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ABSTRACT

The interactive effects of Air Force occupational specialty and personnel characteristics on predictions of tenure for first-term enlisted airmen were studied. Historical data files were compiled on 280,039 Air Force enlistees. Two classes of variables were extracted for the sample: personnel characteristics including age, sex, race, educational background, aptitude scores, and occupational assignments identifying the enlistee's Air Force specialty code (AFSC). Two tenure criteria were developed to reflect the number of months served (up to 36) and a dichotomous variable coded 1 if the airman was still in the service after 36 months; a zero was used otherwise. Four multiple linear regression models were developed to examine the occupational and personnel correlates associated with airmen tenure. Results indicated that attrition rates differed markedly among AFSCs. These differences were attributed both to background and educational characteristics and to the unique aspects of individual AFSCs. The nature of the differences were interactive rather than additive. A general statistical model, designed to predict for all specialties combined, was found to be much less accurate than were specialty-specific equations. (Ten pages of attrition data are appended.) (YLB)

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AIR FORCE HUMAN RESOURCES LABORATORY

OCCUPATIONAL AND PERSONNEL CORRELATES OF FIRST-TERM ENLISTED TENURE IN THE AIR FORCE

By

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Final Report

AIR FORCE SYSTEMS COMMAND
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Manpower and Personnel Division

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Traditionally, researchers concerned with enlisted airmen separation and attrition have focused primarily on personnel characteristics associated with those losses. In contrast, studies from the civilian sector have routinely examined the effects of both personnel characteristics and occupational data associated with turnover rates. This research was designed to assess the interactive effects of Air Force occupational specialty and personnel characteristics on predictions of tenure for first-term enlisted airmen.

Item 20 (*Continued*)

A set of multiple linear regression equations was developed to examine the occupational and personnel correlates associated with airmen tenure. A sample of 280,039 airmen provided the data base from which these models were generated. Two tenure criteria were developed to reflect (a) the number of months served (up to 36) and (b) a dichotomous variable coded 1 if the airman was still in the service after 36 months and 0 otherwise. The first prediction model identified each of 186 Air Force enlisted specialties. A second model consisted of personnel variables such as age, sex, aptitude, race, and family information. The third model consisted of an equation containing the personnel characteristic variables plus the Air Force enlisted specialty variables. A final model contained each personnel variable interacting with each specialty variable.

Predictions of both tenure criteria were highly significant based on the specialty model as were those based on the personnel model. A test of the third model against the fourth model revealed that predictions of tenure are differentially influenced by the combination of personnel characteristics specific to each specialty. This finding suggests that tenure predictions should be made on an individual occupational basis considering each specialty as a separate predictive framework. A follow-on analysis substantive predictive efficiency was associated with the occupational model as well as with the personnel characteristics model. Demonstrations of the prediction system applied to a 5% random sample of airmen were also included for consideration by personnel selection and assignment managers to emphasize the effects that occupational assignment strategies would have on increasing airmen tenure in the first term.

SUMMARY

Objective

The objective was to measure the effects of occupational assignment and certain personnel characteristics on first-term enlisted tenure in the Air Force.

Background/Rationale

Research and development (R&D) on premature attrition and discharge from the military services has typically concentrated on the identification of those personnel characteristics that appear to predispose certain enlistees toward early loss from the service. The R&D findings typically have been used to establish selection strategies aimed at denying enlistment to applicants who exhibit the characteristics associated with high probabilities of loss—generally, the young in age with low levels of aptitude and education.

To the extent that occupational assignments and their interactions with personnel characteristics are better predictors of first-term enlisted tenure, such information might be used prior to career-field assignments to reduce first-term attrition. The Person-Job-Match system currently operational in the Air Force could be expanded to include a suitable differential-assignment algorithm based on these findings.

Approach

Historical data files were compiled on 280,039 Air Force enlistees. Two classes of variables were extracted for the sample: (a) personnel characteristics including age, sex, race, educational background, and aptitude scores, and (b) occupational assignments identifying the enlistee's Air Force specialty code (AFSC). Two tenure criteria were used: (a) the number of months served in the first 3 years of enlistment, and (b) an in/out variable coded 1 if the enlistee remained in the service for 36 months and coded 0 if the enlistee was categorized as a premature loss prior to the 36th month. Tenure predictions, based on the personnel and occupational data, were developed using multiple linear regression techniques.

Specifics

Four multiple linear regression models were applied to the tenure criteria: (a) A 186-variable equation that included only occupational membership data, (b) a 27-variable personnel equation based on the recruits' aptitudes, education, and other biographical data, (c) a 213-variable occupation plus personnel-data equation, and (d) a 5,208-variable occupation-by-personnel-data interaction equation.

Significant differences were found among occupations in terms of the proportions of enlistees who were lost prior to 36 months of service. Attrition rates varied from 2.76% for flight engineers to 84.36% for linguists, with an average of 35.88%. Significant differences were also found among personnel characteristics associated with premature loss. Occupational assignments interacted significantly with certain personnel characteristics with respect to tenure.

To demonstrate further the effects of occupational assignments, predicted tenure probabilities employing the binary criterion were generated for airmen in a representative 5% random sample. These were compared with the proportion of actual losses in each predicted score category. The results indicated practical as well as statistically significant differences. This procedure was also used to simulate the effects of holding all personnel characteristics constant in the prediction of tenure for each of the 186 AFSCs. The average predicted tenure rate was then compared to the actual rate for each AFSC. Even when differences in personnel characteristics were controlled, the AFSCs demonstrated wide variation in tenure rates, emphasizing the significance of occupational assignment in determining length of tenure.

Conclusions/Recommendations

This study focused on determining the extent to which tenure, defined as remaining in the service for at least 3 years, differed across occupational categories and interacted with personnel characteristics such as age, sex, race, educational background, and aptitude scores.

The results indicate that attrition rates differ markedly among AFSCs. These differences were attributed both to the background and educational characteristics of the recruit and to the unique aspects of individual AFSCs. The nature of the differences were interactive rather than additive. A general statistical model designed to predict attrition for all specialties combined was found to be much less accurate than were specialty-specific equations.

The operational implication of these findings is that first-term enlisted attrition would be reduced if tenure predictions from personnel characteristic data were made on an occupational-specific basis, one equation for each AFSC, rather than on a general equation applicable for all specialties combined. Present selection and assignment procedures should be redesigned to include a more definitive treatment of occupational standards for specific career ladders. These could be implemented by establishing minimum qualifying scores on the tenure index or by expanding the Person-Job-Match algorithm to include tenure predictions at the occupational level. Either approach would be economical to implement since the predictor data base (aptitude, educational level, high school courses, age, etc.) is already being collected and maintained at the entry point.

PREFACE

This research was conducted under Project 7734, Development of Methods for Describing, Evaluating, and Structuring Air Force Occupations. The study was initiated under Work Unit 77340507, AFSC Correlates of First-Term Tenure, and completed under Work Unit 77340822, Personnel Factors Related to Attrition and Retention. Research conducted for this study specifically addressed tenure rates and personnel variables associated with Air Force occupational specialties. It is part of a larger effort to improve the military personnel acquisition and distribution system.

Recognition must be given to Dr. Raymond E. Christal, Dr. Joe Ward, Jr., and Dr. Robert Bottenberg for their technical advice in the direction and accomplishment of this study. Appreciation is also extended to Mr. Charles Greenway and A1C David Brewer for their part in designing and conducting the numerous data analyses essential for this research effort.

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OCCUPATIONAL AND PERSONNEL CORRELATES OF FIRST-TERM ENLISTED TENURE IN THE AIR FORCE

I. INTRODUCTION

Enlisted attrition research in the military services traditionally has concentrated on the determination of personnel characteristics which predispose certain enlistees toward premature loss prior to completion of obligated service. Typically, applicants who were younger and had lower aptitude scores and less formal education exhibited a higher probability of loss due to misconduct, failure to adapt, unfitness, or poor performance. These general trends have been demonstrated consistently for recruit populations entering the Air Force (Carpenter & Christal, 1973; Fisher, Ward, Holdrege, & Lawrence, 1960; Flyer, 1959, 1963; Gordon & Bottenberg, 1962; Guinn, 1973), the U.S. Army (Erwin & Herring, 1977; Klieger, Dubuisson, & deJung, 1961; Shoemaker, Drucker, & Kriner, 1974), the Navy and the Marine Corps (Goodstadt & Glickman, 1975; Plag & Goffman, 1966; Sands, 1977, 1978).

Knowledge of various pre-enlistment characteristics has been used to monitor the quality of personnel input over time (Vitola, Mullins, & Brokaw, 1974) and to develop revised selection standards aimed at the enlistment of those applicants who did not have a potential predisposition toward attrition (Guinn, Johnson, & Kantor, 1975; Sands, 1976; Vitola, Guinn, & Wilbourn, 1977).

With the advent of computerized procedures for enlistment processing (Hendrix, Ward, Pina, & Haney, 1979; Ward & Haltman, 1975; Ward, Haney, Hendrix, & Pina, 1978), a more sophisticated treatment of pre-enlistment data can be made, namely in the area of differential occupational assignments. However, such applications depend on the extent to which occupational differences exist and whether personnel characteristics interact with occupational assignments to influence the tenure of airmen in the first term.

The objective of the present study was to explore the effects of occupational assignment on first-term enlisted tenure in the Air Force. Earlier research had documented the influence of background, education, and aptitude factors as predisposing correlates of premature attrition. This study focused on determining whether tenure, defined as remaining in the service for at least 3 years, differed across occupational categories and whether such differences, if any, were solely attributable to the quality of personnel assigned to those occupations.

The 3-year time frame for assessing tenure was chosen for several reasons. The 3-year mark was considered a reasonable tradeoff between the requirement for a maximum amount of on-the-job experience and losses attributable to organizational policy. The intent of the study was to examine occupational effects related to tenure and premature attrition; therefore, losses in Basic Military Training (BMT) were not considered to be representative of an on-the-job environment but rather reflected the inability of recruits to adapt to military life. Consequently, basic training losses were excluded from the study. While technical training schools did include some characteristics of the job setting, the length of most schools ranged from a few weeks to a year or more. Including the time for BMT and technical training, at the 3-year point most airmen still in service had roughly 2 years of work experience in their occupational specialty. The incidence of early releases due to Air Force policy decisions increase substantially in the fourth year of enlistment. For example, officially approved early releases are granted for education and for Christmas and also when airmen returning from overseas have an insufficient amount of obligated service time remaining for reassignment to a new duty station. The 3-year time frame, then, allowed a large amount of enlistee work experience to be considered and represented a natural breakpoint for the amortization of recruitment and training costs.

To meet the study objective, the following specific research questions were examined.

1. To what extent do personnel assigned to various occupational specialties have different propensities for premature attrition? The principal concern here was to evaluate simple differences among occupations in the propensity of assigned personnel to remain in or attrit from military service.

2. To what extent do personnel with different background, education and aptitude characteristics differ in their predisposition for premature attrition? This information would serve as a benchmark for evaluating the unique effects of occupational assignment on enlisted tenure.

3. To what extent do occupational and personnel variables interact to determine premature attrition? At issue is whether or not the same personnel prediction model is applicable to all Air Force occupational specialties or whether separate models are required to enhance predictive accuracy.

4. To what extent does occupational membership contribute to the prediction of tenure over and above the personnel characteristics?

5. To what extent do personnel characteristics contribute to the prediction of tenure over and above the occupational membership variables?

The latter two issues concern whether or not effects of either the personnel characteristics or occupational membership contribute uniquely to the prediction of tenure in the context of the other variables.

II. METHOD

Subjects

All of the enlisted accessions to the Air Force during the period 1 January 1970 to 3 June 1973 were identified for the study. Of 302,926 airmen entering service, records for 22,887 personnel categorized as discharged from BMT, prisoners, patients, or otherwise unclassified were removed from the sample, leaving 280,039 airmen with valid records for use in the analysis.

Variables

Two classes of predictor variables were defined. Personnel variables included age, grade, sex, marital status, number of dependents, aptitude scores as measured by the Armed Services Vocational Aptitude Battery (ASVAB),[1] educational level, and high school course history. The second type consisted of occupational membership variables identifying the Air Force Specialty Code (AFSC) to which the person had been assigned on entry into service. For each case, AFSC group membership was coded as "1" if assigned to a given specialty, "0" otherwise. In all, 186 separate specialties were defined in the analysis.

Tenure versus premature attrition from the service (i.e., prior to 36 months of active duty) served as the first dependent variable. The measure consisted of a simple dichotomous variable coded "1" if the enlistee remained in service for 36 months and "0" if classified as a premature loss. A second dependent measure was defined as the number of months, up to a maximum of 36, that the enlistee had served in the Air Force.

Design

Descriptive data on the sample were obtained initially to characterize subjects on each of the primary predictor and criterion variables. As a means of testing various hypotheses about relationships between the predictor and dependent variables, a number of multiple linear regression models (Bottenberg & Ward, 1963; Ward & Jennings, 1973) were constructed for each of the two criterion variables (see Table 1). The first model contained 186 categorical variables representing each of the separate occupational specialties (S). The second model was composed of 27 personnel and background variables (P) which have been found, based on previous research, to be indicative of attrition. Included in this model were the primary variables of aptitude, race, gender, age, family status, and education information, together with more complex functional forms to account for possible curvilinear effects. The third and fourth models represented two variations on the use of the combined personnel and occupational data. Model three was a non-interacting main effects model wherein the occupational group membership variables were combined in additive form with the personnel variables (P + S). The fourth model represented the variables in an interaction form (P × S). Basically, this model permitted the coefficients for the set of personnel variables to differ for each separate occupation. The interaction model implicitly

[1]The ASVAB yields four aptitude composites (Mechanical, General, Administrative, and Electronics) and an overall Armed Forces Qualification Test (AFQT) score. Each is recorded as a percentile score.

included each of the preceding main effects models.

Table 1. **Specifications of Multiple Linear Regression Equations**

1. **Occupational Specialty (AFSC) Model** (S)

$$Y = w_0U + w_1S^{(1)} + w_2S^{(2)} + \ldots + w_{186}S^{(186)}$$

where Y is one of two tenure criteria, w is a least squares regression weight, S is a dichotomous variable identifying an AFSC, and U is a unit vector.

2. **Personnel Characteristics Model** (P)

$$Y = w_0U + w_1P^{(1)} + w_2P^{(2)} + \ldots + w_{27}P^{(27)}$$

where Y is one of two tenure criteria, w is a least squares regression weight, P is a personnel variable, and U is a unit vector.

3. **Personnel and Occupational Main Effects Model** (P + S)

$$Y = w_0U + w_1P^{(1)} + w_2P^{(2)} + \ldots + w_{27}P^{(27)} + w_{28}S^{(1)} + \ldots + w_{213}S^{(186)}$$

where Y is one of two tenure criteria, w is a least squares regression weight, the P and S terms are as just described, and U is a unit vector.

4. **Fully Interacted Personnel by Occupation Model** (P × S)

$$\begin{aligned} Y = {} & wS_{,1}U^{(1)} + w_{1,1}P^{(1)}S^{(1)} + w_{2,1}P^{(2)}S^{(1)} + \ldots + w_{27,1}P^{(27)}S^{(1)} \\ & + wS_{,2}U^{(2)} + w_{1,2}P^{(1)}S^{(2)} + w_{2,2}P^{(2)}S^{(2)} + \ldots + w_{27,2}P^{(27)}S^{(2)} + \ldots \\ & + wS_{,186}U^{(186)} + w_{1,186}P^{(1)}S^{(186)} + w_{2,186}P^{(2)}S^{(186)} + \ldots + w_{27,186}P^{(27)}S^{(186)} \end{aligned}$$

where Y is one of two tenure criteria, w is a least squares regression weight, P(i)S(j) is an interaction term for i = 1, 27 personnel characteristics for each of j = 1, 186 occupational specialties, and U is a unit vector.

Note: Definitions of the 27 personnel variables are given in Table 3 and definitions of the 186 AFSC variables are given in Appendix A.

Finally, a number of follow-up analyses were conducted to compare the results of the classification policy used for the full sample with a selective occupational classification approach, based on the application of AFSC specific regression results to a randomly chosen subsample of recruits.

III. RESULTS

Findings addressed to each of the following specific research questions are described: (a) descriptive statistics for the enlisted sample, (b) development and tests of multiple linear regression equations, and (c) an examination of selective occupational classification and assignment effects conducted on a random subsample of enlistees.

Descriptive Statistics

Table 2 indicates the disposition of the sample at the end of 36 months of service. As shown, 64.12% of the airmen in the sample were still in the service at the end of 3 years, as compared to 35.88% who had separated during that time. Attrition status was determined by loss codes contained in personnel records to identify enlistees who had been separated prior to the end of 3 years of service. Attritions were grouped based on similar reasons for loss. Almost two-thirds of the losses, or 23.49% of the sample, were classified as being due to misconduct, unsuitability, and unfitness. Of the remaining enlistee losses, one-third were classified as miscellaneous, loss to other military organizations, physical disability, and death. As expected, losses due to early release policies represented less than .5% of the total sample. These results assured that personnel and occupational effects could be assessed for their impact on tenure and attrition exclusive of alternative explanations due to organizational policy effects.

Table 2. **Composition of Enlistee Sample at the End of Three Years**

Group	N	%
In service (tenure)	179,572	64.12
Attrition during 36 months	(100,467)	(35.88)
Misconduct, unsuitable, unfit	65,776	23.49
Miscellaneous discharges: includes pregnancy, hardship, marriage, sole surviving son/daughter, childbirth, etc.	14,456	5.16
Loss to other military agencies: includes release to other service, recall as officer, release to Air Force Reserve, Air National Guard, etc.	13,475	4.81
Physical disability and death	5,444	1.95
Early release: includes release to medical school, public office, civilian police, etc.	1,316	.47
Total	280,039	100.00

Tables 3 and 4 show the personnel characteristics of the sample, an abbreviated distribution of subjects across the various occupational specialties included in the study, and preliminary data on occupational differences in the attrition and tenure criteria. The average aptitude scores (Table 3) range from 58.46 for the Administrative index to 62.92 for the General index. On the average, 85% of the sample was Caucasian, 95% were males, and only 15% were married at enlistment. Average age at enlistment was approximately 19 years. The majority of recruits had completed high school (88%), showing an average of 12.11 years of formal education. In addition, most enlistees had completed English (93%), Biology (73%), and Algebra (72%) courses in high school, while fewer had taken Chemistry (32%), Trigonometry (23%), and Physics (19%) courses. The sample distributions shown in Table 4 for selected AFSCs indicate a wide variation in the numbers of personnel included in each of the occupational specialties. Occupational samples ranged from 102 subjects in AFSC 672X0, Budget, to a high of 23,037 in 431X1, Aircraft Maintenance. (Appendix A includes a complete listing of AFSCs.) Across each of the 186 occupational groups, the average sample size was approximately 1,500 airmen (median = 640). Table 4 also contains information on basic occupational differences in attrition rates measured as a percent of premature attrition prior to 36 months and in terms of tenure or the average number of months served within each specialty. Overall, the average attrition rate across specialties was approximately 35.88%, and the mean number

of months served was 30.99 months. The variation of attrition rates across specialties ranged from a low of 2.76% for 435X0, Flight Engineer, to a high of 84.36% for 203X0, Linguist/Interrogator. Corresponding values for the average number of months served ranged from 35.87 for Flight Engineers to 17.96 for Linguists, while most other personnel served between 30 and 35 months. Preliminary inspection of the occupational differences in the attrition and tenure criteria would seem to indicate that substantial differences existed among occupations in the propensity of incumbents to remain in service after 36 months.

Table 3. **Means and Standard Deviations for Personnel Characteristics of First-term Enlistees**

Personnel Variables (P)	Mean	SD
Aptitude Scores		
1 Armed Forces Qualifying Test Score (overall)	59.67	22.24
2 Mechanical Index	58.75	21.16
3 General Index	62.92	18.69
4 Administrative Index	58.46	21.21
5 Electronics Index	62.00	21.19
6 Armed Forces Qualifying Test Mental Category	2.61	.74
7 Mechanical Index Squared	3,898.69	2,244.28
8 General Index Squared	4,308.27	2,345.50
9 Administrative Index Squared	3,867.90	2,465.34
10 Electronics Index Squared	4,292.60	2,593.08
Race		
11 (Coded 1 if Caucasian, 0 otherwise)	.85	.36
Sex		
12 (Coded 1 if male, 0 otherwise)	.95	.22
Age		
13 Age at Enlistment (Months)	234.97	17.61
14 Age Squared	55,520.05	8,769.77
Family		
15 Marital Status (Coded 1 if married, 0 otherwise)	.15	.36
16 Number of Dependents	.22	.58
17 Number of Dependents Squared	.38	1.35
Education		
18 Formal Years	12.11	.84
19 Formal Years Squared	147.27	22.57
20 High School or General Equivalence Diploma (Coded 1 if obtained prior to enlistment, 0 otherwise)	.88	.32
High School Courses (Coded 1 if taken, 0 otherwise)		
21 Algebra	.72	.45
22 Biology	.73	.44
23 Chemistry	.32	.47
24 Geometry	.50	.50
25 Physics	.19	.39
26 Trigonometry	.23	.42
27 English/Grammar	.93	.25

Note: N = 280,039.

Table 4. **Ten Highest and Lowest Attrition Rates by Air Force Specialty Code (AFSC)**

AFSC	Occupational Specialty (S)	N	Attrition Rate %	Average Tenure (Mo)
203X0	Linguist/Interrogator	243	84.36	17.96
621X0	Baker	374	52.13	27.52
622X0	Food Service	4,104	50.75	27.17
544X0	Cryogenic Fluids Production	194	48.45	28.30
422X1	Aircraft Environmental Systems Repair	1,018	46.66	30.17
811X0	Security	18,635	46.36	28.26
361X0	Outside Wire and Antenna Maintenance Repair	705	43.82	30.06
424X0	Aircraft Fuel Systems Mechanic	1,001	43.75	30.40
551X1	Construction Equipment Operator	1,651	43.00	30.23
326X0	Avionics Aerospace Ground Equipment	209	42.10	32.13
433X0	Maintenance Scheduling	252	11.11	35.49
205X0	Electronic Intelligence	337	10.39	35.07
648X0	Supply Systems	343	10.20	35.52
791X1	Radio and TV Broadcasting	144	9.72	34.97
555X0	Programs and Work Control	383	8.35	35.38
912X4	Allergy/Immunology	145	8.27	35.53
981X1	Preventive Dentistry	211	7.10	35.47
672X0	Budget	102	5.88	35.68
751X2	Training	563	5.50	35.56
435X0	Flight Engineer	181	2.76	35.87

Note: See Appendix A for a complete listing of attrition rates, and means and standard deviations for the number of months recruits served in the 186 occupational specialties.

Regression Analyses

Results from each of the four regression equations (Table 1) computed for both tenure criteria are shown in Table 5. The sample size for all of the computations was 280,039.

Table 5. **Multiple Correlations for Regression Models**

Number	Model	Number of Independent Predictors	Multiple Correlations (R)* In/Out After 36 Mo.	Multiple Correlations (R)* Number of Mo. Served
1	Occupational Specialties (S)	186	.154	.173
2	Personnel Characteristics (P)	28	.223	.235
3	Main Effects (P + S)	213	.254	.265
4	Interaction Effects (P × S)	5,208	.308	.308

*All multiple Rs are statistically significant, $p \leq .001$.

The predictive accuracy (Multiple R) of the occupational membership model was found to be .154 for the binary in/out criterion and .173 for months in service. Regression results for this model and for the remaining regression models were all statistically significant. The model containing the personnel variables correlated .223 and .235, respectively, with the tenure criteria. As expected, these statistically significant findings were consistent with past attrition research findings. The accuracy of both sets of predictors in additive combination was slightly higher than were the previous results, with $\underline{R} = .254$ and $\underline{R} = .265$ for the in/out and number of months criteria, respectively. The full interaction model, which allowed for differential weighting of the personnel variables depending on specific occupations, correlated even higher with $\underline{R} = .308$ for both tenure criteria.

The statistical significance of personnel and occupational differences separately and in the context of the other variables was evaluated using the regression results from the models in Table 5. Comparisons between the models testing various predictive relationships among the variables are shown in Table 6.

Table 6. **Statistical Comparison of Regression Models**

Models	Significance Test	R^2 Full	R^2 Restricted	df_1	df_2	F Ratio[a] In/out	F Ratio[a] Months Served
1 vs U[b]	Occupational differences	.030	0	185	279,853	36.73	
		.024	0	185	279,853		46.61
2 vs U[b]	Personnel differences	.055	0	27	280,011	544.46	
		.050	0	27	280,011		604.36
4 vs 3	Interaction	.095	.064	4,995	274,831	1.86	
		.095	.070	4,995	274,831		1.50
4 vs 2	Unique contribution of occupational data	.095	.054	5,180	274,831	2.64	
		.095	.055	5,180	274,831		2.32
4 vs 1	Unique contribution of personnel data	.095	.024	5,022	274,831	4.31	
		.095	.030	5,022	274,831		3.92

[a]All F ratios were statistically significant $p \leq .001$.
[b]Restricted model contains only the unit vector ($R^2 = 0.0$).

The first research question was concerned with simple differences in attrition and tenure among occupational specialties. The F test comparisons between the squared multiple correlation for the occupational models and a multiple correlation of zero resulted in ratios of 36.73 for the in/out criterion and 46.61 for the months-served criterion. These findings indicated that occupational specialties were substantially different from one another with respect to attrition rates and the number of months enlistees had served.

The second research question addressed attrition and tenure differences among enlistees with different background, education, and aptitude characteristics. The significant F ratios for the two personnel model comparisons indicated that differences in personnel characteristics had a considerable impact on both dependent measures. Results from the preceding comparisons indicated that both the occupational and personnel models were highly significant in predicting enlisted attrition and tenure. In response to the third research question, comparisons testing for interaction effects were also highly significant for both criteria. The detection of interaction between occupational membership and personnel variables indicated that the effects of assigned specialties and the effects of enlistee characteristics were not independent of one another with regard to first-term attrition and tenure. This finding indicated that the use of a single personnel variable equation for all AFSCs was considerably less accurate than were the AFSC-specific equations. Based on these findings, the interaction model was retained as the full model for the remaining significance tests. Two more comparisons

were made to assess the unique contributions of occupational and personnel data to the prediction of tenure. Tests for unique effects indicated that both types of predictors contributed significantly to the prediction of tenure in the context of the other variables. These findings further emphasized the joint importance of both pre-enlistment personnel data and knowledge of AFSC assignments in regard to tenure.

In summary, the regression analysis results revealed that occupational membership and personnel characteristics taken separately were highly predictive of third year attrition and determined to a large degree the amount of time that first-term airmen served during their enlistment. Further, the functional relationships between the two tenure criteria and the two types of predictor sets were shown to be interactional rather than additive. These results indicated that occupational classification should be selective within AFSCs. Finally, the results showed that both personnel and occupational data contributed uniquely to such relationships even when the effects of the other set of predictor variables were held constant.

Illustration of Predictive Relationships

To demonstrate the predictive relationships associated with the job-specific tenure equations in a more detailed and graphic way, the expected probability of attrition was computed for each case in a 5% random sample of the original validation group (N = 13,992). These values were then compared with actual disposition from service data. As shown in Figure 1, actual tenure rates for the predicted score categories varied between 95% and 9%. Personnel in the low predicted tenure score categories were 10 times more likely to attrit in the first 3 years than were persons in the high predicted tenure group. The magnitude of the relationship appeared to be practically as well as statistically significant.

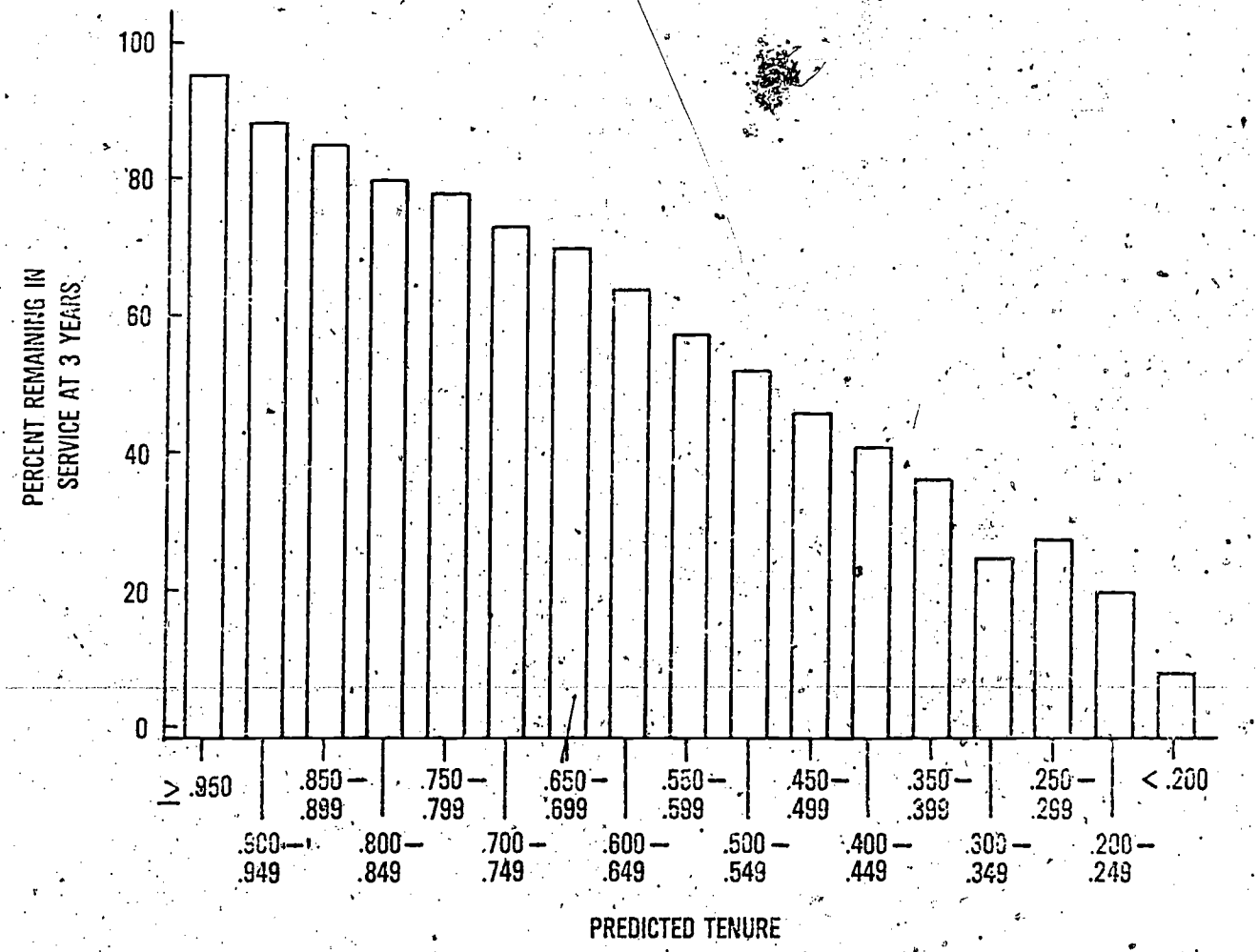

Figure 1. **Predicted versus actual tenure.**

The 5% sample was also used to simulate what would have occurred to tenure rates in specific AFSCs if incoming recruits had been assigned at random without regard for aptitude requirements or other prerequisites. This was accomplished by computing predicted tenure scores for the common sample of 13,992 cases using each of the AFSC-specific equations in turn, aggregating the predicted scores by specialty, and comparing these values with the actual attrition rates obtained.

If tenure rates were solely attributable to the quality of personnel entering the various AFSCs, then the predicted tenure scores would not vary widely across occupations. Table 7 contains 20 representative AFSCs with corresponding information regarding minimum required aptitude scores, the observed tenure rates (A), the average of the predicted tenure scores based on the 5% sample (B), and the differences between predicted and observed scores (B - A). (Appendix A provides a full listing of the AFSCs.) It is apparent that even when effects due to personnel quality are statistically controlled, there are still wide disparities in the predicted tenure rates. The residual variability is due to occupational differences not presently accounted for in current explanatory models. Also worth mentioning in this regard is the fact that high and low tenure AFSCs were found with about equal frequency among specialties with a high minimum aptitude requirement (80 or above) as among specialties with lower minimums.

Table 7. **Observed Versus Predicted Tenure Based on Random Assignment for Selected Occupational Specialties**

AFSC	Occupational Specialty	Minimum Aptitude	Tenure Rate		
			Observed (A)	Predicted (B)	Difference (B)–(A)
	High Tenure AFSCs				
672X0	Budget	80	.9412	.8599	−.08
205X0	Electronic Intelligence	80	.8961	1.0000[a]	+.10
306X1	Elec-Mech Comm and Crypto Equip Sys Repair	80	.8652	.6887	−.18
317X0	Instrumentation Mechanic	80	.8197	.8439	+.02
203X1	Voice Processing	80	.7988	.9458	+.15
435X0	Flight Engineer	50	.9724	.9991	+.03
555X0	Programs and Work Control	40	.9164	.9048	−.01
921X0	Survival	40	.8194	.8059	−.01
713X0	Printing-Binding	40	.8065	.7770	−.03
425X0	Inflight Refueling Operator	50	.7899	.8892	+.10
	Low Tenure AFSCs				
203X0	Linguist/Interrogator	80	.1564	.7018	+.54
326X0	Avionics Aerospace Ground Equipment	80	.5789	.1994	−.38
328X2	Airborne Early Warning Radar	80	.5862	.0000[a]	−.59
306X0	Electronic Communications and Cryptographic Equip Sys Repair	80	.5988	.2236	−.38
328X0	Avionic Communications	80	.6207	1.0000[a]	+.38
621X0	Baker	40	.4786	.5501	+.07
422X1	Aircraft Environmental Systems Repair	40	.5334	.6062	+.07
472X1	Special Vehicle Repair	40	.5913	.6620	+.07
536X0	Corrosion Control	50	.6109	.5721	−.04
647X0	Materiel Facilities	40	.6203	.5925	−.03

Note: See Appendix A for a complete listing of the N = 280,039 observed and N = 13,992 predicted tenure scores.
[a]Average of predicted scores falls outside of possible limits of 0 and 1. Values have been reset within 0–1 limits.

Comparison of the observed versus predicted tenure rates for specific occupations is also noteworthy. The positive differences, as in the Electronic Intelligence (205X0) and Voice Processing (203X1) career ladders, indicate circumstances where the observed tenure rate would likely have been higher if the quality of input had been more representative of the average recruit sample. Negative differences reflect lower expectancies for tenure if the personnel entering the career field had been closer to average quality. In general, an optimal assignment of personnel would result in a majority of these values being negative; that is, predicted tenure rates under random assignment being lower than actual rates.

IV. DISCUSSION AND CONCLUSIONS

Overall, the principal findings of the study supported the premise that occupational differences in tenure and attrition rates are statistically, as well as practically, significant even when the effects of personnel background are controlled or held constant. In general, this finding was shown to have important implications for refining occupational selection and classification procedures for first-term enlisted airmen.

Specifically, the evidence strongly suggests that airman attrition rates and the number of months airmen served varied widely across occupational specialties. This finding indicated that some specialties in the Air Force inventory require much more attention in terms of manpower and training requirements for first-term enlistees than other specialties. Ongoing replacement and training quotas for any given AFSC are determined to a large extent by the number of airmen who remain in the specialty versus those who leave prematurely. Initial expectations about the character of the high and low attrition specialties were not completely borne out on the basis of the quality of personnel input alone. Among those specialties with high attrition (low tenure) rates, not all fell into the "low aptitude requirement" category. This was certainly the case for the Linguist/Interrogator Specialty (203X0) and the Avionics Communication Specialty (328X0) where the minimum aptitude requirement is at the 80th percentile. At the other extreme, not all low attrition specialties had characteristically high input quality; (e.g., Programs and Work Control (555X0) and Survival (921X0).

The results of the study also further corroborated the earlier Air Force findings of Gordon & Bottenberg (1962), Fisher et al. (1960), Flyer (1959, 1963), and other military researchers concerning the effects of education, background, and aptitude on prediposition toward attrition. It should be noted that the personnel losses reported in this study occurred despite the fact that recruit selection and screening techniques were in effect at the time these airmen entered the Air Force. Certain types of losses, such as to other service, hardship, and death, are unavoidable. However, personnel selection techniques that were more refined could reduce by a significant margin the types of losses due to unfitness, misconduct, and undesirability.

Perhaps most importantly, the findings suggest that some recruits would serve more of their enlistment time if placed in certain specialties but would probably leave the service before 36 months if placed in other occupational assignments. Conversely, those same jobs vacated earlier by some recruits could be filled for a longer period of time by recruits with different personnel characteristics. Based on these research findings, it may be concluded that the problem of maintaining a quality military force can no longer be solved exclusively with current selection and screening processes and policies based on personnel characteristics alone. Data from the present analysis suggest (a) that a single personnel selection equation to predict attrition from the Air Force does not capitalize on knowledge of occupational differences and (b) that the personnel selection system would be enhanced if such differences were taken into account at the enlistment entry point. The interactive nature of these relationships strongly supports the use of specialty-unique equations in the classification and assignment system.

The overall findings compel a much broader interpretation of attrition. What must be taken into account is not only the quality of personnel input but also the possible effects of more specific occupational factors such as (a) the ease of skill transfer to the civilian sector, (b) gross pay differentials between the military and civilian sector, (c) the quality of working conditions in certain specialties, and (d) inappropriate matching of personnel characteristics and job requirements. Further research is needed to explore these and other determinants and to begin exploring intervention strategies designed to reduce personnel attrition to more manageable levels. Additional refinement of techniques outlined in this report should also be considered specifically along the lines of (a) clustering homogeneous equations to reduce the computational burden and provide for more stable parameter estimates, and (b) additional development of personnel assessment procedures suitable for predicting job satisfaction and attrition. While the level of accuracy obtained with

the aptitude and biographical data is relatively high, it is still far below what might be achieved with additional personnel assessment.

V. RECOMMENDATION

Present selection and assignment procedures should be redesigned to include a more sophisticated treatment of occupational differences. This could be done by creating occupational standards for specific career ladders based on minimum qualifying scores on the tenure index or by expanding the Person-Job-Match algorithmn to include tenure predictions at the occupational level. Either approach would be economical to implement since the predictor data base (ASVAB; educational level, high school courses, age, etc.) is already being collected and maintained at the entry point.

REFERENCES

Bottenberg, R.A., & Ward, J.H., Jr. *Applied multiple linear regression.* PRL-TDR-63-6, AD-413 128. Lackland AFB, TX: Personnel Research Laboratory, Aerospace Medical Division, March 1963.

Carpenter, J.B., & Christal, R.E. *Development of a data base for direct analysis of airman loss rates.* AFHRL-TR-73-37, AD-775 721. Lackland AFB, TX: Occupational Research Division, Air Force Human Resources Laboratory, December 1973.

Erwin, F.W., & Herring, J.W. *The feasibility of the use of autobiographical information as a predictor of early Army attrition.* ARI-TR-77-A6, AD-A040 622. Alexandria, VA: US Army Research Institute for the Behavioral and Social Sciences, August 1977.

Fisher, W.E., Ward, J.H., Jr., Hoklrege, F.E., & Lawrence, H.G. *Prediction of unsuitability discharges.* WADD-TN-60-260, AD-248 077. Lackland AFB, TX: Personnel Laboratory, Wright Air Development Division, Air Research and Development Command, 1960.

Flyer, E.S. *Factors relating to discharge for unsuitability among 1956 airman accessions to the Air Force.* WADC-TN-59-201, AD-230 758. Lackland AFB, TX: Personnel Laboratory, Wright Air Development Center, December 1959.

Flyer, E.S. *Prediction of unsuitability among first-term airmen from aptitude indexes, high school reference data, and basic training evaluations.* PRL-TDR-63-17, AD-420 530. Lackland AFB, TX: 6570th Personnel Research Laboratory, Aerospace Medical Division, June 1963.

Goodstadt, B.E., & Glickman, A.S. *The current status of enlisted attrition in the U.S. Navy and in the U.S. Marine Corps and the search for remedies.* AIR-54500-11/75-FR. Washington, D.C.: American Institutes for Research, Final Report, November 1975.

Gordon, M.A., & Bottenberg, R.A. *Prediction of unfavorable discharge by separate educational levels.* PRL-TDR-62-5, AD-284 802. Lackland AFB, TX: 6570th Personnel Research Laboratory, Aerospace Medical Division, Air Force Systems Command, April 1962.

Guinn, N. *Factors related to adaptability to military service among 1965 airman accessions.* AFHRL-TR-73-42, AD-768 328. Lackland AFB, TX: Personnel Research Division, Air Force Human Resources Laboratory, September 1973.

Guinn, N., Johnson, A.D., & Kantor, J.E. *Screening for adaptability to military service.* AFHRL-TR-75-30, AD-A014 790. Lackland AFB, TX: Personnel Research Division, Air Force Human Resources Laboratory, May 1975.

Hendrix, W.H., Ward, J.H., Jr., Pina, M., Jr., & Haney, D.L. *Pre-enlistment person-job match system.* AFHRL-TR-79-29, AD-A078 427. Brooks AFB, TX: Occupation and Manpower Research Division, Air Force Human Resources Laboratory, September 1979.

Klieger, W.A., Dubuisson, A.U., & deJung, J.E. *Prediction of unacceptable performance in the Army.* Technical Research Note 113. Washington, D.C.: Human Factors Research Branch, TAG Research and Development Command, June 1961.

Plag, J.A., & Goffman, J.M. The prediction of four-year military effectiveness from characteristics of Naval recruits. *Military Medicine*, 1966, **131**, 729-735.

Sands, W.A. *Development of a revised Odds for Effectiveness (OFE) table for screening male applicants for Navy enlistment.* Technical Note 76-5. San Diego, CA: Navy Personnel Research and Development Center, April 1976.

Sands, W.A. *Screening male applicants for Navy enlistment.* NPRDC-TR-77-34. San Diego, CA: Navy Personnel Research and Development Center, June 1977.

Sands, W.A. Enlisted personnel selection for the U.S. Navy. *Personnel Psychology*, 1978, **31**, 63-70.

Shoemaker, W.B., Drucker, E.H., & Kriner, R.E. *Prediction of delinquency among Army enlisted men: A multivariate analysis.* HumRRO-TR-74-3. Alexandria, VA: Human Resources Research Organization, February 1974.

Vitola, B.M., Mullins, C.J., & Brokaw, L.D. *Quality of the all-volunteer Air Force — 1973.* AFHRL-TR-74-35, AD-781 755. Lackland AFB, TX: Personnel Research Division, Air Force Human Resources Laboratory, April 1974.

Vitola, B.M., Guinn, N., & Wilbourn, J.M. *Impact of various enlistment standards on the procurement-training system.* AFHRL-TR-77-16, AD-A040 752. Brooks AFB, TX: Personnel Research Division, Air Force Human Resources Laboratory, April 1977.

Ward, J.H., Jr., & Jennings, E. *Introduction to linear models.* Englewood Cliffs, N.J.: Prentic-Hall, 1973.

Ward, J.H., Jr., & Haltman, H.P. *Computer-based enlistment quota reservation system using the general data management system 2000: Programming and implementation details.* AFHRL-TR-75-71, AD-A021 340. Lackland AFB, TX: Occupational and Manpower Research Division, Air Force Human Resources Laboratory, December 1975.

Ward, J.H., Jr., Haney, D.L., Hendrix, H.W., & Pina, M. *Assignment procedures in the Air Force procurement management information system.* AFHRL-TR-78-30, AD-A056 531. Brooks AFB, TX: Occupation and Manpower Research Division, Air Force Human Resources Laboratory, July 1978.

APPENDIX A: AFSC ATTRITION DATA

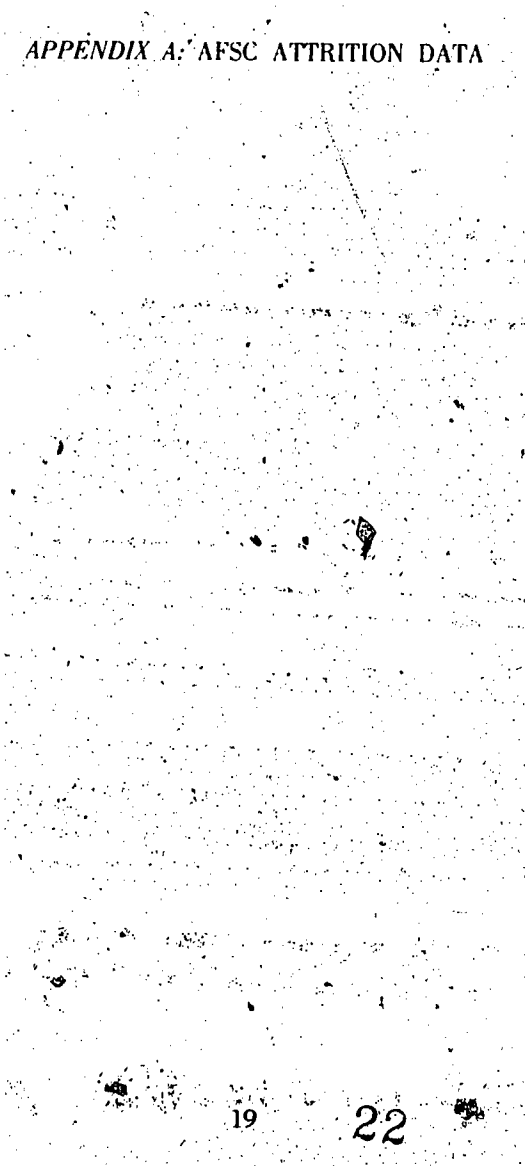

Table A-1. **Attrition Data for First-Term Airmen by Occupational Specialty**

Nr.	AFSC	Occupational Specialty (S)	Tenure Criteria: Number Out/In After 36 Months				Months Served	
			Out	In	Total	% Out/Total	Mean	SD
1	111X0	Defensive Aerial Gunner	32	123	155	20.64	35.15	1.92
2	202X0	Radio/Communications Analysis	377	912	1,289	29.24	33.03	6.92
3	203X0	Linguist/Interrogator	205	38	243	84.36	17.96	10.81
4	203X1	Voice Processing	400	1,588	1,988	20.12	34.54	4.06
5	204X0	Intelligence Operations	183	405	588	31.12	31.93	8.23
6	205X0	Electronic Intelligence	35	302	337	10.38	35.07	3.26
7	206X0	Photo Interpretation	203	379	582	34.89	32.00	7.86
8	221X0	Photomapping Cartographics	56	134	190	29.47	32.40	7.47
9	231X1	Graphics	146	494	640	22.81	33.48	6.07
10	233X0	Continuous Photoprocessing	78	234	312	25.00	34.93	2.39
11	233X4	Still Photographic Lab	253	549	802	31.55	31.33	8.63
12	237X0	Audiovisual Media	119	223	342	34.80	31.59	8.36
13	252X1	Weather	403	1,069	1,472	27.38	32.07	7.99
14	271X0	Air Operations	750	1,036	1,786	41.99	29.92	9.45
15	272X0	Air Traffic Control Operator	389	1,676	2,065	18.83	33.75	6.29
16	274X0	Command and Control	73	505	578	12.62	34.23	5.66
17	276X0	Aircraft Control and Warning Systems	783	1,357	2,140	36.58	31.44	8.39
18	291X0	Communications Center	2,084	2,969	5,053	41.24	30.73	8.87
19	292X1	Morse Systems Operator	451	1,367	1,818	24.80	32.97	7.50
20	292X2	Printer Systems Operator	173	777	950	18.21	34.42	4.97
21	293X3	Radio Operator	366	615	981	37.30	31.51	8.28
22	295X0	Automatic Digital Switching	42	87	129	32.55	34.36	3.33
23	302X0	Weather Equipment Repair	156	494	650	24.00	33.19	7.21
24	303X1	Air Traffic Control Radar Repair	224	726	950	23.57	33.13	7.66
25	303X2	Air Control and Warning Radar Repair	626	1,022	1,648	37.98	31.83	8.44
26	303X3	Automatic Tracking Radar Repair	243	584	827	29.38	32.74	7.81
27	304X0	Radio Relay Equipment Repair	805	1,417	2,222	36.22	31.27	8.83
28	304X1	Flight Facilities Equipment Repair	207	462	669	30.94	32.64	7.80
29	304X4	Ground Radio Communications Equipment Repair	1,352	2,987	4,339	31.15	31.88	8.55
30	304X5	Television Equipment Repair	68	106	174	39.08	33.41	5.83
31	304X6	Space Communications Systems Equipment Operator	50	80	130	38.46	32.16	7.65
32	305X3	Electronic Computer Systems Repair	484	1,215	1,699	28.48	33.27	6.51

Table A-1. (Continued)

Nr.	AFSC	Occupational Specialty (S)	Tenure Criteria: Number Out/In After 36 Months: Out	In	Total	% Out/Total	Months Served: Mean	SD
33	306X0	Electronic Communications and Cryptographic Equipment Systems Repair	548	818	1,366	40.11	32.78	6.68
34	306X1	Electro-Mechanical Communications and Cryptographic Equipment Systems Repair	57	366	423	13.47	35.20	2.75
35	307X0	Tele-Communications Systems Control	500	769	1,269	39.40	31.54	8.98
36	316X0	Missile Systems Analyst	539	1,534	2,073	26.00	33.57	6.08
37	316X1	Missile Guidance and Control	259	533	792	32.70	33.27	6.50
38	316X2	Missile Electronic Equipment	103	188	291	35.39	33.59	5.26
39	317X0	Instrumentation Mechanic	75	341	416	18.02	34.32	5.39
40	321X0	Bomb-Navigation Systems Mechanic	159	331	490	32.44	32.21	8.45
41	322X1	Weapon Control Systems Mechanic	488	1,424	1,912	25.52	32.59	7.94
42	323X0	Defensive Fire Control Systems Mechanic	101	316	417	24.22	32.82	7.72
43	324X0	Precision Measuring Equipment	326	1,225	1,551	21.01	33.24	7.40
44	325X0	Automatic Flight Control Systems	286	653	939	30.45	32.32	7.91
45	325X1	Aviortics Instrument Systems	523	1,022	1,545	33.85	32.44	7.44
46	326X0	Avionics Aerospace Ground Equipment	88	121	209	42.10	32.13	7.60
47	326X1	Integrated Avionics Components	157	394	551	28.49	32.84	7.25
48	326X2	Integrated Avionics Systems	228	501	729	31.27	33.01	6.63
49	328X0	Avionic Communications	520	851	1,371	37.92	31.86	7.90
50	328X1	Avionic Navigation Systems	483	760	1,243	38.85	31.48	8.48
51	328X2	Airborne Early Warning Radar	48	68	116	41.37	30.72	9.10
52	328X3	Electronic Warfare Systems	520	880	1,400	37.14	32.19	7.90
53	328X4	Avionic Interial and Radar Navigation Systems	421	595	1,016	41.43	31.57	8.58
54	329X0	Avionic Sensor Systems	103	334	437	23.56	33.62	6.02
55	341X1	Instrument Trainer	41	98	139	29.49	33.06	6.54
56	342X0	Flight Simulators	128	261	389	32.90	32.21	7.73
57	361X0	Outside Wire and Antenna Maintenance Repair	309	396	705	43.82	30.06	9.64
58	361X3	Missile Systems Cable Splicing	34	103	137	24.81	32.88	7.26
59	361X4	Cable Splicing	190	363	553	34.35	31.81	7.88
60	362X1	Telephone Switching Equipment Repair	286	516	802	35.66	31.75	8.29
61	326X2	Electronic Switching Systems Repair	35	165	200	17.50	34.71	4.58
62	362X4	Telephone Equipment Installation and Repair	232	368	600	38.66	32.06	7.63
63	363X0	Communications and Relay Center Equipment Repair	358	962	1,320	27.12	33.28	6.29
64	391X0	Maintenance Analysis	102	359	461	22.12	33.26	7.04

Table A-1. (Continued)

Nr.	AFSC	Occupational Specialty (S)	Tenure Criteria: Number Out/In After 36 Months				Months Served	
			Out	In	Total	% Out/Total	Mean	SD
65	403X0	Medical Equipment Repair	32	76	108	29.62	33.57	5.26
66	404X0	Precision Photographic Systems Repair	80	168	248	32.25	32.11	8.17
67	404X1	Aerospace Photographic Systems Repair	27	81	108	25.00	33.48	5.82
68	421X1	Aircraft Propeller Repair	103	225	328	31.40	30.97	10.10
69	421X2	Aircraft Pneudraulic Repair	746	1,107	1,853	40.25	30.39	9.41
70	422X1	Aircraft Environmental Systems Repair	475	543	1,018	46.66	30.17	9.47
71	422X2	Aircrew Egress Systems Repair	255	434	689	37.01	31.20	8.61
72	423X0	Aircraft Electrical Repair	639	1,176	1,815	35.20	31.31	8.56
73	424X0	Aircraft Fuel Systems Mechanic	438	563	1,001	43.75	30.40	9.14
74	424X1	Inflight Refueling Systems Repair	45	120	165	27.27	32.76	6.56
75	425X0	Inflight Refueling Operator	50	188	238	21.00	35.17	1.83
76	431X0	Helicopter Mechanic	287	738	1,025	28.00	31.93	8.35
77	431X1	Aircraft Maintenance	8,729	14,308	23,037	37.89	30.73	9.16
78	432X0	Jet Engine Mechanic	2,362	3,600	5,962	39.61	30.81	8.99
79	432X1	Reciprocating Engine Mechanic	103	219	322	31.98	30.74	9.54
80	433X0	Maintenance Scheduling	28	224	252	11.11	35.49	1.92
81	435X0	Flight Engineer	5	176	181	2.76	35.87	.77
82	443X0	Missile Mechanic	501	956	1,457	34.38	31.49	8.42
83	461X0	Munitions Maintenance	791	1,944	2,735	28.92	32.60	7.63
84	462X0	Weapons Mechanic	3,293	4,789	8,082	40.74	31.61	7.82
85	463X0	Nuclear Weapons	275	759	1,034	26.59	33.06	7.16
86	464X0	Munitions Disposal	21	90	111	18.91	34.41	5.37
87	472X0	Base Maintenance Equipment Repair	140	302	442	31.67	31.69	7.86
88	472X1	Special Vehicle Repair	367	531	898	40.86	30.65	8.86
89	473X0	General Purpose Vehicle Repair	630	1,273	1,903	33.11	30.82	9.02
90	473X1	Vehicle Body Repair	117	310	427	27.40	31.33	8.93
91	511X0	Computer Operator	394	1,288	1,682	23.42	33.40	6.40
92	511X1	Programming	76	253	329	23.10	33.89	5.63
93	531X0	Machinist	149	466	615	24.22	33.24	6.71
94	532X0	Metals Processing	175	416	591	29.61	32.05	7.84
95	533X0	Sheet Metal	107	205	312	34.29	30.54	9.40
96	534X0	Airframe Repair	843	1,221	2,064	40.84	30.27	9.56

Table A-1. (Continued)

Nr.	AFSC	Occupational Specialty (S)	Tenure Criteria: Number Out/In After 36 Months: Out	In	Total	% Out/Total	Months Served: Mean	SD
97	535X0	Corrosion Control	349	548	897	38.91	30.11	9.85
98	536X0	Nondestructive Inspection	64	155	219	29.22	34.69	2.41
99	541X0	Missile Facilities	1,888	3,309	5,197	36.33	31.00	8.91
100	542X0	Electrician	472	975	1,447	32.61	31.85	8.01
101	542X1	Electric Powerline	154	303	457	33.69	32.45	7.33
102	543X0	Electrical Power Production	669	1,157	1,826	36.63	31.45	8.50
103	544X0	Cryogenic Fluids Production	94	100	194	48.45	28.30	10.30
104	545X0	Refrigeration and Air Conditioning	376	930	1,306	28.79	32.04	8.07
105	546X0	Liquid Fuel Systems Maintenance	124	226	350	35.42	31.77	8.02
106	547X0	Heating Systems	607	962	1,569	38.68	30.59	8.86
107	551X0	Pavements Maintenance	716	1,236	1,952	36.68	30.01	9.83
108	551X1	Construction Equipment Operator	710	941	1,651	43.00	30.23	8.99
109	552X0	Carpentry	626	1,108	1,734	36.10	30.92	8.80
110	552X3	Mason	148	278	426	34.74	23.23	8.45
111	552X4	Protective Coater	286	468	754	37.93	30.06	9.93
112	552X5	Plumber	512	924	1,436	35.65	30.86	8.66
113	553X0	Site Development	79	310	389	20.30	33.21	6.98
114	554X0	Real Estate-Cost-Management Analyst	58	242	300	19.33	34.26	4.86
115	555X0	Programs and Work Control	32	351	383	8.35	35.38	2.64
116	563X0	Environmental Support	264	606	870	30.34	30.90	9.32
117	566X0	Entomologist	70	224	294	23.80	32.50	7.81
118	571X0	Fire Protection	1,857	3,231	5,088	36.49	30.48	9.60
119	581X0	Parachute Rigger	97	265	362	26.80	31.23	9.38
120	582X0	Fabric Leather and Rubber Products Repair	140	309	449	31.18	31.50	8.60
121	601X4	Packaging	163	295	458	35.58	30.53	9.34
122	602X0	Passenger and Household Goods	339	552	891	38.04	30.29	9.58
123	602X1	Freight Traffic	294	483	777	37.83	30.33	9.52
124	603X0	Vehicle Operator/Dispatcher	2,300	3,422	5,722	40.19	29.84	9.54
125	605X0	Air Passenger	516	966	1,482	34.81	29.93	9.81
126	605X1	Air Cargo	1,024	1,630	2,654	38.58	30.58	9.05
127	60750	Aircraft Loadmaster	159	463	622	25.56	33.08	6.41

Table A-1. (Continued)

Nr.	AFSC	Occupational Specialty (S)	Tenure Criteria: Number Out/In After 36 Months: Out	In	Total	% Out/Total	Months Served: Mean	SD
128	611X0	Supply Services	341	487	828	41.18	30.63	8.97
129	612X0	Meatcutter	45	81	126	35.71	28.63	11.08
130	621X0	Baker	195	179	374	52.13	27.52	10.55
131	622X0	Food Service	2,083	2,021	4,104	50.75	27.17	11.20
132	622X1	Diet Therapy	95	187	282	33.68	30.84	9.29
133	631X0	Fuel	1,720	3,355	5,075	33.89	30.73	9.33
134	645X0	Inventory Management	3,476	6,071	9,547	36.40	30.45	9.47
135	647X0	Materiel Facilities	2,478	4,048	6,526	37.97	30.04	9.48
136	648X0	Supply Systems	35	308	343	10.20	35.52	1.96
137	651X0	Procurement	132	305	437	30.20	32.41	7.79
138	671X1	General Accounting	363	867	1,230	29.51	32.35	7.79
139	672X0	Budget	6	96	102	5.88	35.68	1.42
140	672X2	Disbursement Accounting	694	2,295	2,989	23.22	32.90	7.15
141	691X0	Management Analysis	34	171	205	16.58	33.64	6.58
142	701X0	Chaplain Services	90	273	363	24.79	32.64	7.64
143	702X0	Administration	8,672	12,512	21,184	40.93	29.94	9.66
144	705X0	Legal Services	56	233	289	19.37	34.11	4.88
145	711X0	Duplicating	101	257	358	28.21	34.94	8.34
146	713X0	Printing-Binding	24	100	124	19.35	32.80	7.96
147	713X1	Photolithography	42	73	115	36.52	32.25	7.69
148	732X0	Personnel	1,764	2,658	4,332	40.72	30.16	9.67
149	732X1	Personal Affairs	84	155	239	35.14	31.82	7.79
150	734X0	Social Actions	22	168	190	11.57	35.40	2.06
151	741X0	Physical Conditioning	214	638	852	25.11	32.75	7.41
152	741X1	Recreation	190	278	468	40.59	31.48	8.24
153	751X0	Education	75	159	234	30.05	31.82	8.35
154	751X2	Training	31	532	563	5.50	35.56	2.36
155	753X0	Small Arms	62	123	185	33.51	32.49	7.04
156	791X0	Information	213	482	695	30.64	32.22	7.53
157	791X1	Radio and TV Broadcasting	14	130	144	9.72	34.97	4.17
158	811X0	Security	8,640	9,995	18,635	46.36	28.26	11.11
159	812X0	Law Enforcement	2,633	4,901	7,534	34.94	30.47	9.85

Table A-1. (Concluded)

Nr.	AFSC	Occupational Specialty (S)	Tenure Criteria: Number Out/In After 36 Months: Out	In	Total	% Out/Total	Months Served: Mean	SD
160	871X0	Instrumentalist	202	464	666	30.33	32.78	7.23
161	901X0	Aeromedical	159	329	488	32.58	31.24	8.62
162	902X0	Medical Service	2,562	4,125	6,687	38.31	30.23	9.53
163	902X2	Operating Room	253	438	691	36.61	30.83	8.98
164	903X0	Radiology	190	610	800	23.75	32.39	7.79
165	904X0	Medical Laboratory	381	958	1,339	28.45	32.49	7.70
166	905X0	Pharmacy	143	263	406	35.22	31.02	8.89
167	906X0	Medical Administration	1,034	1,592	2,626	39.37	30.48	9.04
168	907X0	Preventive Medicine	107	237	344	31.10	32.18	7.79
169	908X0	Veterinary	114	299	413	27.60	32.45	7.93
170	911X0	Physiological Training	30	164	194	15.46	33.35	7.12
171	912X4	Allergy/Immunology	12	133	145	8.27	35.53	2.30
172	912X5	Optometry	33	94	127	25.98	33.04	6.92
173	913X0	Physical Therapy	31	95	126	24.60	32.79	7.09
174	914X0	Psychiatric Clinic	61	159	220	27.72	32.96	7.11
175	914X1	Psychiatric Ward	105	191	296	35.47	31.55	8.08
176	915X0	Medical Material	283	613	896	31.58	31.67	8.48
177	921X0	Survival	28	127	155	18.06	34.23	5.40
178	922X0	Aircrew Life Support	441	809	1,250	35.28	30.99	9.25
179	923X0	Pararescue Recovery	19	107	126	15.07	35.39	1.67
180	981X0	Dental	565	1,143	1,708	33.07	31.57	8.35
181	981X1	Preventive Dentistry	15	196	211	7.10	35.47	2.45
182	982X0	Dental Laboratory	102	290	392	26.02	33.06	6.92
183	991X5	Combat Security Police	47	171	218	21.55	34.52	4.50
184	991X7	Data Formatting Equipment Operator	45	141	186	24.19	34.03	5.03
185	991X8	Military Training Instructor	79	280	359	22.00	33.66	7.10
186	XXXXX	All other AFSCs	1,272	2,231	3,503	36.31	29.27	11.18
		All AFSCs	100,469	179,570	280,039	35.88	30.99	9.04

Table A-2. **Observed and Predicted Tenure Rates by Occupational Specialty**

Nr.	AFSC	Occupational Specialty	Tenure		
			Observed (A)	Predicted (B)	Difference (B)−(A)
1	111X0	Defensive Aerial Gunner	.7935	.8868	+.09
2	202X0	Radio/Communications Analysis	.7075	.4879	−.22
3	203X0	Linguist/Interrogator	.1564	.7018	+.55
4	203X1	Voice Processing	.7988	.9458	+.15
5	204X0	Intelligence Operations	.6888	.7346	+.05
6	205X0	Electronic Intelligence	.8961	1.0000*	+.10
7	206X0	Photo Interpretation	.6512	.4370	−.21
8	221X0	Photomapping Cartographics	.7053	.6621	−.04
9	231X1	Graphics	.7719	.7354	−.04
10	233X0	Continuous Photoprocessing	.7500	.7982	+.05
11	233X4	Still Photographic Lab.	.6845	.6878	+.00
12	237X0	Audiovisual Media	.6520	.6609	+.01
13	252X1	Weather	.7262	.7269	+.00
14	271X0	Air Operations	.5801	.6066	+.03
15	272X0	Air Traffic Control Operator	.8116	.8381	+.03
16	274X0	Command and Control	.8737	.8836	+.01
17	276X0	Aircraft Control and Warning Systems	.6341	.6200	−.01
18	291X0	Communications Center	.5876	.5686	−.02
19	292X1	Morse Systems Operator	.7519	.6644	−.09
20	292X2	Printer Systems Operator	.8179	.6094	−.21
21	293X3	Radio Operator	.6269	.4184	−.21
22	295X0	Automatic Digital Switching	.6744	.4014	−.27
23	302X0	Weather Equipment Repair	.7600	.7066	−.05
24	303X1	Air Traffic Control Radar Repair	.7642	.9407	+.18
25	303X2	Air Control and Warning Radar Repair	.6201	.6281	+.01
26	303X3	Automatic Tracking Radar Repair	.7062	.0000*	−.71
27	304X0	Radio Relay Equipment Repair	.6377	.4585	−.18
28	304X1	Flight Facilities Equipment Repair	.6906	1.0000*	+.31
29	304X4	Ground Radio Communications Equipment Repair	.6884	.3827	−.31
30	304X5	Television Equipment Repair	.6092	.8035	+.19
31	304X6	Space Communications Systems Equipment Operator	.6154	.9478	+.33
32	305X3	Electronic Computer Systems Repair	.7151	.8228	+.11
33	306X0	Electronic Communications and Cryptographic Equipment Systems Repair	.5998	.2236	−.38
34	306X1	Electro-Mechanical Communications and Cryptographic Equipment Systems Repair	.8652	.6887	−.18
35	307X0	Tele-Communications Systems Control	.6060	.6657	+.06
36	316X0	Missile Systems Analyst	.7400	.6565	−.08
37	316X1	Missile Guidance and Control	.6730	.7089	+.03
38	316X2	Missile Electronic Equipment	.6460	.0000*	−.65
39	317X0	Instrumentation Mechanic	.8197	.8439	+.02
40	321X0	Bomb-Navigation Systems Mechanic	.6755	1.0000*	+.32
41	322X1	Weapon Control Systems Mechanic	.7448	.0000*	−.74
42	323X0	Defensive Fire Control Systems Mechanic	.7578	.0000*	−.76
43	324X0	Precision Measuring Equipment	.7898	.8127	+.02
44	325X0	Automatic Flight Control Systems	.6954	.7726	+.08
45	325X1	Avionics Instrument Systems	.6615	.7994	+.14

Table A-2. (Continued)

Nr.	AFSC	Occupational Specialty	Tenure		
			Observed (A)	Predicted (B)	Difference (B)−(A)
46	326X0	Avionics Aerospace Ground Equipment	.5789	.1994	−.38
47	326X1	Integrated Avionics Components	.7151	.6573	−.06
48	326X2	Integrated Avionics Systems	.6872	.8653	+.18
49	328X0	Avionic Communications	.6207	1.0000[a]	+.38
50	328X1	Avionic Navigation Systems	.6114	.5970	−.01
51	328X2	Airborne Early Warning Radar	.5862	.0000[a]	−.59
52	328X3	Electronic Warfare Systems	.6286	.6465	+.02
53	328X4	Avionic Inertial and Radar Navigation Systems	.5856	.5333	−.05
54	329X0	Avionic Sensor Systems	.7643	.0000[a]	−.76
55	341X1	Instrument Trainer	.7050	1.0000[a]	+.30
56	342X0	Flight Simulators	.6710	.9433	+.27
57	361X0	Outside Wire and Antenna Maintenance Repair	.5617	.5913	+.03
58	361X3	Missile Systems Cable Splicing	.7518	.6762	−.08
59	361X4	Cable Splicing	.6564	.7205	+.06
60	362X1	Telephone Switching Equipment Repair	.6434	.5449	−.10
61	362X2	Electronic Switching Systems Repair	.8250	.8733	+.05
62	362X4	Telephone Equipment Installation and Repair	.6133	.5823	−.03
63	363X0	Communications and Relay Center Equipment Repair	.7288	.7185	−.01
64	391X0	Maintenance Analysis	.7787	.7440	−.03
65	403X0	Medical Equipment Repair	.7037	.6679	−.04
66	404X0	Precision Photographic Systems Repair	.6774	.6756	−.00
67	404X1	Aerospace Photographic Systems Repair	.7500	.8435	+.09
68	421X1	Aircraft Propeller Repair	.6860	.6825	−.00
69	421X2	Aircraft Pneudraulic Repair	.5974	.6389	+.04
70	422X1	Aircraft Environmental Systems Repair	.5334	.6062	+.07
71	422X2	Aircrew Egress Systems Repair	.6299	.6620	+.03
72	423X0	Aircraft Electrical Repair	.6479	.6170	−.03
73	424X0	Aircraft Fuel Systems Mechanic	.5624	.6253	+.06
74	424X1	Inflight Refueling Sytems Repair	.7273	.7860	+.06
75	425X0	Inflight Refueling Operator	.7899	.8892	+.10
76	431X0	Helicopter Mechanic	.7200	.7037	−.02
77	431X1	Aircraft Maintenance	.6211	.6008	−.02
78	432X0	Jet Engine Mechanic	.6038	.6178	+.01
79	432X1	Reciprocating Engine Mechanic	.6801	.6273	−.05
80	433X0	Maintenance Scheduling	.8889	.8743	−.01
81	435X0	Flight Engineer	.9724	.9991	+.03
82	443X0	Missile Mechanic	.6561	.7220	+.07
83	461X0	Munitions Maintenance	.7108	.6969	−.01
84	462X0	Weapons Mechanic	.5926	.5351	−.06
85	463X0	Nuclear Weapons	.7340	.8496	+.11
86	464X0	Munitions Disposal	.8108	.7925	−.02
87	472X0	Base Maintenance Equipment Repair	.6833	.7587	+.08
88	472X1	Special Vehicle Repair	.5913	.6620	+.07
89	473X0	General Purpose Vehicle Repair	.6689	.6560	−.01
90	473X1	Vehicle Body Repair	.7260	.7465	+.02
91	511X0	Computer Operator	.7658	.6829	−.08

Table A-2. (Continued)

Nr.	AFSC	Occupational Specialty	Tenure		
			Observed (A)	Predicted (B)	Difference (B)−(A)
92	511X1	Programming	.7690	.6601	−.11
93	531X0	Machinist	.7577	.7422	−.02
94	532X0	Metals Processing	.7039	.6716	−.03
95	533X0	Sheet Metal	.6571	.7121	+.06
96	534X0	Airframe Repair	.5916	.6094	+.02
97	535X0	Corrosion Control	.6109	.5721	−.04
98	536X0	Nondestructive Inspection	.7078	.7898	+.08
99	541X0	Missile Facilities	.6367	.6321	−.00
100	542X0	Electrician	.6738	.5964	−.08
101	542X1	Electric Powerline	.6630	.7086	+.05
102	543X0	Electrical Power Production	.6336	.6060	−.03
103	544X0	Cryogenic Fluids Production	.5155	.5271	+.01
104	545X0	Refrigeration and Air Conditioning	.7121	.6620	−.05
105	546X0	Liquid Fuel Systems Maintenance	.6457	.6996	+.05
106	547X0	Heating Systems	.6131	.6542	+.04
107	551X0	Pavements Maintenance	.6332	.6221	−.01
108	551X1	Construction Equipment Operator	.5700	.5707	+.01
109	552X0	Carpentry	.6390	.6068	−.03
110	552X3	Mason	.6526	.6247	−.03
111	552X4	Protective Coater	.6207	.6143	−.01
112	552X5	Plumber	.6435	.6060	−.04
113	553X0	Site Development	.7969	.7513	−.05
114	554X0	Real Estate-Cost-Management Analyst	.8067	.6471	−.16
115	555X0	Programs and Work Control	.9164	.9048	−.01
116	563X0	Environmental Support	.6966	.7194	+.02
117	566X0	Entomologist	.7619	.7390	−.02
118	571X0	Fire Protection	.6350	.6503	+.02
119	581X0	Parachute Rigger	.7320	.8270	+.10
120	582X0	Fabric Leather and Rubber Products Repair	.6882	.6783	−.01
121	601X4	Packaging	.6441	.6585	+.01
122	602X0	Passenger and Household Goods	.6195	.6609	+.04
123	602X1	Freight Traffic	.6216	.6365	+.01
124	603X0	Vehicle Operator/Dispatcher	.5980	.5934	−.00
125	605X0	Air Passenger	.6518	.6231	−.03
126	605X1	Air Cargo	.6142	.6348	+.02
127	60750	Aircraft Loadmaster	.7444	.8166	+.07
128	611X0	Supply Services	.5882	.6156	+.03
129	612X0	Meatcutter	.6429	.6618	+.02
130	621X0	Baker	.4786	.5501	+.07
131	622X0	Food Service	.4924	.5158	+.02
132	622X1	Diet Therapy	.6631	.5944	−.07
133	631X0	Fuel	.6611	.7035	+.04
134	645X0	Inventory Management	.6359	.6471	+.01
135	647X0	Materiel Facilities	.6203	.5925	−.03
136	648X0	Supply Systems	.8980	.9331	+.04
137	651X0	Procurement	.6979	.8301	+.13

Table A-2. (Concluded)

Nr.	AFSC	Occupational Specialty	Tenure		
			Observed (A)	Predicted (B)	Difference (B)−(A)
138	671X1	General Accounting	.7049	1.0000[a]	+.30
139	672X0	Budget	.9412	.8599	−.08
140	672X2	Disbursement Accounting	.7678	.4819	−.29
141	691X0	Management Analysis	.8341	.8662	+.03
142	701X0	Chaplain Services	.7521	.6976	−.05
143	702X0	Administration	.5906	.6160	+.03
144	705X0	Legal Services	.8062	.7799	−.03
145	711X0	Duplicating	.7179	.7463	+.03
146	713X0	Printing–Binding	.8065	.7770	−.03
147	713X1	Photolithography	.6348	.6363	+.00
148	732X0	Personnel	.5928	.6545	+.06
149	732X1	Personal Affairs	.6485	.7433	+.09
150	734X0	Social Actions	.8842	.8800	−.00
151	741X0	Physical Conditioning	.7488	.7418	−.01
152	741X1	Recreation	.5940	.6247	+.03
153	751X0	Education	.6795	.6608	−.02
154	751X2	Training	.9449	.9352	−.01
155	753X0	Small Arms	.6649	.6089	−.06
156	791X0	Information	.6935	.7312	+.04
157	791X1	Radio and TV Broadcasting	.9028	.9078	+.01
158	811X0	Security	.5364	.5859	+.05
159	812X0	Law Enforcement	.6505	.6415	−.01
160	871X0	Instrumentalist	.6967	.6068	−.09
161	901X0	Aeromedical	.6742	.5771	−.10
162	902X0	Medical Service	.6169	.5822	−.03
163	902X2	Operating Room	.6339	.6612	+.03
164	903X0	Radiology	.7625	.7916	+.03
165	904X0	Medical Laboratory	.7155	.6829	−.03
166	905X0	Pharmacy	.6478	.5972	−.05
167	906X0	Medical Administration	.6062	.5988	−.01
168	907X0	Preventive Medicine	.6890	.7380	+.05
169	908X0	Veterinary	.7240	.7378	+.01
170	911X0	Physiological Training	.8454	.7892	−.06
171	912X4	Allergy/Immunology	.9172	.7983	−.12
172	912X5	Optometry	.7402	.7092	−.03
173	913X0	Physical Therapy	.7540	.5204	−.23
174	914X0	Psychiatric Clinic	.7227	.7123	−.01
175	914X1	Psychiatric Ward	.6453	.4759	−.17
176	915X0	Medical Material	.6842	.5958	−.09
177	921X0	Survival	.8194	.8059	−.01
178	922X0	Aircrew Life Support	.6472	.6378	−.01
179	923X0	Pararescue Recovery	.8492	.9435	+.09
180	981X0	Dental	.6692	.6693	+.00
181	981X1	Preventive Dentistry	.9289	1.0000[a]	+.07
182	982X0	Dental Laboratory	.7398	.6642	−.08
183	991X5	Combat Security Police	.7844	.0000[a]	−.78
184	991X7	Data Formatting Equipment Operator	.7581	.5361	−.22
185	991X8	Military Training Instructor	.7799	.8091	+.03
186	XXXXX	All other AFSCs	.6369	.5922	−.04

[a]Average of predicted scores falls outside of possible limits of 0 and 1. Values have been reset within 1–0 limits. Data based on 280,039 observed and 13,992 predicted scores.

END

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