

Job Satisfaction Research

There is a great deal of research evidence in the civilian sector indicating that factors related to job content and job conditions influence the decisions of individuals to stay with or leave work situations. In the Air Force, factors related to job content, assignment location, and worker-supervisor interactions are among those frequently cited by individuals for their decisions to leave the service. As we have moved into a zero-draft environment, retention of qualified workers has become an extremely important goal. Such individuals are available in limited quantities, and they are difficult to enlist, expensive to train, and hard to replace. In recognition of this, the Air Force has recently placed increased emphasis on job satisfaction research. A full-time effort in this area was initiated a little over a year

ago. Fortunately, data on two factors ("Job Interest" and "Utilization of Talents and Training") had already been collected in job inventories for over 130,000 workers in approximately 150 occupational areas. Detailed analyses of data on these two factors are currently underway, but a few observations have already been made (Gould, 1972). Extensive differences in expressed job satisfaction have been found to exist between career ladders and among individuals within career ladders. For example, in some ladders fewer than 5% of the workers report that their talents and training are not being utilized in their present work assignment; while in other career ladders, over 50% of the workers report their talents and training are being utilized "very little" or "not at all." We have conducted intensive studies in a few career ladders in which a large number of individuals report low interest and utilization, and we find that in many instances there is ample justification for such feelings (Stacy, 1973).

So far, we have been able to account only for a modest portion of the variance in attitudes among individuals within career ladders. Tables 10 and 11 report the validities of certain predictors for the interest and utilization factors. The full model includes predictors such as job difficulty, grade, time-on-job, aptitude, education, command, unit and base size, and age. All of these variables in combination yielded Rs which are only of modest size (.29 - .47). The largest and most consistent relationships are associated with the difficulty level of the work assigned and the aptitude level of the worker. These relationships are not large; but they are significant and always in the same direction. The most satisfied workers tend to be those who have the lowest relative aptitude and who are assigned to the most difficult work. In these tables, the variable "Work Difficulty" represents a least-squares weighted combination of (a) the number of tasks performed, (b) the number of tasks performed (squared), (c) the Average Task Difficulty Per Unit Time, and (d) a complex variable which is the sum of the cross-products of time spent on each task and the average grade level of all personnel in the career ladder currently performing that task.

The long-term job satisfaction research program of the Occupational Research Division involves three phases. First, we recognize that job satisfaction is multi-dimensional. We are attempting to isolate and define all significant job-related factors which should be included in our job satisfaction studies. Second, we want to determine the impact of each factor on career decisions. Finally, we want to determine how jobs and job conditions can be modified so that workers will look favorably on the Air Force as a career choice.

TABLE 10. PREDICTION OF REPORTED "UTILIZATION OF TALENTS AND TRAINING"
BY FIRST-TERM AIRMEN

Career Ladder	N	Full ^a Model	Work ^a Difficulty	No. Tasks Performed	ATDPUT ^b	Avg AI
291	862	.44	.21	.21	-.03	-.20
473	720	.36	.28	.21	.18	-.03
543	470	.40	.22	.21	.07	-.21
551	836	.45	.32	.28	.30	-.11
605	814	.43	.27	.23	.20	-.16
631	876	.36	.19	.07	.15	-.20
645	1,568	.34	.10	.05	.06	-.18
647	1,470	.34	.14	.11	.12	-.14
702	2,452	.35	.22	.20	.09	-.18
571	1,214	.29	.14	.07	.13	-.15
811	2,644	.32	.22	.15	.21	-.10

^aSee text for definition

^bAverage Task Difficulty Per Unit Time

TABLE 11. PREDICTION OF REPORTED "JOB INTEREST"
BY FIRST-TERM AIRMEN

Career Ladder	N	Full ^a Model	Work ^a Difficulty	No. Tasks Performed	ATDPUT ^b	Avg AI
291	862	.38	.18	.16	.00	-.14
473	720	.40	.26	.15	.22	-.03
543	470	.34	.16	.15	.07	-.14
551	836	.47	.28	.25	.23	-.02
605	814	.41	.28	.21	.22	-.13
631	876	.40	.24	.06	.20	-.16
645	1,568	.30	.11	.10	.04	-.06
647	1,470	.32	.16	.12	.13	-.03
702	2,452	.32	.18	.15	.09	-.08
571	1,214	.30	.19	.09	.18	-.02
811	2,644	.38	.29	.19	.27	-.06

^aSee text for definition

^bAverage Task Difficulty Per Unit Time

With respect to the first goal, we have developed a group of 330 attitude statements which we feel cover the satisfaction domain. These are being analyzed using a combination of cluster analysis, factor analysis, and regression analysis, with the goal of producing a minimum set of attitude measures which cover all important dimensions. Phase II will involve determining the impact of each attitude on the reenlistment decisions of workers in each career ladder. This turns out to be a very complex problem. In the civilian sector, one can simply administer a job attitude questionnaire to a sample of workers and, at a later point in time, relate the score values to a criterion of "1 if still on the job; 0 otherwise." In the military setting jobs are constantly being modified, and individuals are frequently moved from one location to another. We have no easy way of continuously tracking each individual and measuring changes in job content, job conditions, and job attitudes over time. Furthermore, we don't know when each individual finalizes his decision to reenlist or get out of service.

We have developed a method, based on cross-sectional data, for inferring the probable impact of a particular job attitude on the reenlistment decisions of personnel in a particular career ladder. The model is made possible by the fact that all enlistments in the Air Force have been for a 48-month period. It involves construction of a regression curve which predicts the attitude of individuals still on board at each month of military service. In order to afford some protection against the problems of interpreting cross-sectional data in a longitudinal manner, aptitude is held constant, and the regression line is drawn for those at the mean aptitude level.

To be more precise, assume that we are predicting the job interest level for a particular group. The predictors included in the equation would be as follows:

- X_1 = Months of Service (continuous)
- X_2 = 1 if $X_1 = 0-48$; 0 otherwise
- X_3 = 1 if $X_1 > 48$; 0 otherwise
- X_4 = X_1 if $X_2 = 1$; 0 otherwise (or X_1X_2)
- X_5 = X_4^2
- X_6 = X_1 if $X_3 = 1$; 0 otherwise (or X_1X_3)
- X_7 = X_6^2
- X_8 = Average Aptitude Index on the AQE

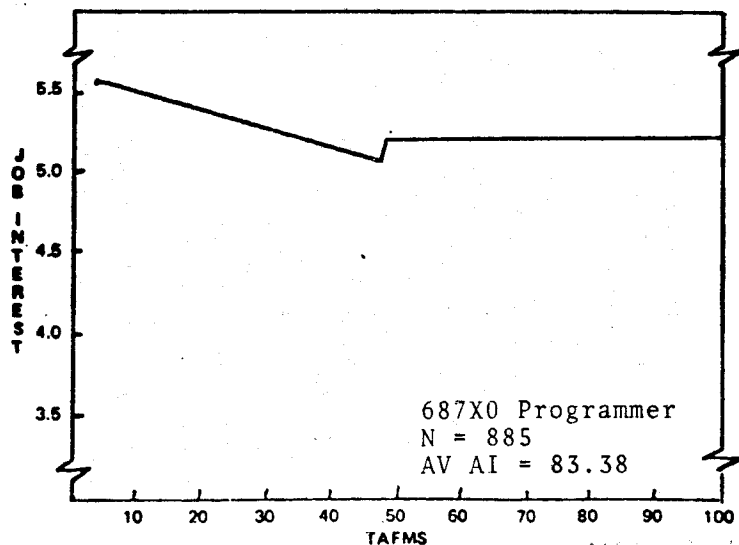
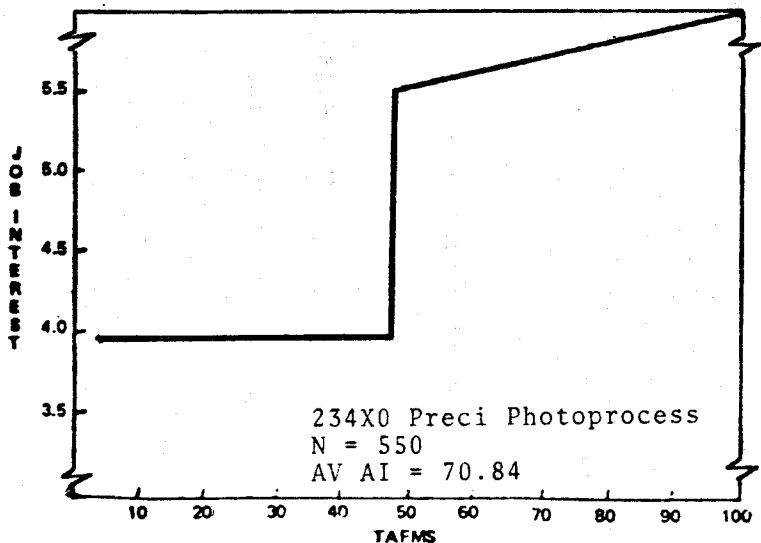
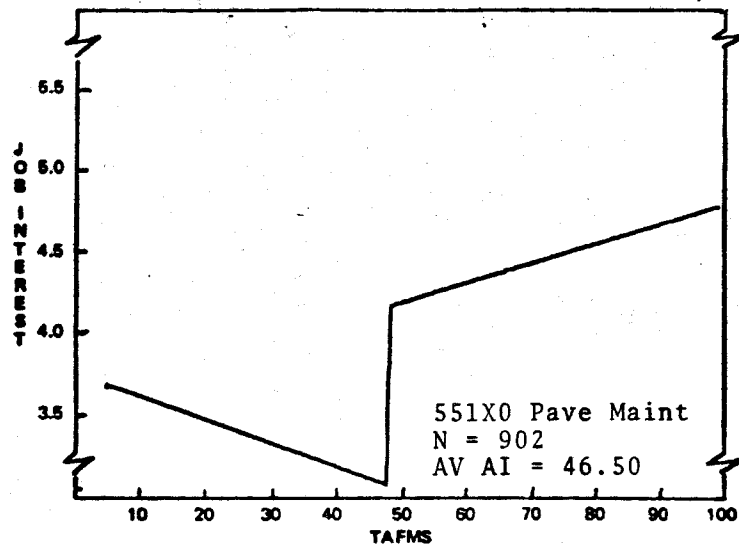
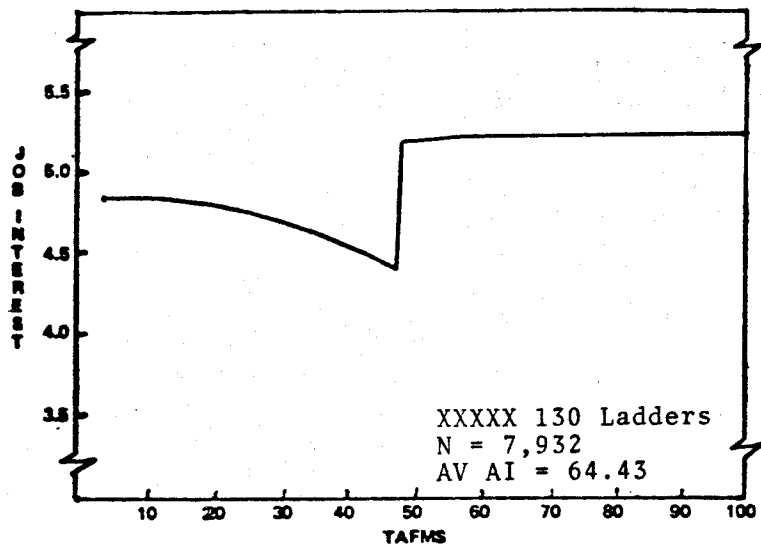


Figure 8. Job Interest versus TAFMS (Holding Aptitude Constant) for Career Fields
XXXXX, 551X0, 234X0, and 687X0

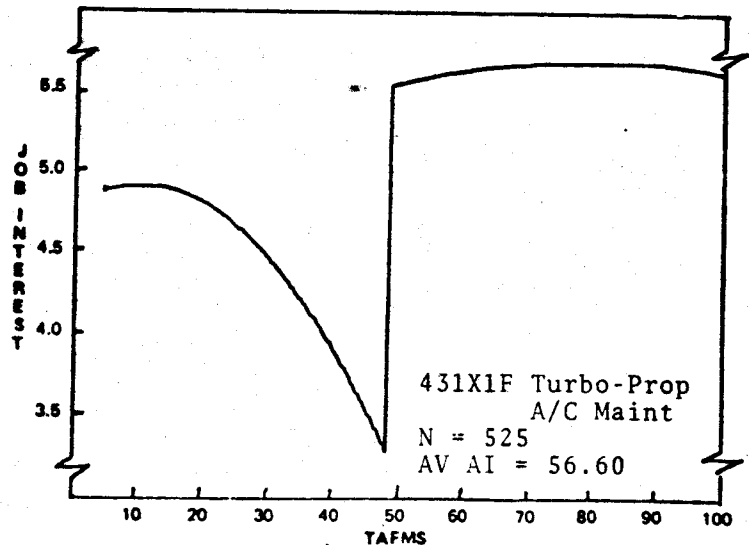
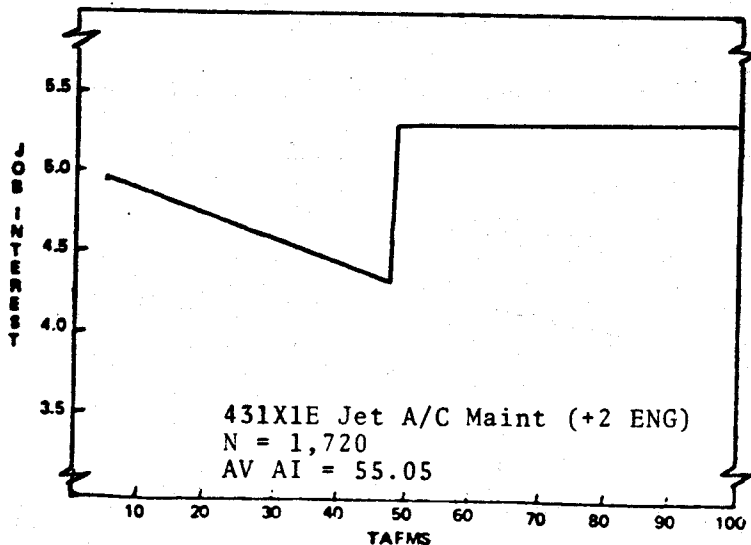
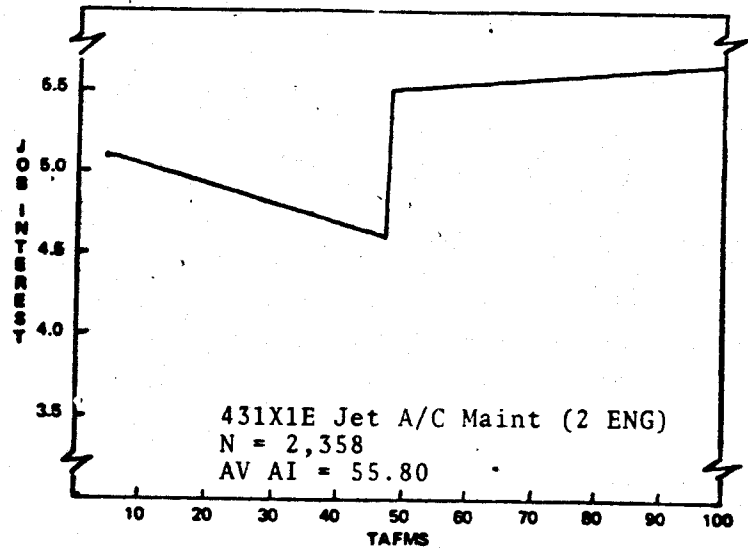
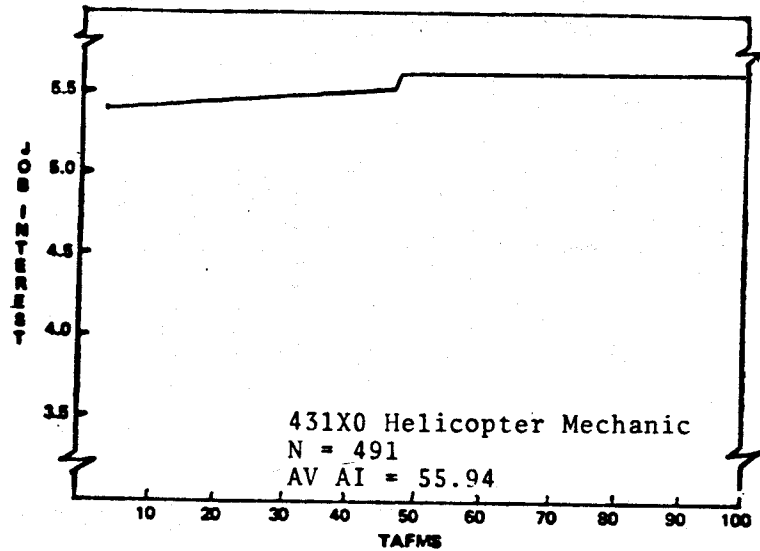


Figure 9. Job Interest versus TAFMS (Holding Aptitude Constant) for Career Fields 431X0, 431X1E, 431X1E, and 431X1F

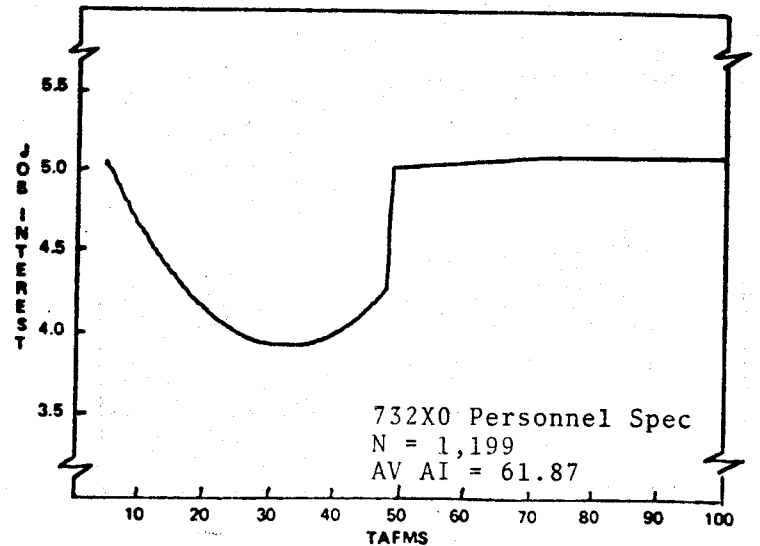
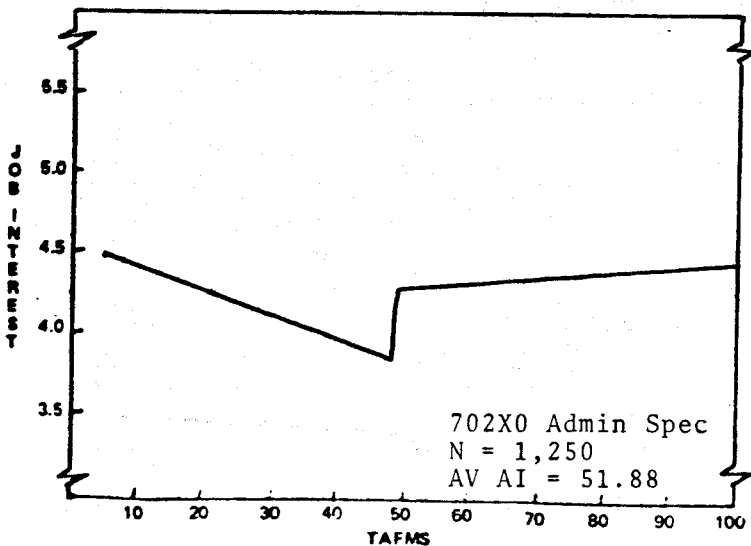
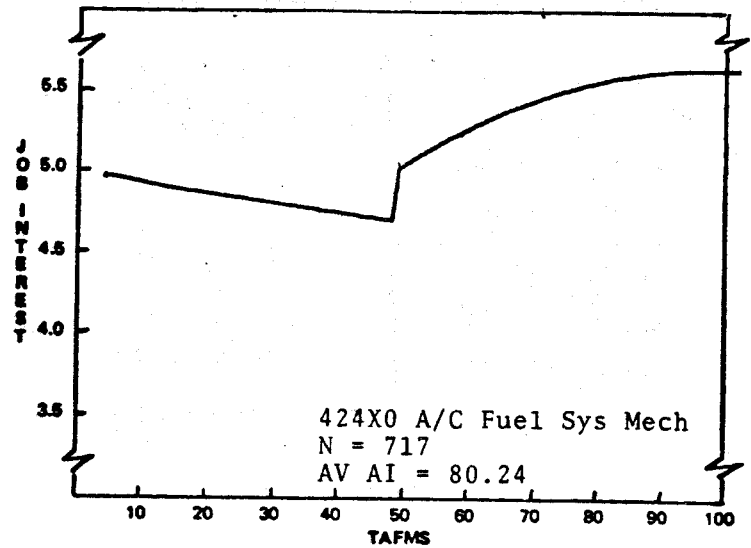
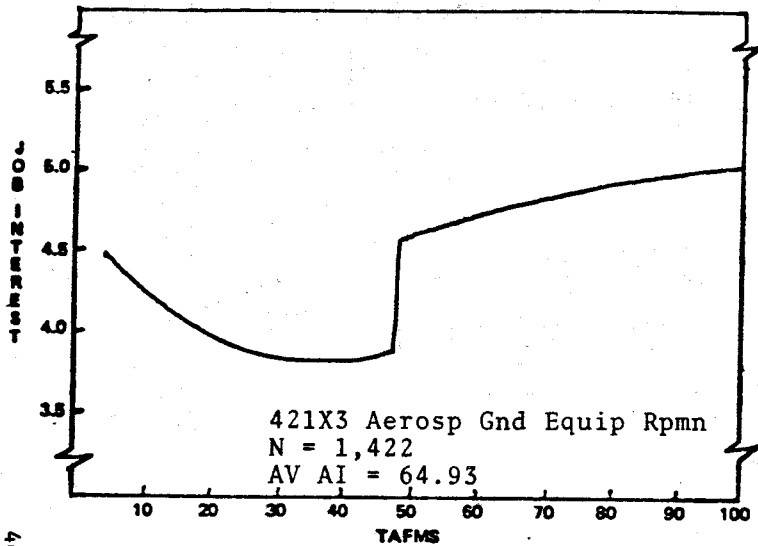


Figure 10. Job Interest versus TAFMS (Holding Aptitude Constant) for Career Fields
 421X3, 424X0, 702X0, and 732X0

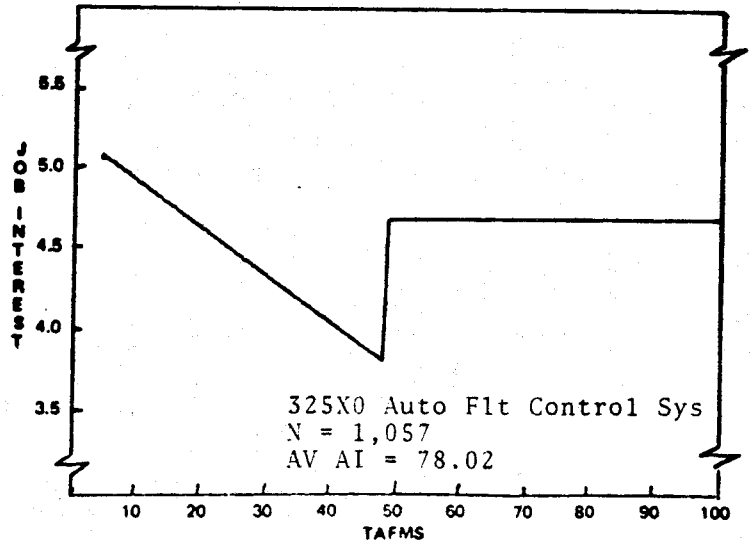
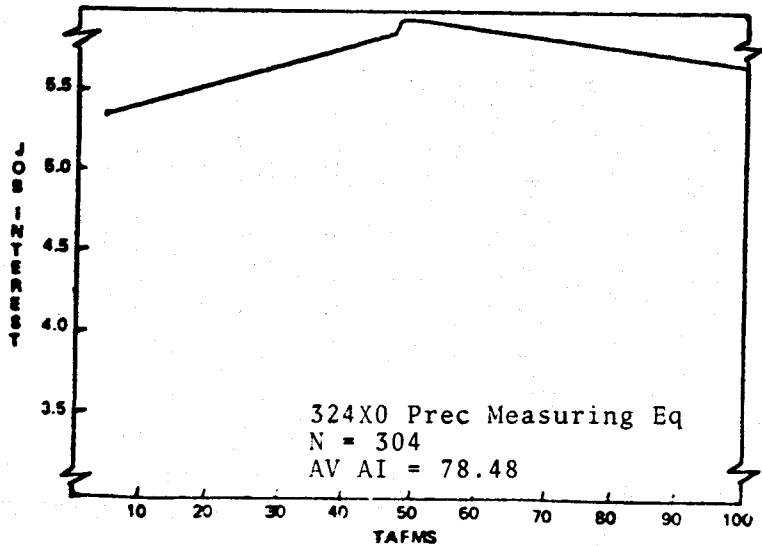
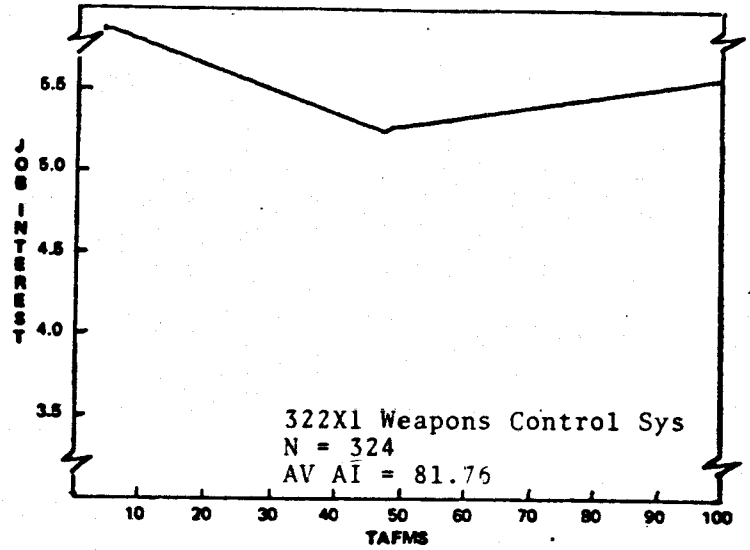
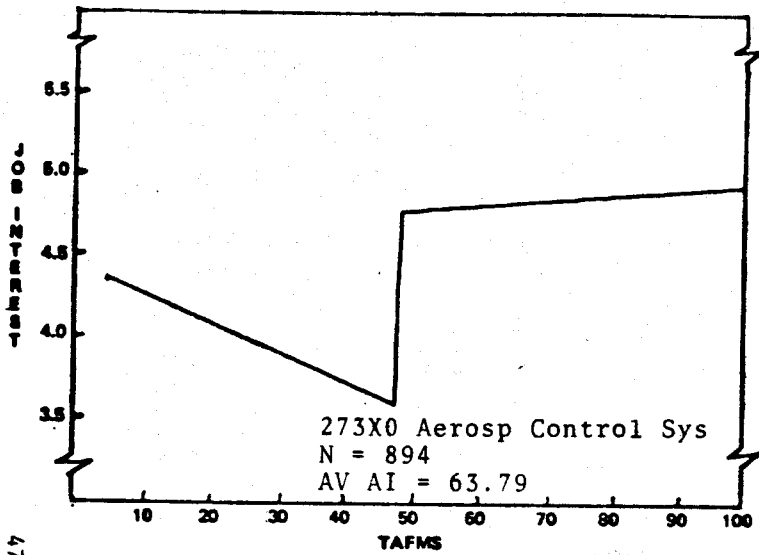


Figure 11. Job Interest versus TAFMS (Holding Aptitude Constant) for Career Fields 273X0, 322X1, 324X0, and 325X0

Note that the regression weights associated X_2 , X_4 , and X_5 will have an impact only with respect to individuals in their first enlistment. The weights associated with X_3 , X_6 and X_7 will impact only upon individuals who have elected to reenlist in the Air Force, and who are now beyond the 48th month of service.

The upper left curve in Figure 8 presents a regression curve for a subsample of nearly 8,000 cases drawn at random from 130 Air Force career ladders. Interpreting this curve in a longitudinal manner, it appears that Air Force personnel have a slight decline in job interest during their first enlistment. The jump in the curve between the 48th and 49th month of service is hypothesized to be a function of residualization. That is, those who found their jobs dull tended to get out in greater numbers than those who found their jobs interesting. One might assume that the jump in the curve simply reflects a change in attitude by individuals after they decided to reenlist; but this assumption is weakened by the observation that little or no jump occurs in the regression curves for many ladders. Regression curves for other ladders are shown in Figures 9, 10, and 11. Where little difference is noted between the level of the regression curve at the 48th and 49th month, it is assumed that efforts to make jobs more interesting may have very little impact on retention. Such is the case for the 687X0, Programmer, where individuals who left the service evidently were finding their jobs as interesting as those who reenlisted. Perhaps some other factor, such as "pay in service compared with expected pay in comparable civilian jobs" would demonstrate a larger "impact gap." If so, the service might better improve retention by special pay benefits, or by educating workers concerning the reality of pay differentials.

Hopefully, we will eventually come up with more direct measures of the impact of job attitudes on retention. In the meantime, regression analyses, such as those described above, will provide clues as to what factors may influence career decisions in each ladder.

The third phase of the job satisfaction program, which is the most exciting, will be an attempt to find out what changes in jobs and job conditions will produce positive changes in those attitudes which influence reenlistment decisions. Here the military services are in an ideal position to provide answers. Since jobs and job conditions are frequently changing, we can conduct Time 1 - Time 2 studies in which we simply relate changes in jobs and job conditions to changes in expressed attitudes.

Of course we recognize that changing jobs and job conditions is not the only approach to enhancing job satisfaction. For example,

all would agree that its better to marry a mate who is compatible than to marry one who is not, and try to change him or her. In a like manner, proper selection and classification actions can contribute toward future job satisfaction. This is not a neglected area of research, but I simply don't have time to discuss it here today. Nor do I have time to discuss the various theories of job satisfaction and relate them to our research. An excellent paper on the implications of theories for Air Force job satisfaction research is currently in press (Tuttle & Hazel, 1973).

As I mentioned earlier, factors related to job content, assignment preference, and worker-supervisor interactions are among those frequently cited by personnel for their decisions to leave the Air Force. We are currently conducting an extensive study of the preferences of individuals for assignment locations. I can report that most individuals express very strong positive and negative valences for particular assignment locations. If the services cannot assign individuals to their most preferred location, perhaps they can at least avoid assigning them to locations for which they have a strong negative valence.

The matter of supervisor-worker relationships is multi-faceted, and we will study each facet separately. One matter which should be of concern to all services is that of supervisory incompetency. We have evidence that occupational structures and personnel assignment practices can create situations where first-line supervisors have had no direct experience on critical tasks being performed by their subordinates. There is a particular danger of this occurring in complex career ladders involving numerous job types or having varied equipments to maintain.