MISSILE PROCEDURES TRAINER TECHNICIANS (AFSC 34177)	5
B70	SUPERVISE TRAINING DEVICES SUPERINTENDENTS (AFSC 34197)	18

ANALYSIS OF AFMS GROUPS

An analysis was also conducted comparing job differences among individuals grouped by time in service. Very similar conclusions to those for DAFSC groups were noted.

Table 14 displays the relative percent of time spent on duties by AFS 341XX personnel grouped by enlistment period. The same trend is exhibited here as was found in the separate analyses of the career ladders. Throughout all enlistment periods, airmen tend to move into positions of greater supervisory and management responsibility as they gain time in service. The longer individuals have in service, the less time they spend performing technical tasks and duties. However, it is not until the 20 year service point before personnel spend more time in supervisory and management functions than they do performing technical functions. Even at this point though, the rise in the time spent performing supervisory and management functions can be attributed to the inclusion in this table of DAFSC 34197 personnel. Fifty-one percent of the personnel in the 241 + months TAFMS group are Training Devices Superintendents. So for the most part, regardless of experience level, most AFS 341XX airmen will function as "hands-on" equipment technicians throughout their Air Force career.

A look at tasks performed by first enlistment airmen (148 months TAFMS) continues to show a high degree of homogeneity of the first job across the Training Devices career field. Of the 1144 inventory tasks, 85 are performed by 50 percent or more of this group. The average number of tasks for this group is 187. First enlistment airmen show a particularly high degree of task commonality in the duties of performing preventive maintenance, and removing or replacing components or system units as shown in Table 15.

TABLE 14

PERCENT TIME SPENT ON DUTIES BY 341XX AFMS GROUPS

DUTY	MONTHS TOTAL ACTIVE FEDERAL MILITARY SERVICE 1-48 (N=686)	49-96 (N=381)	97-144 (N=276)	145-192 (N=209)	193-240 (N=187)	241+ (N=144)
SUPERVISORY AND MANAGEMENT FUNCTIONS						
A ORGANIZING AND PLANNING	*	1	4	8	10	17
B DIRECTING AND IMPLEMENTING	1	4	8	13	17	27
C INSPECTING AND EVALUATING	1	4	6	12	14	21
D TRAINING	1	3	5	7	7	9
ADMINISTRATIVE FUNCTIONS						
E WORKING WITH FORMS, RECORDS, REPORTS, DIRECTIVES, OR TECHNICAL DATA	3	4	5	6	7	6
TECHNICAL FUNCTIONS						
F PERFORMING PREVENTIVE MAINTENANCE	16	13	11	8	7	3
G OPERATING TRAINING DEVICES	15	13	12	8	6	3
H OPERATING MISSILE PROCEDURES TRAINERS	1	*	*	*	*	*
I ISOLATE MALFUNCTIONS ON COMPUTERS AND PERIPHERAL EQUIPMENT	3	3	3	2	2	1
J ISOLATE MALFUNCTIONS ON SIMULATOR SYSTEMS AND PERIPHERAL EQUIPMENT	4	4	3	2	2	1
K ISOLATE MALFUNCTIONS ON SIMULATOR SYSTEMS WITH ANALOG COMPUTERS	2	2	2	2	1	1
L ISOLATE MALFUNCTIONS ON SIMULATOR SYSTEMS WITH DIGITAL COMPUTERS	2	2	2	2	2	1
M ISOLATE MALFUNCTIONS ON SIMULATOR AND COMPUTER COMPONENTS	6	6	6	4	4	2
N ISOLATE MALFUNCTIONS ON MISSILE PROCEDURE	*	*	*	*	*	*
O REMOVING OR REPLACING COMPONENTS OR SYSTEM UNITS	17	16	12	9	7	3
P ALIGNING AND ADJUSTING SIMULATOR SYSTEMS OR COMPONENTS	9	8	7	6	5	2
Q PERFORMING IN-SHOP MAINTENANCE	6	6	5	4	3	1
R PERFORMING INSTRUMENT TRAINER INSTRUCTION FUNCTIONS	5	5	3	3	1	1
S MAINTAINING MOBILE AIRCREW TRAINING DEVICES	1	1	*	*	1	*
T PERFORMING OPERATIONAL CHECKS	5	5	4	3	3	1
U MAINTAINING MISCELLANEOUS EQUIPMENT	2	2	2	1	1	*

* INDICATES LESS THAN ONE PERCENT

TABLE 15

REPRESENTATIVE TASKS PERFORMED BY 341XX PERSONNEL WITH 1-48 MONTHS TAFMS
(N=686)

TASKS		PERCENT MEMBERS PERFORMING
F19	CLEAN UP SHOPS	91
F46	TEST ELECTRONIC COMPONENTS SUCH AS DIODES, TRANSISTORS, CAPACITORS, OR RESISTORS	88
F45	STRIP ELECTRICAL WIRES	85
F17	CLEAN SOLDERING IRONS	82
F50	VISUALLY INSPECT ELECTRICAL SYSTEMS	82
F37	PHYSICALLY CHECK FOR LOOSE MOUNTINGS OR CONNECTIONS	81
055	REMOVE OR INSTALL INDICATOR LIGHTS OR PANEL LIGHTS	81
056	REMOVE OR INSTALL INDICATORS	79
F60	VISUALLY INSPECT WIRE HARNESSES, CABLES, OR CONNECTOR PLUGS	79
F58	VISUALLY INSPECT VOLTAGE LEVELS, FREQUENCY VARIATIONS, OR CURRENT	78
E11	MAKE ENTRIES ON SIMULATOR MAINTENANCE FORMS SUCH AS AFTO FORMS 349, 350, 359, 781 OR 781A	77
F54	VISUALLY INSPECT POWER SUPPLY SYSTEMS	77
F20	CONDUCT PERIODIC MAINTENANCE INSPECTIONS	76
F9	CLEAN HAND TOOLS OR SHOP EQUIPMENT	76
F47	TEST ELECTRO-MECHANICAL COMPONENTS SUCH AS SYNCHROS, RESOLVERS, POTENTIOMETERS, OR TRANSFORMERS	74
044	REMOVE OR INSTALL FUSES OR CIRCUIT BREAKERS	73
057	REMOVE OR INSTALL INSTRUMENT KNOBS	72
0104	REMOVE OR INSTALL SOLDERED COMPONENTS SUCH AS TRANSISTORS, RESISTORS OR CAPACITORS	72
G6	DOCUMENT DISCREPANCIES OF SIMULATOR PERFORMANCES	71
01	DISASSEMBLE SUBASSEMBLIES FOR REMOVAL OR REPLACEMENT OF COMPONENTS	71
F51	VISUALLY INSPECT ELECTRO-MECHANICAL DEVICES	70
P2	ADJUST AC OR DC SUPPLIES	70
F6	CLEAN AIR FILTERS	70

SIMILARITIES AND DIFFERENCES IN TASKS PERFORMED AMONG CAREER LADDERS IN THE TRAINING DEVICES CAREER FIELD

Since all the career ladders surveyed perform jobs related to the maintenance of training devices, it can be assumed that there are certain tasks that would be common for all these specialties. At the same time, it can be assumed that since each career ladder maintains different types of training devices, the tasks performed by each specialty would be different. This section will show the similarities and differences in task performance among the various Training Devices career ladders. As the data presented will illustrate, both assumptions mentioned above are correct. Career ladders are very similar in the areas of performing preventive maintenance and removing or replacing system components, but are very different in the maintenance of specific equipment.

This section will examine the similarities and differences in task performance by first grouping the Flight Simulator and Navigation/Tactics Training Devices career ladders (AFSCs 341X3, 341X4, 341X5, and 341X6), comparing and contrasting them, and then comparing and contrasting the task performance of each of the other Training Devices career ladders to the data of that combined group. The 1-48 month TAFMS groups in each career ladder were chosen for the comparison because they represent the largest groups of individuals in each of the specialties.

Flight Simulator and Navigation/Tactics Training Devices Career Ladders

The Analog and Digital Flight Simulator career ladders (AFSCs 341X3 and 341X4), and the Analog and Digital Navigation/Tactics Training Devices career ladders (AFSCs 341X5 and 341X6), when combined form a very homogeneous group. As shown in Table 16, there are 59 tasks performed by 50 percent or more of the airmen in the 1-48 month TAFMS groups of each of these career ladders. When looking at a figure of 30 percent or more of each group performing, the number of common tasks rises to 142. In order to better demonstrate this commonality in tasks performed Table 17 lists the average number of tasks performed by first enlistment personnel in each career ladder. Clearly, the majority of tasks usually performed by the members of these groups are common across the four career ladders.

When comparing the similarities between the two AFSCs associated with analog training devices (AFSCs 341X3, 341X5) or those associated with digital training devices (AFSCs 341X4, 341X6), the results are even more dramatic. There are 177 tasks performed by 30 percent or more of first enlistment personnel in both AFSCs 341X3 and 341X5, and 254 tasks performed by 30 percent or more of both AFS 341X4 and 341X6 first enlistment groups.

There are however, tasks unique to each of these career ladders. There are 20 tasks of which only 30 percent or more of AFS 341X3 first enlistment personnel were found to be performing. These tasks listed in Table 18 are primarily related to the isolation of malfunctions on simulator systems with analog computers, and alignment and adjustment procedures. The 22 tasks shown in Table 19 exclusive to AFS 341X5 first enlistment airmen also fall in the same areas. There are only five tasks exclusive to the AFS 341X4 first enlistment group (See Table 20), but there are 31 tasks listed in Table 21 unique to the AFS 341X6 first enlistment personnel. The tasks of sole responsibility for this group lie primarily in the areas of operating training devices and malfunction isolation on simulator systems with digital computers.

Defensive System Career Ladder

The AFS 341X2, Defensive System, first enlistment group was found to possess a high degree of task commonality with the other groups maintaining flight related training devices. Of the 59 tasks listed in Table 16, 55 were also performed by 50 percent or more of this group. In addition, there were 122 tasks performed by 30 percent or more of first enlistment personnel in each of these five AFSCs. Although 122 common tasks are fewer for AFS 341X2 personnel than the other career ladders discussed, this group averages fewer tasks performed (167).

Defensive system personnel perform far more tasks in common with digital trainer maintenance personnel than with analog trainer maintenance personnel. AFS 341X2 first enlistment airmen perform 154 tasks common to 30 percent or more of each AFS 341X4 and 341X6 first enlistment groups but only 132 tasks common to 30 percent or more of each AFS 341X3 and 341X5 first enlistment groups.

This career ladder has more in common with the navigation/tactics training devices career ladders than with the flight simulator career ladders. There were 153 tasks performed by 30 percent or more of this career ladder and both AFSCs 341X5 and 341X6. There were 181 tasks performed by 30 percent or more of both AFSCs 341X3 and 341X64. Logically then, greater commonality was found to be with the Digital Navigation/Tactics Training Devices career ladder. There were however, some differences in tasks performed. Seventeen tasks were identified as being performed exclusively by Defensive System personnel and are listed in Table 22. As expected, they pertain to the operation and maintenance of specific defensive system training devices.

Missile Trainer Career Ladder

Although AFS 341X7 Missile Trainer personnel do not maintain equipment that simulates flight crew functions they do possess a great deal of task commonality with the Training Devices career ladders previously discussed. Of the 59 tasks listed in Table 16, 54 were also

performed by 50 percent or more of this group. There were 112 tasks performed by 30 percent or more of both AFS 341X7 first enlistment personnel and the first enlistment personnel in AFSCs 341X3, 341X4, 341X5, and 341X6. However, Missile Trainer personnel were found to exhibit the most task commonality with other personnel maintaining training devices with digital computers. There were 151 tasks performed by 30 percent or more of first enlistment airmen in the AFSCs 341X7, 341X4, and 341X6, and 170 tasks performed by 30 percent or more of both AFSC 341X7 and 341X6 groups.

There were also many very distinct differences in the tasks performed by Missile Trainer personnel as illustrated in Table 23. Again, as would be expected, the 56 tasks listed pertain primarily to the operation and maintenance of specific and unique missile trainer systems.

Instrument Trainer Career Ladder

When compared as a total group, there is very little commonality between Instrument Trainer personnel and the other Training Devices career ladders. Of the 59 tasks listed in Table 16, only four are performed by 50 percent or more of first enlistment personnel in this specialty. The number of tasks performed by 30 percent or more of the personnel in AFSC 341X1 and each of the flight simulator and navigation/tactics training devices career ladders is only 41. Although, as reported in the Occupational Survey Report for this career ladder, some AFS 341X1 personnel were found to be performing in a trainer maintenance capacity similar to Analog Flight Simulator (AFS 341X3) personnel, the majority of AFS 341X1 airmen however, function as instructor operators and are not actively involved in the maintenance of simulator equipment. Therefore, the common maintenance tasks linking the other Training Devices career ladders are not performed by large numbers of personnel in this specialty.

Instrument Trainer personnel are unique however, in their performance of instructor duties as illustrated by Table 24. The 43 tasks listed all pertain to performing instrument trainer instructor functions.

Summary

There is a great deal of task commonality and similarity among career ladders in the Training Devices career field. There is task commonality among personnel maintaining aircrew training devices, among personnel maintaining flight simulators, among personnel maintaining analog training devices, and among personnel maintaining digital training devices regardless of there AFSC. There is much similarity among maintainers in all career ladders in the areas of operating training devices, performing preventive maintenance, and in general malfunction isolation procedures.

There are also differences among the career ladders. Instrument Trainer instructor operators are very different in task performance from training devices maintainers. In addition, each career ladder is different from the others in the career field in terms of operation and maintenance of career ladder unique equipment. However, except for the unique instructor tasks performed by AFS 341X1 personnel, the exclusive tasks performed within any of the other career ladders are only a small part of the total job of that specialty.

TABLE 16

REPRESENTATIVE TASKS PERFORMED BY AIRMEN IN THE 1-48 MONTH TAFMS GROUPS OF THE 341X3, 341X4, 341X5, AND 341X6 CAREER LADDER

TASKS		TASK DIFFICULTY
E3	IDENTIFY SIMULATOR PARTS	4.03
E11	MAKE ENTRIES ON SIMULATOR MAINTENANCE FORMS SUCH AS AFTO FORMS 349, 350, 359, 781 or 781A	4.26
E18	RESEARCH OR REQUISITION SUPPLY STOCK NUMBERS OR PARTS	4.94
F6	CLEAN AIR FILTERS	2.02
F8	CLEAN COOLING FANS	2.04
F9	CLEAN HAND TOOLS OR SHOP EQUIPMENT	2.04
F14	CLEAN PARTS OR COMPONENTS USING SOLVENTS	3.07
F17	CLEAN SOLDERING IRONS	2.21
F19	CLEAN UP SHOPS	1.95
F20	CONDUCT PERIODIC MAINTENANCE INSPECTIONS	4.64
F27	LACE WIRING ASSEMBLIES	3.33
F30	LUBRICATE MECHANICAL ASSEMBLIES	2.90
F37	PHYSICALLY CHECK FOR LOOSE MOUNTINGS OR CONNECTIONS	3.39
F45	STRIP ELECTRICAL WIRES	2.08
F46	TEST ELECTRONIC COMPONENTS SUCH AS DIODES, TRANSISTORS, CAPACITORS, OR RESISTORS	4.61
F47	TEST ELECTRO-MECHANICAL COMPONENTS SUCH AS SYNCHROS, RESOLVERS, POTENTIOMETERS, OR TRANSFORMERS	5.19
F48	VACUUM EQUIPMENT	2.07
F49	VISUALLY INSPECT AIR CONDITIONING SYSTEMS	2.92
F50	VISUALLY INSPECT ELECTRICAL SYSTEMS	3.40
F51	VISUALLY INSPECT ELECTRO-MECHANICAL DEVICES	3.68
F54	VISUALLY INSPECT POWER SUPPLY SYSTEMS	3.59
F56	VISUALLY INSPECT SERVO SYSTEMS	3.55
F57	VISUALLY INSPECT TEST EQUIPMENT FOR SERVICEABILITY	3.40
F58	VISUALLY INSPECT VOLTAGE LEVELS, FREQUENCY VARIATIONS, OR CURRENT	3.82
F60	VISUALLY INSPECT WIRE HARNESSES, CABLES, OR CONNECTOR PLUGS	3.39
G6	DOCUMENT DISCREPANCIES OF SIMULATOR PERFORMANCES	3.81
G63	OPERATE INSTRUCTOR CONSOLES	5.21
G134	VISUALLY OBSERVE CONSOLE INDICATORS	3.92
I38	ISOLATE MALFUNCTIONS ON POWER SUPPLIES	5.67
J5	ISOLATE MALFUNCTIONS ON ELECTRICAL SYSTEMS	5.36
J16	ISOLATE MALFUNCTIONS ON HANDSETS, HEADSETS, OR MICROPHONES	4.00
J22	ISOLATE MALFUNCTIONS ON INDICATOR SYSTEMS	5.12
M47	ISOLATE MALFUNCTIONS USING SCHEMATICS OR WIRING DIAGRAMS	6.03
O1	DISASSEMBLE SUBASSEMBLIES FOR REMOVAL OR REPLACEMENT OF COMPONENTS	4.63
O8	REMOVE OR INSTALL AIR FILTERS	2.61
O13	REMOVE OR INSTALL CABLE ASSEMBLIES	3.94
O17	REMOVE OR INSTALL CIRCUIT WIRING	4.55
O23	REMOVE OR INSTALL CONNECTING PLUGS	4.01
O44	REMOVE OR INSTALL FUSES OR CIRCUIT BREAKERS	2.85
O55	REMOVE OR INSTALL INDICATOR LIGHTS OR PANEL LIGHTS	2.71
O56	REMOVE OR INSTALL INDICATORS	3.03
O57	REMOVE OR INSTALL INSTRUMENT KNOBS	2.10
O59	REMOVE OR INSTALL INSTRUMENTS SUCH AS CONSOLE, COCKPIT, OR STUDENT STATION	2.90
O60	REMOVE OR INSTALL LEADS OR CORDS	2.78
O85	REMOVE OR INSTALL POWER SUPPLIES	3.78
O94	REMOVE OR INSTALL RELAYS OR SOLENOIDS	3.94
O95	REMOVE OR INSTALL RESOLVERS, SYNCHROS OR POTENTIOMETERS	4.90
O104	REMOVE OR INSTALL SOLDERED COMPONENTS SUCH AS TRANSISTORS, RESISTORS, OR CAPACITORS	4.62
O105	REMOVE OR INSTALL SPEAKERS, MICROPHONES, HEADSETS OR HANDSETS	3.25
O111	REMOVE OR INSTALL TOGGLE SWITCHES	3.27
O122	REWIRE SYSTEMS USING SOLDERING EQUIPMENT	4.67
P2	ADJUST AC OR DC SUPPLIES	4.44
P75	ADJUST POWER SUPPLIES	4.69
T1	CHECK SWITCHES FOR POSITIVE ACTION	2.98
T11	PERFORM PREFLIGHT OPERATIONAL CHECKS	4.89
T18	TEST CONSOLE INSTRUMENTS	4.24
T21	TEST OPERATE SIMULATORS TO ISOLATE MALFUNCTIONS	5.70
U6	MAINTAIN AREA BEAUTIFICATION	2.19
U7	PACK OR UNPACK EQUIPMENT	2.60

TABLE 17

AVERAGE NUMBER OF TASKS PERFORMED BY 1-48 TAFMS PERSONNEL IN AFSCs 341X3, 341X4, 341X5, AND 341X6

	1-48 MONTHS TAFMS			
	341X3	341X4	341X5	341X6
AVERAGE NUMBER OF TASKS PERFORMED	178	205	213	235

TABLE 18

TASKS EXCLUSIVE TO THE 341X3 CAREER LADDER PERFORMED BY 30 PERCENT OR MORE OF FIRST ENLISTMENT PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING
F59	VISUALLY INSPECT WATER SUPPLY SYSTEMS	34
G38	OPERATE DIAGNOSTIC TEST PROGRAMS ON SIMULATORS WHICH USE ANALOG COMPUTERS SUCH AS AUTOMATIC AMPLIFIER CHECKERS	38
K5	ISOLATE MALFUNCTIONS ON ANGLE OF ATTACK (AOA) SYSTEMS	60
K7	ISOLATE MALFUNCTIONS ON AUTOPILOT SYSTEMS	70
K16	ISOLATE MALFUNCTIONS ON FLIGHT DIRECTOR SYSTEMS	57
K17	ISOLATE MALFUNCTIONS ON FUEL SYSTEMS	80
K19	ISOLATE MALFUNCTIONS ON HYDRAULIC SYSTEMS	59
K24	ISOLATE MALFUNCTIONS ON JET ENGINE SYSTEMS	65
K25	ISOLATE MALFUNCTIONS ON LAND, AIR, OR FREEZE RESET SYSTEMS	65
K32	ISOLATE MALFUNCTIONS ON RADIO AIDS CONSOLES	71
K33	ISOLATE MALFUNCTIONS ON RADIO NAVIGATIONAL SYSTEMS	52
K38	ISOLATE MALFUNCTIONS ON SOUND SYSTEMS SUCH AS ENGINE SOUND, TIRE SCREECH, OR MISSILE LAUNCH	58
M5	ISOLATE DEFECTIVE DEMODULATORS	35
039	REMOVE OR INSTALL FIXED-WING FLIGHT DIRECTOR CONTROL SUCH AS THROTTLES OR CONTROL STICKS	30
061	REMOVE OR INSTALL MAGNETIC ACTUATORS OR CYLINDERS	33
P7	ADJUST APPROACH OR GLIDE SLOPE DEVIATION RECORDERS ON SIMULATORS	41
P27	ADJUST DEMODULATORS ON SIMULATORS	56
P34	ADJUST ELECTRO-MECHANICAL CONTROL LOADING SYSTEMS	31
P39	ADJUST FLIGHT PATH RECORDERS	33
Q16	BENCH CHECK DEMODULATORS	32

TABLE 19

TASKS EXCLUSIVE TO THE 341X5 CAREER LADDER
PERFORMED BY 30 PERCENT OR MORE OF FIRST ENLISTMENT PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING
E9	MAINTAIN TO FILES, TO COMPLIANCE RECORDS OR DIRECTIVE FILES	45
F22	CONDUCT QUALITY CONTROL INSPECTIONS	33
G46	OPERATE DOPPLER RADAR SYSTEMS	42
I24	ISOLATE MALFUNCTIONS ON INTEGRATOR SERVO SYSTEMS	31
K12	ISOLATE MALFUNCTIONS ON DOPPLER SYSTEMS	62
K18	ISOLATE MALFUNCTIONS ON GROUND TRACKING RADAR SYSTEMS	35
K39	ISOLATE MALFUNCTIONS ON SRAM SYSTEMS	38
K40	ISOLATE MALFUNCTIONS ON TERRAIN AVOIDANCE SYSTEMS	38
K43	ISOLATE MALFUNCTIONS ON TIMING SYSTEMS	40
M42	ISOLATE MALFUNCTIONS ON SRAM ATTACHMENTS	35
M44	ISOLATE MALFUNCTIONS ON TOPOGRAPHICAL COMPARATORS	40
O46	REMOVE OR INSTALL GEAR BOXES OTHER THAN SERVOS	33
O79	REMOVE OR INSTALL PLOTTING BOARDS	35
P19	ADJUST COLLECTION ELECTRONICS SYSTEMS	35
P45	ADJUST GEAR TRAINS ON SIMULATORS	33
P61	ADJUST MASTER TIMING	31
P72	ADJUST PHASING	45
P76	ADJUST PROJECTION ELECTRONIC SYSTEMS	35
P77	ADJUST PROJECTION OPTICS	58
P95	ADJUST T-10 TERRAIN DATA SIGNAL GENERATORS	45
P138	ALIGN TRICOLOR COLLECTION OPTICS	55
Q20	BENCH CHECK GENERATORS	33

TABLE 20

TASKS EXCLUSIVE TO THE 341X4 CAREER LADDER
PERFORMED BY 30 PERCENT OR MORE OF FIRST ENLISTMENT PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING
G28	OPERATE CARD CHECKERS	31
G51	OPERATE FLIGHT DIRECTOR CONTROLS	30
J40	ISOLATE MALFUNCTIONS ON THREE-DEGREE MOTION SYSTEMS	33
M40	ISOLATE MALFUNCTIONS ON SLIDE PROJECTORS	35
O96	REMOVE OR INSTALL SEATS OTHER THAN EJECTION	31

TABLE 21

TASKS EXCLUSIVE TO THE 341X6 CAREER LADDER
PERFORMED BY 30 PERCENT OR MORE OF FIRST ENLISTMENT PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING
G19	OPERATE AIR DECOY MISSILE SYSTEMS SUCH AS DRONES	30
G21	OPERATE AIR-TO-GROUND RADAR BOMB RUNS	36
G23	OPERATE ARMAMENT SYSTEMS	39
G24	OPERATE ATTACK RADARS	40
G26	OPERATE AUTOMATIC TEST EQUIPMENT	33
G45	OPERATE DISCS	32
G48	OPERATE ENGINE CONTROL SYSTEMS	30
G64	OPERATE INTENSITY OF TARGET, WEATHER, OR GROUND ILLUMINATION CONTROLS	30
G70	OPERATE MAGNETIC DISC UNITS	30
G77	OPERATE PERIPHERAL EQUIPMENT FOR STUDENT SCORING OR EVALUATIONS SUCH AS BOMB RUNS, APPROACHES, OR INTERCEPTS	31
G104	OPERATE TERRAIN FOLLOWING RADAR	34
G125	SET UP GROUND TARGETS	47
I8	ISOLATE MALFUNCTIONS ON CARD READERS	31
I18	ISOLATE MALFUNCTIONS ON DIGITAL TIMING SYSTEMS	30
I30	ISOLATE MALFUNCTIONS ON MAGNETIC TAPE UNITS	33
J1	ISOLATE MALFUNCTIONS ON CANOPY ACTUATING MECHANISMS	49
J4	ISOLATE MALFUNCTIONS ON DIGITAL TARGET GENERATION SYSTEMS	40
L1	ISOLATE MALFUNCTIONS ON AIRBORNE TARGET GENERATION SYSTEMS	36
L5	ISOLATE MALFUNCTIONS ON AOA SYSTEMS	38
L6	ISOLATE MALFUNCTIONS ON ATTACK RADAR SYSTEMS	43
L30	ISOLATE MALFUNCTIONS ON OPTICAL SIGHT SYSTEMS	30
L36	ISOLATE MALFUNCTIONS ON RWR ECM SYSTEMS SUCH AS THAWS OR TEWS	43
L42	ISOLATE MALFUNCTIONS ON TERRAIN AVOIDANCE SYSTEMS	30
L43	ISOLATE MALFUNCTIONS ON TERRAIN FOLLOWING SYSTEMS	31
L45	ISOLATE MALFUNCTIONS ON TIMING SYSTEMS	31
M20	ISOLATE MALFUNCTIONS ON DIGITAL LINKAGE CONTROL PANELS	38
M50	TRANSLATE COMPUTER LANGUAGE PROGRAMS	31
P15	ADJUST CARD READERS	31
P51	ADJUST INERTIAL NAVIGATION SYSTEMS	41
P55	ADJUST LANDMASS GANTRY DRIVE SYSTEMS	48
Q6	BENCH CHECK ANALOG-TO-DIGITAL CONVERTER SYSTEMS	31

TABLE 22

TASKS EXCLUSIVE TO THE 341X2 CAREER LADDER
PERFORMED BY 30 PERCENT OR MORE OF FIRST ENLISTMENT PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING
G31	OPERATE CASSETTE TAPE UNITS	43
G52	OPERATE FIRE CONTROL ECM SYSTEMS	39
G53	OPERATE FIRE CONTROL HAND CONTROLS	54
G54	OPERATE FIRE CONTROL RADARS	42
G74	OPERATE MULTI-CHANNEL RECORDERS	39
G75	OPERATE PAPER TAPE PREPARATION UNITS	39
I32	ISOLATE MALFUNCTIONS ON MULTI-CHANNEL RECORDERS	31
K37	ISOLATE MALFUNCTIONS ON SIMULATED MANUAL JAMMING SYSTEMS	34
L10	ISOLATE MALFUNCTIONS ON CHAFF DISPENSER ECM SYSTEMS	38
L15	ISOLATE MALFUNCTIONS ON FLARE ECM SYSTEMS	44
L38	ISOLATE MALFUNCTIONS ON SIMULATED AUTOMATIC JAMMING SYSTEMS	40
L39	ISOLATE MALFUNCTIONS ON SIMULATED MANUAL JAMMING SYSTEMS	39
L44	ISOLATE MALFUNCTIONS ON THREAT DISPLAY ECM SYSTEMS	37
P36	ADJUST FIRE CONTROL SYSTEMS	45
P65	ADJUST MULTI-CHANNEL TAPE RECORDERS	50
P140	ALIGN VIDEO TARGET GENERATION SYSTEMS	42
Q12	BENCH CHECK COMPARATORS OR DISCRIMINATORS	47

TABLE 23

TASKS EXCLUSIVE TO THE 341X7 CAREER LADDER
PERFORMED BY 30 PERCENT OR MORE OF FIRST ENLISTMENT PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING
E16	PREPARE TECHNICAL ORDER SYSTEM PUBLICATION IMPROVEMENT REPORT AND REPLY FORMS (AFTO FORM 22)	31
F31	NORMALIZE COMMUNICATION SYSTEMS	83
F32	NORMALIZE STATUS AND COMMAND SYSTEMS	63
G16	MANUALLY PUNCH PAPER TAPES	48
H1	OPERATE AIR COMPRESSOR SYSTEMS	48
H2	OPERATE AUDIO CLOCKS	37
H6	OPERATE BUFFERS	52
H9	OPERATE EMERGENCY AIR CONDITIONING SYSTEMS	31
H10	OPERATE LAUNCH CONTROL SYSTEMS	65
H11	OPERATE LAUNCH ENABLE SYSTEMS	62
H12	OPERATE MAINTENANCE STATUS REPORTING SYSTEMS	33
H14	OPERATE MISSILE FAULT LOCATOR SYSTEMS	42
H16	OPERATE OR PERFORM EQUIPMENT EMERGENCY SHUTDOWN PROCEDURES	83
H17	OPERATE OR PERFORM EQUIPMENT SHUTDOWN PROCEDURES	94
H18	OPERATE OR PERFORM EQUIPMENT STARTUP PROCEDURES	92
H19	OPERATE PUBLIC ADDRESS (PA) SYSTEMS	44
H21	OPERATE SIGNAL DATA RECORDERS	69
H26	OPERATE VOICE REPORTING ASSEMBLY SYSTEMS	35
H27	OPERATE 465L SYSTEMS	79
H28	OPERATE 487L SYSTEMS	60
I33	ISOLATE MALFUNCTIONS ON PAPER TAPE PREPARATION UNITS	56
I34	ISOLATE MALFUNCTIONS ON PAPER TAPE UNITS	60
M51	WRITE FLOW CHARTS	31
N1	ISOLATE MALFUNCTIONS ON AIR COMPRESSOR SYSTEMS	35
N2	ISOLATE MALFUNCTIONS ON AUDIO CLOCKS	44
N3	ISOLATE MALFUNCTIONS ON AUDIO HAZARD ALARM SYSTEMS	50
N4	ISOLATE MALFUNCTIONS ON BATTERY POWER SUPPLIES	35
N5	ISOLATE MALFUNCTIONS ON BUFFERS	58
N6	ISOLATE MALFUNCTIONS ON CABLE PRESSURE ALARM SYSTEMS	31
N8	ISOLATE MALFUNCTIONS ON EMERGENCY AIR CONDITIONING SYSTEMS	38
N9	ISOLATE MALFUNCTIONS ON LAUNCH CONTROL SYSTEMS	77
N10	ISOLATE MALFUNCTIONS ON LAUNCH ENABLE SYSTEMS	73
N11	ISOLATE MALFUNCTIONS ON MISSILE FAULT LOCATOR SYSTEMS	44
N14	ISOLATE MALFUNCTIONS ON PA SYSTEMS	60
N15	ISOLATE MALFUNCTIONS ON SHOCK ISOLATOR SYSTEMS	52
N16	ISOLATE MALFUNCTIONS ON SIGNAL DATA RECORDERS	79
N17	ISOLATE MALFUNCTIONS ON SIMULATED FACILITY SYSTEMS	35
N18	ISOLATE MALFUNCTIONS ON UNIVAC 1532 INPUT OR OUTPUT CONSOLES	35
N21	ISOLATE MALFUNCTIONS ON VOICE MESSAGE SYNTHESIZERS	63
N22	ISOLATE MALFUNCTIONS ON VOICE REPORTING ASSEMBLY SYSTEMS	33
N23	ISOLATE MALFUNCTIONS ON 465L SYSTEMS	85
N24	ISOLATE MALFUNCTIONS ON 487L SYSTEMS	62
O6	RECONFIGURE MISSILE PROCEDURES TRAINERS	48
P9	ADJUST AUDIO CLOCKS	35
P21	ADJUST COMPUTER MEMORY BIT REGISTERS	38
P33	ADJUST DRIVE CURRENTS	46
P70	ADJUST PA SYSTEMS	52
P71	ADJUST PAPER TAPE PREPARATION UNITS	48
P97	ADJUST TAPE PUNCH UNITS	77
P98	ADJUST TAPE READERS	94
P99	ADJUST TAPE RECORDERS	37
P100	ADJUST TAPE TRANSPORTS OR HANDLERS	42
P102	ADJUST TELEPRINTERS	33
P109	ADJUST VOICE MESSAGE SYNTHESIZERS	54
P114	ADJUST 465L SYSTEMS	56
Q46	BENCH CHECK 465L SYSTEMS	37

TABLE 24

TASKS EXCLUSIVE TO THE 341X1 CAREER LADDER
PERFORMED BY 30 PERCENT OR MORE OF FIRST ENLISTMENT PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING
G120	SERVE AS INSTRUCTOR PILOT DURING SIMULATOR MISSIONS	41
R1	BRIEF STUDENTS OR PILOTS ON SIMULATED TRAINING MISSIONS	62
R2	BRIEF STUDENTS OR PILOTS ON STUDY REQUIREMENTS FOR NEXT SCHEDULED TRAINER FLIGHT	43
R6	CRITIQUE STUDENTS OR PILOTS ON TRAINING MISSIONS	59
R7	DEMONSTRATE INSTRUMENT TRAINER FLIGHT OPERATIONS OR MANEUVERS	58
R8	EVALUATE STUDENT OR PILOT PERFORMANCE	57
R9	FLY PROFICIENCY TRAINING MISSIONS ON INSTRUMENT TRAINERS	42
R10	INSTRUCT OR DEMONSTRATE AIR ROUTE TRAFFIC CONTROL (ARTC) PROCEDURES	46
R11	INSTRUCT OR DEMONSTRATE ALTITUDE CONTROL PROCEDURES	51
R12	INSTRUCT OR DEMONSTRATE APPLICATION OF FLIGHT MANUALS OR REGULATIONS TO INSTRUMENT OPERATIONS	45
R13	INSTRUCT OR DEMONSTRATE BASIC FLIGHT MANEUVERS	52
R14	INSTRUCT OR DEMONSTRATE BASIC INFORMATION ON NAVIGATIONAL AIDS SUCH AS LOCATION, RANGES OR IDENTIFIERS	58
R15	INSTRUCT OR DEMONSTRATE COCKPIT CHECK PROCEDURES	55
R16	INSTRUCT OR DEMONSTRATE CONFIDENCE MANEUVERS	49
R17	INSTRUCT OR DEMONSTRATE CONSOLE PANEL OPERATION TECHNIQUES OR PROCEDURES	51
R18	INSTRUCT OR DEMONSTRATE DEPARTURE PROCEDURES	59
R19	INSTRUCT OR DEMONSTRATE DME PROCEDURES	46
R20	INSTRUCT OR DEMONSTRATE ENROUTE DESCENT PROCEDURES	46
R21	INSTRUCT OR DEMONSTRATE FIX-TO-FIX NAVIGATION PROCEDURES	59
R22	INSTRUCT OR DEMONSTRATE FLIGHT DIRECTOR OPERATIONS	32
R24	INSTRUCT OR DEMONSTRATE GROUND CONTROLLED APPROACH (GCA) PROCEDURES	54
R26	INSTRUCT OR DEMONSTRATE GROUND OR AIRBORNE EQUIPMENT CHECKPOINT PROCEDURES	30
R27	INSTRUCT OR DEMONSTRATE HOLDING OR STACKING PROCEDURES	54
R28	INSTRUCT OR DEMONSTRATE ILS PROCEDURES	39
R29	INSTRUCT OR DEMONSTRATE INFLIGHT CHECK PROCEDURES	48
R30	INSTRUCT OR DEMONSTRATE INSTRUMENT CHECK PROCEDURES	46
R32	INSTRUCT OR DEMONSTRATE INSTRUMENT PANEL CROSS CHECK TECHNIQUES OR PROCEDURES	52
R34	INSTRUCT OR DEMONSTRATE MISSED APPROACH PROCEDURES	58
R35	INSTRUCT OR DEMONSTRATE PENETRATION AND APPROACH PROCEDURES	61
R36	INSTRUCT OR DEMONSTRATE RADAR APPROACH CONTROL (RAPCON) PROCEDURES	41
R37	INSTRUCT OR DEMONSTRATE RADIO FAILURE PROCEDURES	33
R38	INSTRUCT OR DEMONSTRATE RATED AND TIMED TURNS OR TURNS USING MAGNETIC COMPASSES	41
R43	INSTRUCT OR DEMONSTRATE TAKE-OFF PROCEDURES	55
R44	INSTRUCT OR DEMONSTRATE TOWER OR GROUND PROCEDURES	55
R45	INSTRUCT OR DEMONSTRATE UNUSUAL ALTITUDE RECOVERIES	54
R47	INSTRUCT OR DEMONSTRATE VERY HIGH FREQUENCY OMNIRANGE (VOR) PROCEDURES	49
R50	INSTRUCT STUDENTS OR PILOTS ON SETTING UP OPERATION OR USE OF INSTRUMENT TRAINERS	48
R51	MAKE STUDY REFERENCE RECOMMENDATIONS FOR IMPROVING STUDENT OR PILOT PERFORMANCE	39
R53	PREPARE STUDENT GRADE REPORTS	42
R55	RESEARCH AIR FORCE REGULATIONS OR MANUALS	46
R56	RESEARCH COMMAND REGULATIONS OR MANUALS	39
R57	RESEARCH FEDERAL AVIATION AGENCY (FAA) REGULATIONS	45
R58	RESEARCH FLIPS	43

COMPARISON OF AFR 39-1 SPECIALTY DESCRIPTIONS

In evaluating the AFR 391 specialty descriptions of each ladder in the Training Devices career field, it became apparent that similar wording was being used to describe the duties and responsibilities of each specialty. As illustrated in Table 25, each paragraph in the Duties and Responsibilities section of the 3-/5-skill level specialty descriptions for each career ladder begin with essentially the same key italicized wording. The Specialty Summary is also essentially the same for each of the 3-/5-skill level descriptions. Although the paragraphs are not as closely aligned in the 7-skill level specialty descriptions, Table 25 shows that they too, are very similar in wording. Only the type of equipment maintained or operated changes from one description to the next.

The fact that the AFR 39-1 specialty descriptions for the ladders in the Training Devices career field describe similar duties and responsibilities is not to imply that the jobs are essentially the same. Rather the question should be raised as to whether these jobs should be classified as seven distinct specialties, each requiring an AFSC, or whether there should be fewer specialties within the career field. As these descriptions are currently written, there does not appear to be sufficient differentiation in job functions between the specialties to justify separate AFSCs. If these career ladders are to remain separate, specialty descriptions need to be written that emphasize the distinct and unique duties and responsibilities of each career ladder that were pointed out in the Occupational Survey Report for each of these specialties.

This similarity in job function displayed in the AFR 39-1 specialty descriptions has already been illustrated in the career field structure and the analysis of task performance. It is also evident in the construction of Specialty Training Standards.

TABLE 25

KEY ITALICIZED WORDING FROM THE AFR 39-1 SPECIALTY DESCRIPTIONS FOR EACH CAREER LADDER IN THE AFS 341XX TRAINING DEVICES CAREER LADDER

3-/5-SKILL LEVEL DESCRIPTIONS	341X1	341X2	341X3	341X4	341X5	341X6	341X7
PARAGRAPH A	PERFORMS MAINTENANCE	PERFORMS PREVENTIVE MAINTENANCE	PERFORMS PREVENTIVE MAINTENANCE	PERFORMS PREVENTIVE MAINTENANCE	PERFORMS PREVENTIVE MAINTENANCE	PERFORMS PREVENTIVE MAINTENANCE	PERFORMS PREVENTIVE MAINTENANCE
PARAGRAPH B	INSTALLS AND REPAIRS	INSTALLS, ADJUSTS, AND MODIFIES	INSTALLS, ADJUSTS, AND MODIFIES	INSTALLS, ADJUSTS, AND MODIFIES	INSTALLS, MODIFIES, AND REPAIRS	INSTALLS, TROUBLESHOOTS, REPAIRS AND MODIFIES	REPAIRS, ADJUSTS, AND MODIFIES
PARAGRAPH C	OPERATES AND INSTRUCTS	OPERATES	OPERATES	OPERATES	OPERATES	OPERATES	OPERATES
PARAGRAPH D	SUPERVISES	SUPERVISES	SUPERVISES	SUPERVISES	SUPERVISES	SUPERVISES	SUPERVISES
7-SKILL LEVEL DESCRIPTIONS							
PARAGRAPH A	ADVISES ON TECHNICAL PROBLEMS OF INSTALLATION, OPERATION, AND REPAIR	INSPECTS AND MAINTAINS	INSPECTS AND MAINTAINS	INSPECT AND MAINTAINS	ADVISES ON TECHNICAL PROBLEMS OF INSTALLATION, OPERATION, AND REPAIR	ADVISES ON TECHNICAL PROBLEMS OF INSTALLATION, OPERATION, AND REPAIR	INSPECTS AND MAINTAINS
PARAGRAPH B	INSTALLS, REPAIRS, OVERHAULS, AND MODIFIES	INSTALLS, REPAIRS, TROUBLESHOOTS, OVERHAULS AND MODIFIES	TROUBLESHOOTS, AND REPAIRS	TROUBLESHOOTS, AND REPAIRS	INSTALLS, TROUBLESHOOTS, REPAIRS, AND MODIFIES	INSTALLS, TROUBLESHOOTS, REPAIRS, ADJUSTS, AND MODIFIES	INSTALLS, REPAIRS, TROUBLESHOOTS, OVERHAUL AND MODIFIES
PARAGRAPH C	INSPECTS	OPERATES	MODIFIES AND INSTALLS	INSTALLS, ADJUSTS, AND MODIFIES	INSPECTS	INSPECTS	OPERATES
PARAGRAPH D	OPERATES	SUPERVISES	SUPERVISES	OPERATES	OPERATES	OPERATES	SUPERVISES
PARAGRAPH E	SUPERVISES		SUPERVISES	SUPERVISES	SUPERVISES	SUPERVISES	

COMPARISON OF THE TRAINING DEVICES SPECIALTY TRAINING STANDARDS (STS) FOR SIMILARITIES AND DIFFERENCES

A comparison of similarities and differences of STS tasks and knowledges across all ladders of the Training Devices career field was also accomplished. Since a comparison of each STS to the survey data was conducted and reported previously in the career ladder Occupational Survey Reports, this section will not readdress the findings.

Table 26 lists the similarities in the STS paragraphs for the various Training Devices career ladders. As is illustrated, the first 10 paragraphs are essentially the same for each specialty. Further similarities can also be noted, especially among the flight simulator and navigation/tactics career ladders. It appears that all the specialties possess certain common areas in which similar training is required, thus providing further evidence to substantiate the need for consolidation of some of the AFSCs in this career field.

Of course, each career ladder STS contains tasks and knowledges unique to that specialty. It is not within the scope of this report to determine whether these tasks and knowledges are appropriate for inclusion in the STS or whether they would be more appropriate in an AF Form 797, Job Proficiency Guide. That is a decision for training managers to make in cooperation with the major using agencies of Training Devices personnel. However, there is little question that like the AFR 39-1 specialty descriptions, the STS's within this career field possess a great deal of similarity in their training requirements.

TABLE 26

COMPARISON OF SPECIALTY TRAINING STANDARDS BY TASKS AND KNOWLEDGE PARAGRAPHS FOR CAREER LADDERS IN THE AFS 341XX TRAINING DEVICES CAREER FIELD

TASK AND KNOWLEDGE PARAGRAPHS	STS PARAGRAPH NUMBER						
	341X1	341X2	341X3	341X4	341X5	341X6	341X7
CAREER LADDER PROGRESSION	1	1	1	1	1	1	1
SECURITY	2	2	2	2	2	2	2
TRAINING DEVICES SAFETY	3	3	3	3	3	3	3
TECHNICAL ORDERS	4	4	4	4	4	4	4
SUPPLY RESPONSIBILITIES	5	7	5	5	5	5	5
SUPERVISION AND TRAINING	6	5	6	6	6	6	6
MAINTENANCE MANAGEMENT, INSPECTION SYSTEMS AND FORMS	7	6	7	7	7	7	7
CLASS I TRAINER EQUIPMENT INVENTORY, UTILIZATION, AND STATUS REPORTING	8	8	8	8	8	8	8
TOOLS AND TEST EQUIPMENT	9	9	9	9	9	9	10
ELECTRONIC PRINCIPLES	10	10	10	10	10	10	9
AERODYNAMICS OF FLIGHT	11	-	11	11	-	-	-
AIRCREW TRAINING DEVICES (ATD) CONFIGURATION	-	-	12	12	11	11	12*
ATD CIRCUITS AND COMPONENTS	22/23	11	13	13	12	13	-
MAINTENANCE OF ATDs	26	18	-	19	15	16	-
OPERATE ATD CONSOLES	15	19	15	16	14	15	-

* MISSILE PROCEDURES TRAINER CONFIGURATION

TOTAL NUMBER OF STS PARAGRAPHS PER LADDER						
341X1	341X2	341X3	341X4	341X5	341X6	341X7
26	19	17	19	15	16	72

COMPARISON OF CURRENT SURVEYS TO THE PREVIOUS SURVEYS FOR AFSCs 341X3, 341X4, 341X5, and 341X6

In March 1974, an Occupational Survey Report was published covering the AFS 342X0 Flight Simulator, and AFS 343X0 Navigation/ Bomb/ Tactics Trainer career ladders. In April 1976, these two specialties were split to form the Analog and Digital Flight Simulator, and the Analog and Digital Navigation/Tactics Training Devices career ladders. Since this reorganization has made individual survey comparison very difficult, the four current surveys were compared as one to the previous survey and is included in this addendum.

Sample sizes for both surveys were representative. There were 1,166 respondents representing 67 percent of the career ladders' population in the previous survey. There were 1,334 respondents from the four AFSCs in the current survey, or 76 percent of the total assigned population.

Although there is little resemblance in career ladder structure between the two surveys, one factor has remained stable over time. In both studies, personnel tended to group by the type of equipment operated or maintained. In the first survey, it was by type of aircraft simulator. In the current survey, it was by computer type (analog or digital) of the simulator system. This tendency to group by computer type was also noted in the 1974 survey. It was realized then that as the fully integrated flight and navigation/tactics mission simulators entered the Air Force inventory the distinction between the separate jobs of the flight simulator personnel and the navigation/tactics trainer personnel would become blurred. This has indeed occurred as shown by survey results.

While the job structure appears to have changed through changes in equipment, the job satisfaction levels and reenlistment intentions of these airmen have remained relatively the same. Job satisfaction levels and reenlistment intentions were high in the first survey, and if anything, may be higher in the current survey.

Overall, the analysis of these career ladders over time seems to indicate that the job structure has changed and should continue to change as new and more sophisticated simulators become operational. At the same time, however, the jobs have remained and should continue to remain challenging and satisfying to the airmen that perform them.

SUMMARY OF RELATIVE JOB SATISFACTION

Table 27 displays the various percentages by career ladder of the responses to questions regarding job interest and perceived utilization of talents and training. As in the Occupational Survey Reports for each specialty, the percentages of responses from individuals in mission equipment maintenance AFSCs surveyed in 1977, are included for purposes of comparison.

Only the AFS 341X1 career ladder displayed lower job interest or perceived utilization of talents and training than the responses in the comparative sample. It is interesting to note that this career ladder, while classified as a maintenance specialty, actually has the majority of its personnel performing non-maintenance type jobs. It is not uncommon to find personnel that have been identified and trained for one type of job but performing in another to be dissatisfied with their work.

On the other hand, AFSCs 341X4, 341X6, and 341X7 are considerably more satisfied with their jobs than their career field contemporaries or their counterparts surveyed in 1977. No explanation for this can be given although, they do maintain newer and more sophisticated electronic equipment and perform a higher number of more difficult tasks in doing so.

Table 28 presents the responses to job interest and perceived utilization of talents and training of the first enlistement group for each career ladder. Results are similar to those described for the career ladder comparisons.

TABLE 27

EXPRESSION OF JOB INTEREST AND PERCEIVED UTILIZATION OF TALENTS AND TRAINING
BY 341XX CAREER LADDER GROUPS
(PERCENT RESPONDING)

	341X1 (N=185)	341X2 (N=137)	341X3 (N=483)	341X4 (N=415)	341X5 (N=159)	341X6 (N=277)	341X7 (N=96)	COMPARAT AFSCs**
I FIND MY JOB								
NO REPLY	1	*	*	*	0	*	0	0
EXTREMELY DULL TO FAIRLY DULL	17	12	10	9	11	8	8	13
SO-SO	15	14	14	6	11	5	9	16
FAIRLY INTERESTING TO EXTREMELY INTERESTING	67	74	76	85	78	87	83	71
MY JOB UTILIZES MY TALENTS								
NO REPLY	0	1	*	*	0	1	1	0
NOT AT ALL OR VERY LITTLE	29	21	19	17	18	18	12	24
FAIRLY WELL TO VERY WELL	60	70	69	69	71	68	74	66
EXCELLENTLY TO PERFECTLY	11	8	12	14	11	13	13	10
MY JOB UTILIZES MY TRAINING								
NO REPLY	*	*	*	*	0	0	0	0
NOT AT ALL OR VERY LITTLE	32	19	18	17	25	29	14	23
FAIRLY WELL TO VERY WELL	58	74	70	71	65	64	69	65
EXCELLENTLY TO PERFECTLY	10	7	12	12	10	7	17	12

* INDICATES LESS THAN ONE PERCENT

** BASED ON A SUMMARY OF OVER 21,800 RESPONSES FROM MISSION EQUIPMENT MAINTENANCE AFSCs SURVEYED IN 1977

TABLE 28

EXPRESSION OF JOB INTEREST AND PERCEIVED UTILIZATION OF TALENTS AND TRAINING
BY FIRST ENLISTMENT GROUPS IN THE 341XX CAREER FIELD
(PERCENT RESPONDING)

	1-48 MONTHS TOTAL ACTIVE MILITARY SERVICE							
	341X1 (N=69)	341X2 (N=53)	341X3 (N=217)	341X4 (N=127)	341X5 (N=55)	341X6 (N=100)	341X7 (N=52)	COMPARATIVE AFSCs**
I FIND MY JOB								
NO REPLY	1	2	*	0	0	0	0	0
EXTREMELY DULL TO FAIRLY DULL	19	17	10	6	13	9	11	17
SO-SO	16	11	15	4	13	3	12	21
FAIRLY INTERESTING TO EXTREMELY INTERESTING	64	70	75	90	74	88	77	62
MY JOB UTILIZES MY TALENTS								
NO REPLY	0	2	0	1	0	0	2	0
NOT AT ALL OR VERY LITTLE	35	26	22	19	18	19	19	32
FAIRLY WELL TO VERY WELL	59	65	67	72	71	70	68	64
EXCELLENTLY TO PERFECTLY	6	9	11	8	11	11	11	4
MY JOB UTILIZES MY TRAINING								
NO REPLY	1	0	0	0	0	0	0	0
NOT AT ALL OR VERY LITTLE	30	17	22	20	24	30	19	26
FAIRLY WELL TO VERY WELL	60	79	69	73	69	68	66	67
EXCELLENTLY TO PERFECTLY	9	4	9	7	7	2	15	7

* INDICATES LESS THAN ONE PERCENT

** BASED ON A SUMMARY OF OVER 9900 RESPONSES FROM FIRST ENLISTMENT PERSONNEL IN MISSION EQUIPMENT MAINTENANCE AFSCs SURVEYED IN 1977

A CORRELATION OF CAREER FIELD TRENDS WITH OCCUPATIONAL SURVEY RESULTS

At this time, there are a number of independent factors bearing on this career field that have created a certain amount of turmoil and uncertainty among the personnel assigned to operate and maintain Air Force training devices. This section will review the principle highlights of the survey results for each career ladder and discuss them in relation to the current trends affecting the career field.

In the case of AFS 341X1 Instrument Trainer personnel. the majority were found to be performing primarily as instructor operators and not as equipment maintainers. Although they receive six weeks of resident electronic principles training, they show the least utilization of this training of any Training Devices career ladder as reported in the Occupational Survey Report, Summary for AFSCs Trained In Electronic Principles at Chanute AFB, published in February 1978. The inability of AFS 341X1 personnel to fully utilize their electronic principles training does not show proper utilization of training resources. In addition, the introduction of the Undergraduate Pilot Training - Instrument Flight Simulator has severly impacted on jobs performed by these airmen. Currently maintained by either contractor or AFS 341X4 personnel, and operated by either contractor or civilian federal employees, the instrument flight simulator does not require Instrument Trainer personnel. It has also severely reduced the use of the old instrument trainers which do require them. Discussions with personnel in the field indicate the instrument trainers will, in the near future, be either replaced by a new digital trainer maintained by AFS 341X4 personnel and operated by a rated pilot or just abandoned altogether. In any case, it appears there will be very little left on which to justify a separate career ladder for this specialty.

AFS 341X2 Defensive System Trainer personnel displayed a high degree of task commonality with other AFSCs operating and maintaining aircrew training devices, especially with AFS 341X6 Digital Navigation/ Tactics Training Devices personnel. Although there is insufficient data for recommending combination of this specialty with another AFSC, consideration should be given to including this career ladder in any discussions involving reorganization of the aircrew training devices career ladders (AFSCs 341X3, 341X4, 341X5, and 341X6) since the defensive system trainers are also aircrew training devices.

As with AFS 341X1 personnel, airmen assigned as AFS 341X3 Analog Flight Simulator personnel face an uncertain future. As the analog flight simulators are replaced with the more sophisticated digital mission simulators, the requirement for these individuals will steadily decrease. This is currently reflected in the projected resident course load of only 20 students during FY 79 and none for FY 80. If the career ladder is programmed for elimination, it is best to consider now, where in the classification system these airmen should be placed and whether training prior to reclassification will be necessary. Conversations with personnel in the field inciate an awareness of the situation.

A solution probably best for moral would be a classification change as soon as possible and a manning of 341X3 positions by special experience identifier (SEI) until the positions are deleted.

The situation looks much better for airmen in the AFS 341X4 Digital Flight Simulator career ladder. As the new digital mission simulators enter the Air Force inventory, the manning of this specialty will increase. Since this career ladder will soon be the largest specialty in the career field, it should serve as the basic ladder for any classification action that might result in specialty shredouts.

Like the analog flight simulators, analog navigation/tactics training devices are rapidly being replaced by newer digital systems. Consequently, the requirement for AFS 341X5 Navigation/Tactics Training Devices personnel will also decrease. Only 11 are projected for training during the FY 79-80 time frame. Any decisions made concerning the AFS 341X3 career ladder would also apply to this specialty.

The manning of the AFS 341X6 Digital Navigation/Tactics Training Devices career ladder should also increase as the new digital training devices replace the old analog systems. However, in April 1977, at the Career Field 341XX Review Conference held at Chanute AFB, Ill., representatives from TAC recommended that AFSCs 341X4 and 341X6 be combined because of the high similarity in the utilization of these personnel. Survey data supports this recommendation. The tasks performed and the percent of time spent on those tasks was so similar that the two AFSCs could not be distinguished separately in the career field job cluster analysis. Identification of job types within each AFSC required separate cluster diagrams. This concept is also supported by conversations with field supervisors who readily admit that they often use AFS 341X4 and 341X6 personnel interchangeably.

AFS 341X7 Missile Trainer personnel, while not performing maintenance on air crew training devices, still possess a great deal of task commonality with the other ladders in the career field, especially those maintaining digital computer systems. Although there is insufficient evidence to suggest this career ladder could be combined with another aircrew training devices career ladder, survey data does support this specialty as a shredout of a more broadly named digital training devices AFSC that would also include AFSCs 341X2, 341X4, and 341X6.

There is little question that with over 200 new simulators and training devices on order and scheduled to enter the inventory over the next four years that the Training Devices career field is in a rapid state of change. As electronic technology has advanced and new training devices replace the old, the differences in the jobs performed within the various career ladders have become less distinguishable. The time for a hard look at restructuring this career field has arrived. Career field managers should review the situation, apply the information available to them, and resolve the existing problems as soon as possible so the high moral, job satisfaction, and job performance of the airmen in the Training Devices career field will be maintained.

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DIGITAL FLIGHT SIMULATOR CAREER LADDER AFSCS 34134, 34154 AND 3--ETC(U)
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IMPLICATIONS

In the analysis of the survey data, it was found that the Training Devices career field is composed, for the most part, of fairly homogeneous, reasonably satisfied individuals whose job is to operate and maintain aircrew and missile training devices. There is a high degree of commonality across all the career ladders in the areas of performing preventive maintenance, operating training devices, and general malfunction isolation procedures. There are also distinguishing differences among the career ladders, especially in the areas of performing instructor operator duties and in the operation and maintenance of equipment unique to each career ladder. The implications of such findings are many and varied.

Certainly, there is sufficient occupational survey data, coupled with agreement among major users, to recommend consolidation of the AFS 341X4 and AFS 341X6 career ladders. The future of the jobs in these specialties is assured, and as more and more training devices utilizing digital computers enter the Air Force inventory, the necessity of having knowledge in this newer technology in order to adequately function at the 9-skill level will surely be an advantage to the individuals now maintaining digital equipment. What then of the other airmen in the career field? As the analog training devices are replaced by digital systems, what will happen to these personnel? During this transition period, should the AFS 341X1, AFS 341X3, AFS 341X5 remain distinct specialties until the changeover is complete? Should all the aircrew training devices be combined now and instrument flight and analog simulator positions identified through either a specialty shredout or a special experience identifier (SEI)? Is the defensive system trainer an aircrew training device and is there enough similarity in the jobs performed by AFS 341X2 airmen to consider this AFSC in any plans concerning the ladders maintaining aircrew training devices? Is the Missile Trainer career ladder really so different and unique that it should remain a separate AFSC; or should it be a specialty shredout of a digital training devices career ladder; or could the job be performed by airmen from an aircrew training devices career ladder?

There is little doubt that much time and considerable effort on the part of everyone concerned with this career field will be needed to answer these questions. A comprehensive plan to provide stability and order to personnel management during this period of equipment transition must be formulated and implemented as soon as possible to minimize personnel turmoil, insure that the technical training center will provide the students with the quality training necessary to perform the job in the field, and to especially maintain the high degree of job satisfaction currently exhibited by the airmen now serving in the Training Devices career field.