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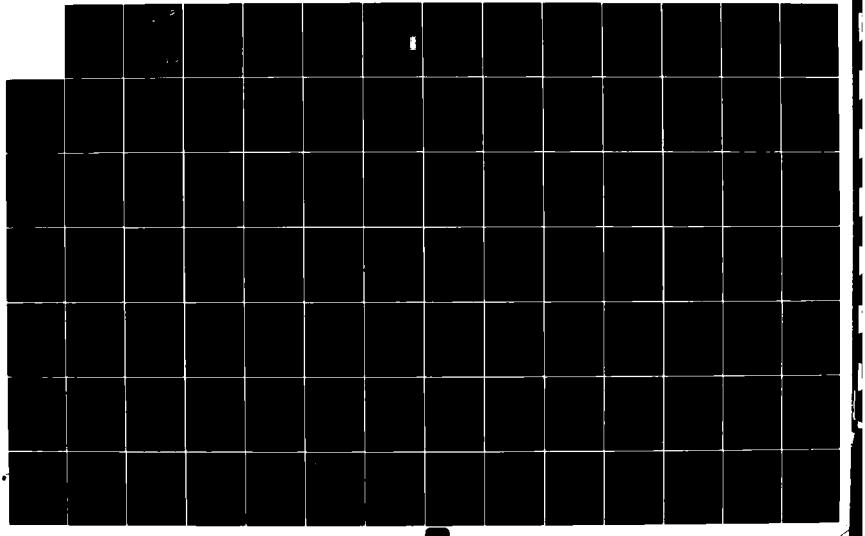

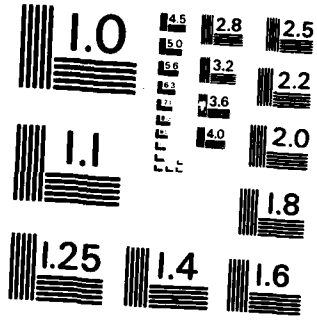

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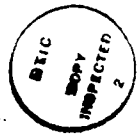

EFFECTS OF FLIGHT PAY AND COMMITMENT ON AIR FORCE PILOT APPLICANTS

Joel D. Haniford, First Lieutenant, USAF
Bobby M. Stone, Major, USAF

LSSR 16-82

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A survey was conducted on AFROTC cadets to determine the cost to the Air Force of extending the initial active duty service commitment for pilots. A literature search examined the history of the pilot retention problem, retention factors, attributes which determine quality of personnel, and policy capturing. Various statistical tests were applied to the survey responses to determine their significance. The results show that (1) significant differences exist among the survey respondents based on their demographic characteristics, and (2) as many as two years could be added to the present initial active duty service commitment at no significant cost to the Air Force.

LSSR 16-82

EFFECTS OF FLIGHT PAY AND COMMITMENT ON AIR FORCE PILOT APPLICANTS

A Thesis

Presented to the Faculty of the School of Systems and Logistics

of the Air Force Institute of Technology

Air University

In Partial Fulfillment of the Requirements for the

Degree of Master of Science in Logistics Management

By

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and

Major Bobby M. Stone

has been accepted by the undersigned on behalf of the faculty of the School of Systems and Logistics in partial fulfillment of the requirements for the degeee of

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The very essence and strength of the Air Force is the quality, career motivated people that man it. We, the Air Force leadership, must continue to make it clear that we recognize the quality of our people and that we will insist on reasonable compensation and benefits for them [1981].

— *Lew Allen, Jr., General, USAF*
Chief of Staff

CHAPTER I

INTRODUCTION

Problem Statement

Retention of U.S. Air Force pilots has been and continues to be of great concern to the Air Force. Presently, the quality and quantity of individuals desiring to enter Undergraduate Pilot Training (UPT) is sufficient to meet the current demand for pilots. Today, the Air Force is confronted with a critical problem, that of retaining the experienced pilots beyond completion of their initial commitment (Polk, 1981). The specific research of this thesis focuses on determining the cost to the Air Force of extending that initial commitment. The cost may be felt in terms of dollars, numbers of people, or quality of people.

Literature Review

Organization

This is divided into four sections. The first section will discuss the history and background of the pilot problem. The next two sections will address the problems faced by the Air Force in maintaining the quality and quantity of the pilot force. The final section will address the method used to determine the affect of flight

pay and bonuses on initial active duty commitment. The sections are:

1. History and Background--a review of past and current events, policies and statistical data concerning Air Force pilot retention.

2. Retention--factors influencing an employee's intention to remain with or withdraw from an organization.

3. Quality of Personnel--attributes which determine an individual's attractiveness to an organization.

4. Policy Capturing--a method to quantitatively represent a decision preference scheme of an individual, or group of individuals.

History and Background

In the late 1970s the Air Force became concerned at the increased rate of pilot separations. This exodus, precipitated in part by a sudden increase in hiring by the commercial airlines, continued until about 1981 (Table 1) (Wesler, 1981). The net result was a shortfall in the total pilot force, as shown in Table 2.

Since the late 1970s, congressional and public support have led to higher than normal pay raises, while national economic conditions have worsened. The result is an improvement in retention. However, another increase in hiring by commercial airlines has been projected for the 1983-1985 time frame (Wesler, 1981). This is attributed,

TABLE 1

PILOT RETENTION (SIX TO ELEVEN YEARS OF ACTIVE DUTY SERVICE)

	Sep 76	Sep 77	Sep 78	Sep 79	Sep 80	Sep 81	Dec 81*
Fighter	74	64	55	36	53	61	64
Recce	68	56	43	27	29	63	63
Interceptor	38	54	41	44	40	54	57
Trainer	43	45	33	16	35	46	48
Bomber	60	62	53	33	53	64	64
Tanker	51	44	36	21	34	48	52
Strategic Airlift	32	29	18	17	35	45	50
Tactical Airlift	52	51	33	21	41	57	60
Helicopter	45	54	51	40	75	67	62
Mission Support	47	40	34	9	34	26	23
Overall	51	48	38	26	42	54	57

*12 months of data ending 31 Dec 81.

NOTE: The figures for FY 76 through FY 79 contain accounting adjustments to remove, or normalize the effects of special early release programs. Due to the expiration of these programs, a return to actual, or unadjusted, rates has been made beginning with FY 80 statistics. Since some of the improvement in retention between FY 79 and FY 80 is due to this accounting change, comparisons of FY 80 and later rates with prior years should be used with caution. (Rates as of 31 Dec 1981.)

TABLE 2

PILOT SHORTAGE PROJECTION AS OF 25 JUNE 1981

	FY 81	FY 82 (est)	FY 83 (est)
Total Requirements	23,408	23,729	23,866
Inventory	22,160	22,342	22,607
Shortfall	-1,248	-1,387	-1,259

in part, to a large number of anticipated retirements. The forecasted hiring is for 1000 to 2000 pilots per year for several years.

Excessive turnover increases replacement costs and inhibits organizational effectiveness. Decreasing experience levels has a negative impact on force readiness. New accessions cannot immediately replace the lost experience. Therefore, retention is the key and is not a subject to be looked at only when retention rates are low.

Training an individual pilot is expensive, as much as one million dollars, depending on the particular aircraft he or she flies (see Table 3). Obviously, the Air Force would like to maximize the return on this investment. Two methods for decreasing turnover have been studied by the Air Force: increasing pay and increasing commitment.

Aviation Bonus. The first solution to the retention problem was to increase incentive pay for pilots. In

TABLE 3

PILOT TRAINING COST SUMMARY[1] (Zimmerman, 1982)

Weapon System	UPT[2]	Initial Qual[3]	PUP[3]	Total[4]
SAC				
B-52D	187,844	314,031	292,011	793,886
KC-135		92,372	95,971	379,187
FB-111		756,237	--	944,081
MAC				
C-5	187,844	197,263	117,075	502,182
C-141		94,853	55,728	338,425
TAC				
F-15	187,844	779,500	79,000	1,046,344
F-16		939,780	71,000	1,198,624
A-10		551,200	74,200	813,244

NOTES

1. Source HQ MAJCOM/ACM average cost/graduate using an undergraduate pilot training (UPT) input (no requalification). MAJCOM developed costs are consolidated by AF/ACMS.

2. 1979 dollars.

3. 1980 dollars.

4. Does not include mission qualification (in-unit, air refueling, air drop, etc.) or survival training costs.

1980, Congress authorized an annual aviator bonus and an increase in aviation career incentive pay (flight pay) (Hogle, 1981). The aviator bonus was a good, short-term measure aimed at relieving the aviator shortages. However, bonuses are funded on an annual basis and are subject to Congressionally mandated discriminatory implementation and can fluctuate with retention trends. Thus, they entail a great deal of uncertainty.

The flight pay increase was approved for all branches of service. The Air Force did not receive the aviator bonus because of its request to include navigators, as well as pilots, as recipients. Congress denied the request. The Navy, on the other hand, did receive the bonus for its pilots and naval flight officers (Addabbo, 1981). The bonus amount varied based on years of aviation service and years of obligation accepted and was limited to approximately $7,000 annually.

Increased Commitment. The second solution to the retention problem was to increase the initial active duty service commitment (ADSC) for pilots.

An Officer Survey of March 1977 indicated that increasing the ADSC would not adversely impact on pilot recruitment or retention (AF/DPX, 1977). Seventy-four percent of the respondents stated that they would have accepted a two-year increase in initial ADSC, everything

else remaining the same. After analysis by AF/DPX on the TOPLINE static model of long-range impacts, a one-year increase in ADSC from five to six years commitment was implemented. It was determined that this one-year increase improved stability and experience by approximately 12 percent, whereas a two-year increase added only another four and one-half percent increase.

Retention

Retention's impact is best measured by its negative aspect, turnover. Research on the causes of turnover has focused on job satisfaction and job commitment as predictor variables.

Job Satisfaction. Job satisfaction is defined as "possitivity of affect toward one's job [Farrell and Rusbult, 1981]." It is primarily a function of the rewards and costs associated with the job. Rewards (positive affectors) and costs (negative affectors) can be thought of as on a continuum. Thus, variables such as pay, opportunity for promotion, autonomy, variety, and assignments are either rewards or costs depending on the individual's perceptions of equity (Farrell and Rusbult, 1981).

Equity theory assumes that employees compare their inputs, costs, and rewards on the job with those of coworkers or reference groups. Basic to the equity theory

formulation is the notion of distributive justice; that is, maintaining between persons performing similar tasks a common ratio in the distribution of rewards and investments pertaining to that task (Adams, 1963). Adams defines inequity as follows:

> Inequity exists for Person whenever his perceived job inputs and/or outcomes stand psychologically in an obverse relation to what he perceives are the inputs and/or outputs of Other [Adams, 1963].

Presumably, a person desires to maintain a psychological state of equity, and when inequity exists, a condition of tension is created. The person will attempt to balance his or her equity ratio (inputs to outcomes) either by increasing or decreasing his or her inputs or outcomes (Adams, 1965). Equity comparisons serve to determine the degree of satisfaction or dissatisfaction which then apparently serves as an input into decisions to remain or search for other job alternatives.

Dittrich and Carrell (1979) conducted a field study to determine if a relationship exists between equity, satisfaction, and absenteeism or turnover. The following definitions were used by Dittrich and Carrell in their study.

> PAYLEVEL -- perceptions of the fairness of one's pay relative to others' pay outside of the employing organization.
> PAYRULES -- perceptions of the fairness of one's pay relative to one's co-workers and the fairness of the rules for granting pay increases and promotions.

WORKPACE -- perceptions of fairness of the supervisor in maintaining a fair pace of work activities.
PAYADMIN -- perceptions of the fairness of the supervisor in administering the rules for pay raises and promotions.
RULEADMIN -- perceptions of the fairness of supervisors in maintaining acceptable forms of general behavior in the workplace [Dittrich and Carrell, 1979].

The study found that only PAYRULES and WORKPACE are significant (Multiple R = .58) fairness elements affecting the expressed satisfaction of employees. These findings indicate that job satisfaction is most strongly influenced by equity comparisons made inside rather than outside the organization since both measures are internal organization comparisons.

Employee satisfaction measures in this study did not relate significantly to employee turnover. This finding is supported by numerous other studies (Farrell and Rusbult, 1981). Employee perceptions of PAYLEVEL, an outside the organization comparison, was the only measure that demonstrated a significant relationship to turnover ($r = .42$).

Job Commitment. Job commitment has been defined in terms of identification with the involvement in an organization (Hom et al., 1979); a congruence between one's real and ideal job, and a reluctance to seek alternate employment (Koch and Steers, 1978). It is a function of the rewards and costs derived from the job (satisfaction), the quality of job alternatives, and the magnitude

of the individual's investment in the job (Farrell and Rusbult, 1981; Porter et al., 1974).

Increases in salary have been shown to be associated with increased commitment to the organization, and greater intent to remain in one's position. "Salary was taken to be the basic and most important extrinsic reward provided by the organization [Pfeffer and Lawler, 1980]."

If salary were the only component of job commitment, then the casual observer might believe that commitment and satisfaction are highly correlated. This is not necessarily true. Since high commitment may be caused by poor job alternatives or large investments as well as by high satisfaction, it is possible that a worker may be dissatisfied with his job but still remain highly committed to it (Farrell and Rusbult, 1981).

Investments by the individual into the organization may take place without a conscious effort on his or her part. An initial investment is made when the individual decides to accept employment with the organization. Involvement with peers within the organization, length of employment, position in the organization, and the age of the individual are other types of investment (Marsh and Mannari, 1977; Sheldon, 1971).

Sheldon (1971) conducted a study of scientists and engineers working for a research laboratory. Using

three indices to measure investments, age, length of service, and position, she tested two hypotheses.

1. Investments will produce commitment to the organization, regardless of other features of the relationship of the person to the organization.
2. Social involvements will produce commitment to the organization [17:144].

She found there were three distinct groups. The first group consisted of newer, younger men, with low professional skills and low social involvements. This group lacked commitment to both the organization and their profession. The second group consisted of men with medium length of service and a higher level of professional competence. This combination produced commitment to the profession, but not to the organization. Those from this group who left the organization went into a very similar type job with another orgranization. Thus, they were rejecting the organization and not the job. For this group, social involvements help produce commitment to the organization. The third group consisted of older, tenured men that were highly committed to the organization and less committed to the profession. Older men presumedly become increasingly involved in administrative duties, decreasing their professional skills and commitments. These findings were supported by Buchanan (1974), emphasizing the social involvements for the second group which he termed stage two.

Job alternatives have been found to be negatively related to job commitment. If the individual's job alternatives are poor, as in an oversupply of similarly qualified workers or reduced demand for a particular skill, commitment to his or her current organization should become greater. Alternative value is defined as the quality of the best available alternative to the current relationship (Farrell and Rusbult, 1981).

The availability of job alternatives affects an individual's degree of commitment to his or her organization and may require the individual to expend additional cognitive energy to justify why he or she is remaining with the organization. The rejection of an outside offer, whether tangible or perceived, is itself an increased commitment (Pfeffer and Lawler, 1980).

Persons without job alternatives were found by Pfeffer and Lawler (1980) to be less sensitive to the effects of extrinsic rewards on their attitudes toward the organization, perhaps because they have accepted their position and extrinsic rewards are no longer a factor. Those with job inquiries have a better understanding of their value and their attitudes are more strongly related to the extrinsic rewards provided by the organization. Thus, it is under conditions of the availability of job alternatives that extrinsic rewards become more important.

Farrell and Rusbult (1981) have developed a model, which they call the investment model, which combines the effects of rewards, costs, job alternatives, and investments to evaluate an individual's level of commitment to the organization. They conducted a study in which the four factors were experimentally manipulated, and satisfaction, commitment and turnover were measured. It was hypothesized that job commitment would increase with increases in rewards and investments, and decrease in job costs and alternative value. They found that job commitment was best predicted by a combination of job reward and cost values ($r = .38$), alternative value ($r = .39$), and investments ($r = .41$). While job satisfaction concerns the employee's affective responses to the job, job commitment is additionally influenced by the quality of job alternatives and the magnitude of the employee's direct and indirect investment in his or her job. Job commitment was more closely related to turnover than was job satisfaction. These findings are in complete agreement with their investment model and previous literature (Porter et al., 1974).

Quality of Personnel

Quality, as defined in Webster's New Collegiate Dictionary, is "a peculiar and essential character; an inherent feature; degree of excellence; and, superiority

in kind." Quality as a goal is the character most everyone strives to attain or acquire.

Quality is not a tangible asset that can be directly observed, rather it must be inferred when judging people. How then is quality defined as it applies to human beings? How is it measured? Can it be predicted?

Lieutenant Colonel Joe Ramsey (1982) said that the Air Force has no formal definition of quality, and while measures must be used, consistent measures are hard to define. In the past, the Air Force used mainly quantitative measures, such as, the Air Force Officer Qualification Test (AFOQT) and college grade point average (GPA), to determine the probability of success in UPT. These measures were found to be inconsistent and their validities have been questioned. Within the past year, the Air Force conducted a survey of Officer Training School (OTS) graduates who were successful and unsuccessful in UPT to try to determine if a commonality of traits existed. The study discovered two qualitative factors of significance in those that were successful, and one in those that were unsuccessful (Table 4).

According to Lieutenant Colonel Ramsey, the most significant factor common to graduates of UPT was the attainment of a private pilot's license prior to entering UPT. It is hypothesized that if a person has the inner drive to obtain a pilot's license on his own, this drive

TABLE 4

OTS SUCCESS RANKING IN UPT (HQ/ATC/RSC, 1982)

	Age	Degree Type	Private Pilot License	Probability of Success
1.	Young	Tech	Yes	99
2.	Young	Tech	No	96
3.	Old	Tech	Yes	95
4.	Young	Nontech	Yes	93
5.	Old	Nontech	Yes	77
6.	Young	Nontech	No	76
7.	Old	Tech	No	71
8.	Old	Nontech	No	69

*Young < 25 years old; old $\geq$ 25 years old.

will also make him/her a successful pilot in the Air Force. The second factor of significance, for both successful and unsuccessful candidates of UPT, was the type of degree conferred. The "hard-technical" degrees, engineering and mathematics, were consistent factors in those completing UPT. This is not saying that everyone completing UPT had a pilot's license or a hard-technical degree, but that if a person has either or both, their probability of success is much higher.

The factor of significance in those unsuccessful was a combination of age and college degree. It was found

that an older person, twenty-five years or older, with a "soft" degree was more likely to be unsuccessful in UPT, a soft degree being in the nontechnical fields such as the social sciences.

The study did not discard the quantitative factors as being insignificant. However, the qualitative factors outweighed the quantitative in the determination of probability of success.

Policy Capturing

Judgement Modeling Concept. The fundamental premise of the Judgement Modeling Concept, of which policy capturing is a subset, is that it is possible to represent subjective human judgement with objective mathematical models. The judgement process is defined as the process of forming an opinion or evaluation by discerning and comparing. If one makes many judgements of the same nature, it would be logical to assume the same set of evaluations and comparisons should be carried out in each decision situation. This consistent use of the same set of evaluations and comparisons could be classified as a model or policy for making all judgements of a particular nature (Gooch, 1972).

Quantification in some mathematical form of this policy is the essence of policy capturing. Basically, policy capturing involves the attempt to quantify a

decision maker's preferences. The manner in which the judge, subject, or policy maker formulates his policy and the reasons behind his decisions are of no concern in developing the policy equation (Looper, 1981).

The Brunswikian Model. The conceptual model for the Regression Approach to judgement modeling was first proposed by Egor Brunswik in 1952. The model has been used extensively by psychologists, academic institutions, industrial organizations, and military organizations to analyze human judgement (Gooch, 1972; Hendrix, 1974; Harrell, 1975).

The essential elements of the model are summarized in Figure 1. The elements of the model presented in Figure 1 have been defined by Hendrix (1974) and Harrell (1975) as follows:

Y_e = the true, or criterion, value for the portion of the environment about which the judge is concerned, usually referred to as the "distal variable."

$\hat{Y}_e$ = the optimal statistical prediction of the distal variable, Y_e, obtained from regression analysis of the relationship between the cues (X_i's) and Y_e.

R_e = the multiple correlation coefficient, which indicates the degree to which the cues can serve as sources of information about the value of Y_e.

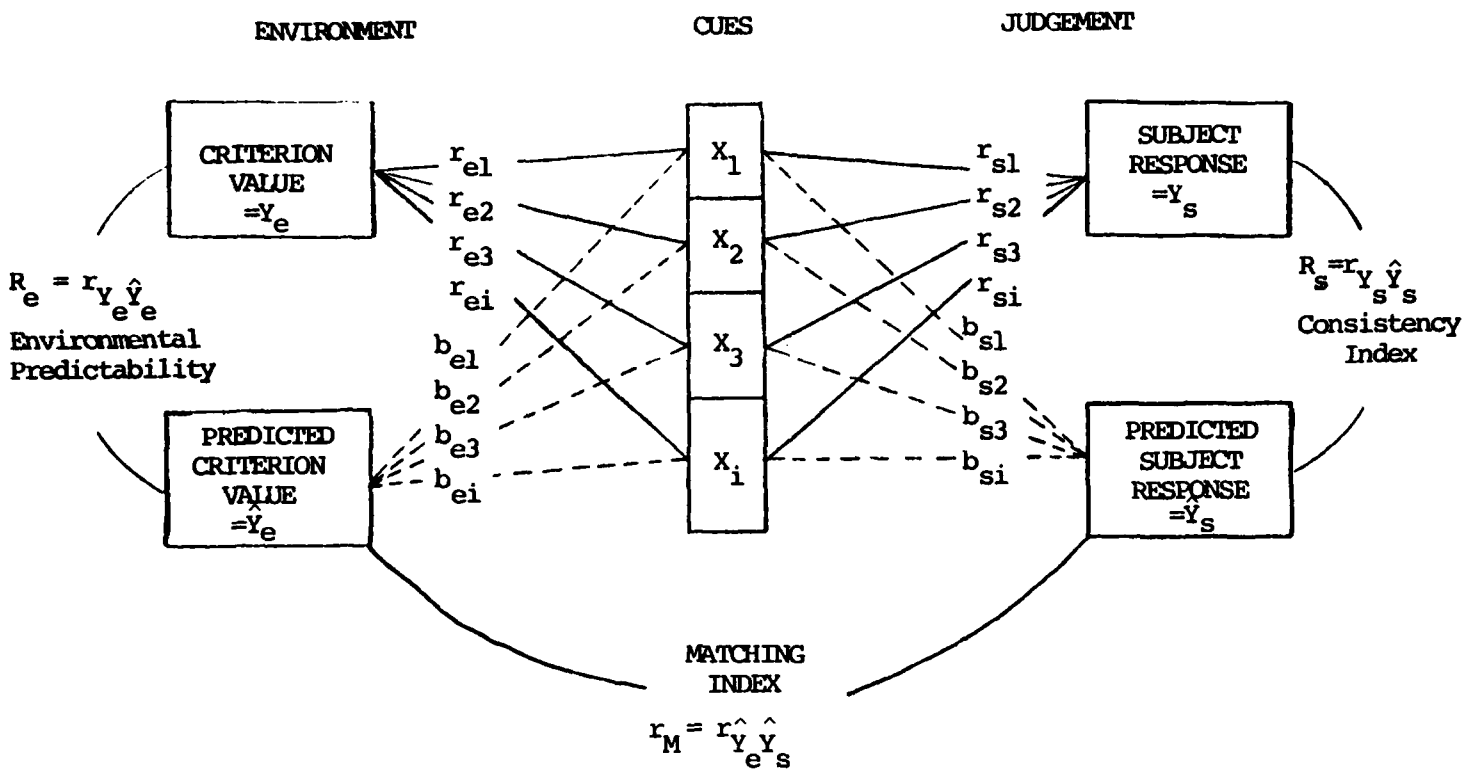


Fig. 1. Diagram of Lens Model Showing Relationship Among Cues, Criteria and Subjects' Responses (Modified from W. H. Hendrix, 1974 and A. M. Harrell, 1975).

r_{ei} = the relationship between Y_e and X_i. This relationship is called the validity coefficient and is determined by correlating repeated occurrences of the cue and the distal variable.

b_{ei} = the optimal weight to be placed upon each cue in determining $\hat{Y}_e$. These values are respective beta weights associated with each cue.

X_i = an item of information, or cue, which is used to judge the current state, or predict the future state, of Y_e.

Y_s = the individual's judgement about the state of Y_e based on the cues.

$\hat{Y}_s$ = the optimal prediction of Y_s, obtained from regression analysis of the relationship between the cues and Y_s.

R_s = the multiple correlation coefficient indicating the relationship between $\hat{Y}_s$ and Y_s.

r_{si} = the relationship between the cues and the individuals' judgement about Y_s. It is called the utilization coefficient and indicates the extent to which an individual uses the X_i to predict Y_e.

b_{si} = the beta weights associated with each cue as a result of the relationship between the cues and Y_s.

R_m = the multiple correlation coefficient indicating the relationship between $\hat{Y}_e$ and $\hat{Y}_s$.

Of particular importance in the analysis is the value of Y_s compared to Y_e. Y_s and Y_e may differ for two reasons. First, if the relationship between the distal variable (Y_e) and the cues (X_i's) is imperfect or ambiguous. Second, they may differ if the judge does not utilize all the available cues in an optimal manner (Harrell, 1975).

No attempt will be made to review the research in human judgement that is associated with the Brunswikian Lens Model. Those desiring such a review can read Slovic and Lichtenstein's research (1971).

A Case Study of Graduate Admissions. Robyn M. Dawes (1971) introduced judgement modeling to the academic world with a study of applicant ratings for graduate school admissions. The admissions committee normally would select applicants based on three criteria provided by the applicant and the quality of the undergraduate institution. The criteria were undergraduate grades, aptitude test scores, and letters of recommendation.

The study was conducted at the Department of Psychology of the University of Oregon. The sample consisted of 111 students who had been admitted between the fall of 1964 and the fall of 1967, who had not dropped out of the program for nonacademic reasons (Dawes, 1971).

Dawes found that the behavior of the admissions committee could be simulated by a linear combination of

the criteria it considered. The use of simple multiple regression analysis identified the combination of grade point average and quality of the institution as being the more significant of the variables.

Dawes also found that not only could she simulate the behavior of the admissions committee, but under certain circumstances the paramorphic representation (mathematical regression equation) of the judges is more valid than the actual ratings given by the judges. In fact, the representation accounts for approximately twenty-five times as much variance as does the judgement per se. Table 5 shows the correlations of the parametric representation (PR) and the average rating by the admissions committee (AR) with the student rating given after one year by the faculty board (SR) (Dawes, 1971).

TABLE 5

CORRELATIONS BASED ON ACCEPTED APPLICANTS AT END OF FIRST YEAR

Variable	SR	PR
SR	--	--
PR	.51	--
AR	.10	.54

The behavior of the admissions committee can be simulated by the equation: .0032GRE+1.02GPA+.0791. The paramorphic representation was: .0006GRE+.76GPA+.2518QI. GRE is the score on the Graduate Record Examination, GPA is the overall undergraduate grade point average, and QI is an index of the quality of the undergraduate institution, as taken from A Comparison Guide to American Colleges.

Thus, Dawes was able to not only simulate, but improve upon the behavior of the admissions committee. It has been suggested that this is due to the unreliability of the judges in their rating process. The representation showed that the admissions committee did not place sufficient weight on the quality of the undergraduate academic institution and too much weight on the overall grade point average.

Applications in Air Force Organizations. The policy capturing model has been applied in many studies by the Air Force Personnel Research Laboratory (Christal, 1965). This review will examine two of the more prominent works. The first has become a classic in the field of judgement modeling, the Officer Grade Requirements Project. The second, Cadet Performance Rating: A Study of Rater Policies, attempted to show that a policy equation developed for one group is accurate over time and for other similar groups.

Officer Grade Requirements Project. The Officer Grade Requirements (OGR) Project may be the largest effort involving the capturing and implementation of policy in an operational setting (Christal, 1965). The Director of Manpower and Organization asked the Personnel Research Laboratory to develop a "scientific system for determination of officer grades [Christal, 1975]." The project was to be conducted in three phases: (1) obtain policy decisions concerning the appropriate grades for a selected "criterion" sample of jobs, (2) develop an OGR policy equation to predict grade ratings given by the Policy Board to jobs in the criterion sample, and (3) application of the OGR policy equation to jobs remaining in the Air Force population to determine the total distribution of officer grade requirements.

Descriptions were received from 79,750 officers in grades of lieutenant through colonel. From these, a criterion sample of 3,575 descriptions was selected and rated by a USAF Policy Board. The board was composed of twenty-two experienced colonels from all major air commands who had a clear concept of the meaning of military grade as related to Air Force jobs. The board members were asked first to rate the appropriate grade level for a job and then to indicate on a three-point scale their level of confidence in their ratings.

Analysis of the ratings revealed that: (1) the board members were confident in their grade ratings, in only 59 of the 3,575 rated jobs did the board have little or no confidence in their ratings; (2) board members were not biased toward jobs in particular commands or specialties; (3) board members agreed with each other concerning the appropriate grade levels for particular jobs; and (4) board members did not give inflated ratings and did not simply confirm current Unit Manning Document authorizations. Each job was rated on its own merit.

A policy equation was developed using nine variables selected from more than a hundred potential predictors. The equation was tested against the grade ratings provided by the Policy Board with a correlation coefficient of .92. This equation was applied to determine the appropriate grade requirements for an additional 10,000 officer jobs.

Finally, the results of the above allowed for projection to the remaining population of officer jobs.

With its implications on the establishment of Air Force officer grade requirements, the OGR study illustrates an important application of the policy capturing model.

Cadet Performance Rating. This study was an extension of an earlier research project utilizing the Cadet Performance Report at the United States Air Force

Academy for analysis. That study, referred to as Phase I, found that although individual raters applied their own policies consistently, policies varied widely between raters. Also, rater's stated policy differed widely from the policy they actually employed as identified through the policy capturing technique (Taylor and Wilsted, 1975).

Taylor and Wilsted (1975) had two objectives in Phase II. First, they wanted to replicate the findings of Phase I over an extended time. Secondly, they wanted to more systematically analyze the rating process itself as it is used by various subgroups of the entire population.

Their focus was on internal rater consistency; sample versus population relationships; rating differences between squadrons, classes and rating periods; and the predictability of ratings.

The sample consisted of 500 cadet performance ratings from the fall semester of 1973 and the entire populations of ratings from the spring and fall semesters of 1973.

Phase II data confirmed Phase I findings that internal rater consistency was high and interrater consistency low. For example, acceptance of authority was more significant in the case of the fall semester sophomore class while cooperation was most significant for the spring semester freshman class. This, it was hypothesized,

was possibly a reflection of the different structure of responsibility and training objectives (Taylor and Wilsted, 1975).

Overall ratings largely reflected three of the ten performance factors: leadership, cooperation, and duty performance. Their analysis indicated that there was a high intercorrelation among the performance factors and that the employment of only two or three of the ten could actually represent most of them through the intercorrelation. Variance in overall ratings was consistently explained on the basis of only two or three cues for every subset of the data. With Phases I and II providing evidence of inconsistencies, a new rating system has been developed and tested (Taylor and Wilsted, 1975).

Conclusion. Policy capturing appears to be a viable analytic tool having wide application and important implications for policy makers as well as for those who must execute organizational policies (Christal, 1967).

Research Objectives and Hypotheses

There are two major objectives to be accomplished by this research effort.

Objective 1

Develop a global policy equation for predictive purposes.

Hypothesis 1. There is no relationship between the maximum active duty service commitment the cadets were willing to accept and:

(a) flight pay

(b) year bonus begins

(c) bonus amount

Hypothesis 2. There is no relationship between the attractiveness of an Air Force contract and:

(a) flight pay

(b) commitment

Objective 2a

Capture the policies of Air Force ROTC cadets concerning flight pay and commitment so as to determine the relationships for each demographic group.

Hypothesis 3. For a given combination of flight pay and active duty service commitment, there is no difference in perceived job attractiveness:

(a) between prior military and non-prior military cadets.

(b) between male and female cadets.

(c) between married and single cadets.

(d) among cadets from different geographic areas of the United States.

(e) between white and non-white cadets.

Objective 2b

Capture the policies of Air Force ROTC cadets concerning flight pay and commitment so as to determine the effects on the quality and length of the queue as pay and commitment vary.

Hypothesis 4. The quality of cadets desiring to enter the Air Force pilot career field remains constant as flight pay and commitment vary.

Objective 2c

Capture the policies of Air Force ROTC cadets concerning flight pay and commitment so as to determine the effects of their perceptions of rewards and costs on their policies.

Hypothesis 5. The perceived level of actual pay for Air Force pilots has no effect on the cadets' policies towards pay and commitment.

Hypothesis 6. The perceived level of actual initial commitment for Air Force pilots has no effect on the cadets' policy towards pay and commitment.

Hypothesis 7. The perceived attractiveness of an Air Force flying career is not related to the length of commitment a cadet would be willing to accept.

CHAPTER II

METHODOLOGY

Survey Subjects

Universe

The U.S. Air Force has three commissioning programs: Reserve Officer Training Corps (ROTC), Officer Training School (OTS), and the United States Air Force Academy (USAFA). Table 6 shows the proportion of new accessions into UPT from each of the three (Whalen, 1982).

TABLE 6

PROPORTION OF NEW ACCESSIONS TO UPT

	Program			
Year	ROTC	OTS	USAFA	Total
1980(act.)	38% (641)	27%(446)	35%(597)	100%(1684)
1981(act.)	44% (925)	28%(577)	28%(587)	100%(2089)
1982(est.)	34% (766)	40%(892)	26%(595)	100%(2253)
1983(est.)	34% (803)	40%(958)	26%(639)	100%(2400)
1984(est.)	46%(1063)	25%(584)	29%(660)	100%(2307)

Population

The Air Force Manpower and Personnel Center, Office of Retention Studies and Reports (AFMPC/MPCHS)

requested a survey of only ROTC cadets. The belief is that the OTS and USAFA training environments are so intense that the responses may reflect more emotion than rationale (Polk, 1981).

Sample Size

The AFROTC program includes 153 detachments in 45 different states, Puerto Rico, and the District of Columbia. Of these, 147 detachments have pilot selectees in their program at the present time. Initially, the population was believed to consist of 2259 cadet juniors and seniors enrolled as pilot selectees in college/university Air Force ROTC programs (Howland, 1982). However, many detachments indicated that, due to attrition, the number of cadets in their pilot program was less than that indicated by HQ/AFROTC. Thus, the actual population was something less than 2259 cadets. The sample size chosen for the survey was approximately 1400 cadets.

Sampling Plan

HQ/AFROTC divides all ROTC detachments intc five geographical areas. Approximately 1400 surveys were mailed out, representing 62 percent of the total population. An equal proportion of cadets was selected from each area to ensure all areas had equal weight. Table 7 shows the number of pilot selectees in each area, the proportionate sample size for each area, and the number of

TABLE 7

SAMPLE DISTRIBUTION BY GEOGRAPHIC AREA

Area	Total Cadets	Cadets Surveyed (% of Total)	Cadets Responded (% of Total)	Total Detachments	Detachments Surveyed (% of Total)	Detachments Responded (% of Total)
WE	503	306(61%)	102(20%)	31	13(42%)	9(29%)
SE	498	312(63%)	198(40%)	30	12(40%)	11(37%)
OV	393	247(63%)	120(31%)	27	13(48%)	10(37%)
NE	497	305(61%)	187(38%)	34	14(41%)	13(38%)
MW	368	224(61%)	141(38%)	25	11(44%)	10(40%)
Totals	2259	1394(62%)	748(33%)	147	63(43%)	53(36%)

detachments in each area. Appendix D contains a list of the colleges/universities surveyed. The response rate was less than expected but still resulted in a significantly high proportion of the total population of cadets (33 percent). The response rate was low for several reasons: some schools were nearing final exams when the surveys were received; three other surveys were distributed by HQ/AFROTC and HQ/AFMPC to AFROTC detachments at the same time this survey was distributed; schools with large enrollments had difficulty getting all cadets together at one time to administer the survey.

The detachments were selected in the following manner. First, the largest detachment from each state was represented. Then, the largest remaining detachments from each area were selected to bring the total for each area up to the desired 62 percent of its population.

After the detachments were selected, the number of public versus private schools was examined to ensure a sufficient number of each was obtained. Table 8 shows a sample size of 17 percent of the total private school cadet population and a sample size of 37 percent of the total public school cadet population.

TABLE 8

SAMPLE DISTRIBUTION, PUBLIC VERSUS PRIVATE

Area	Total Cadets	Cadets Surveyed (% of Total)	Cadets Responded (% of Total)	Total Detachments	Detachments Surveyed (% of Total)	Detachments Responded (% of Total)
Public	1818	1211(67%)	675(37%)	115	57(50%)	48(42%)
Private	441	183(41%)	73(17%)	32	6(19%)	5(16%)
Totals	2259	1394(62%)	748(33%)	147	63(43%)	53(36%)

Instrument

Variables Defined

The following variables are defined as they were used in the survey instrument.

Active Duty Service Commitment. This is the number of years a pilot is obligated to serve on active duty upon completion of UPT.

Flight Pay. Flight pay is a monthly pay entitlement, separate from normal pay and allowances, authorized for persons on flight status. Receipt of flight pay begins during flying training and continues throughout one's career.

Bonus. A bonus is an annual incentive pay, separate from normal pay and allowances and flight pay, authorized for persons in certain designated career fields. A bonus for pilots would begin a certain number of years after UPT and continue throughout one's career.

Profiles. These are combinations of varying amounts of data in a number of different cues. Each profile was to be considered separate and distinct from all others.

Survey Description

The data collection instrument was titled Air Force Pilot Career Field Survey. The survey instrument was divided into four sections: (I) and (II) Decision Making; (III) Background Information; and (IV) Comments. For ease and accuracy of data transfer and analysis, an optical scan answer sheet was used. A copy of the survey instrument is attached as Appendix A.

Section I consisted of 90 different profiles with varying levels of flight pay, year bonus begins, and bonus amount. The respondents were asked to provide the maximum active duty service commitment they would be willing to accept given those conditions. Section II consisted of 57 different profiles with varying levels of flight pay and years of active duty service commitment. The respondents were asked to indicate, on a nine-level scale, the attractiveness of each profile. Section III consisted of demographic information and questions intended to elicit the respondent's attitude towards a military career. Section IV was provided as blank space for respondent comments.

Survey Development

The survey instrument was developed by the authors of this thesis. The initial consideration was that the respondents had some general understanding of

the variables used in the survey. In addition, it was assumed that they had weighed the existing career opportunities in both the military and the civilian sectors prior to deciding to join the Air Force ROTC program. Finally it was assumed that the respondents could understand the survey instructions and completed the survey in an honest and candid manner. The use of policy capturing requires no assumptions concerning why each decision was made.

The values of the cues; flight pay amount (FP), bonus amount (BAMT), and year bonus begins (BYR), were developed with the assistance of the Air Force Human Resources Laboratory (AFHRL/MOMD), Brooks AFB, Texas. The Section I cues were developed with the parameters and correlations as shown in Table 9.

TABLE 9

PARAMETERS AND CORRELATIONS OF CUES PROVIDED BY HRL

Cue \ Parameter	Mean	Deviation	Correlation BAMT	Correlation BYR
BAMT	4500	225.00	--	--
BYR	9	1.78	+0.5	--
FP	375	125.00	-0.5	+0.01

The AFHRL provided 300 profiles. The survey length was minimized as much as possible without sacrificing sufficient data for a meaningful policy capturing

exercise. Table 10 shows the parameters and correlations of the 90 profiles used.

TABLE 10

PARAMETERS AND CORRELATIONS OF CUES USED IN SECTION I OF SURVEY INSTRUMENT

Cue \ Parameter	Mean	Deviation	Correlation BAMT	Correlation BYR
BAMT	4457	205.87	--	--
BYR	8.95	1.833	+0.51	--
FP	374.4	122.8	-0.54	-0.007

Section II cues were developed by AFMPC/MPCHS. The cue values were orthogonal with 0.0 between-cue correlation. A uniform distribution was used to develop the individual cue values. The range used for flight pay was from $100 to $1000. The range used for commitment was four years to sixteen years.

The survey was administered to a number of fellow graduate students to determine the total time required for survey instruction and completion. Survey revisions were made based on constructive comments as to clarity of instruction and format.

The difference in presentation between Sections I and II was designed to allow analysis of the impact of the presence and absence of an annual bonus.

Procedures

Instructions to Professor of Aerospace Studies (PAS)

To provide as much consistency in survey administration as possible, a separate instruction letter was addressed to each PAS. This letter stressed the importance of administering the survey to the cadets collectively so as to preclude collaboration and maximize the number of returned surveys. Feedback from several ROTC detachments indicated that it was not always possible to administer the surveys collectively due to time constraints.

Instructions to Subjects

The policy capturing exercise in Sections I and II of the survey instrument had an appearance that was very different from typical opinion surveys. Therefore, the survey instructions were described in great detail. A transparency sheet containing additional examples was provided to the PAS to complement those examples in the survey instrument. A random selection of returned surveys revealed that respondents followed instructions by marking the example profiles. This added familiarity with the policy capturing technique was felt to be necessary prior to proceeding with Sections I and II.

Data Analysis

Statistical Method

Multiple regression analysis was chosen to effectively analyze the relationships among the several variables. Multiple regression allows the researcher to study the linear relationship between a set of independent variables and a dependent variable while allowing for interrelationships among the independent variables (Nie et al., 1975).

> The multiple regression model has been used to capture policies of judges with respect to their responses to a set of multiple characteristic stimuli. Each stimulus is defined by several characteristics which are quantitatively measured. Every judge is then required to respond to each of the stimuli by providing an overall numerical evaluation [Adler et al., 1980].

For Section I of the survey, commitment was the dependent variable and flight pay, year bonus begins, and bonus amount were the independent variables. For Section II of the survey, attractiveness was the dependent variable and flight pay and commitment were the independent variables.

In evaluating the group for statistical analysis, the authors had two main goals. The first was to only run tests on those subjects that were consistent in their answers to Sections I and II. That is, to use only those people who had a consistent policy. The second goal was to use at least half of the total surveys returned in each

section's analysis. Both goals were easily met for Section II analysis. The Multiple R cutoff was 0.75 and 606 of the 748 returned surveys exceeded that cutoff value. For Section I a tradeoff was necessary to meet the goals. In order to keep at least 50 percent of the surveys for the analysis, the Multiple R cutoff was set at 0.60. This allowed analysis on 377 of the 748 returned surveys.

The answer sheets were optically scanned and recorded on magnetic tape by AFMPC/MPCYPS, Randolph AFB, Texas. The data manipulation and multiple regression analysis were performed using the Statistical Package for the Social Sciences (SPSS) (Nie et al., 1975; Hull and Nie, 1981).

Regression Coefficient, B

The regression coefficient, B, is the weight associated with the independent variable (X) in the determination of the value of the dependent variable (Y). That is to say, ". . . B, stands for the expected change in Y with a change of one unit in X. . . [Nie et al., 1975]." The sign of B indicates the direction of the change in Y with a change in X. If B is positive, there exists a positive relationship. For example, as X increases, Y increases. If B is negative, there is an inverse relationship. For example, as X increases, Y decreases.

Multiple Regression Coefficient, Multiple R

The Multiple R measures the nature of the linear relationship between the independent variables and the dependent variable. In this respect it is much like B. However, unlike B, the multiple correlation coefficient is scaleless. The value will always be between -1.0 and +1.0. A Multiple R value near or equal to 0.0 implies no linear relationship exists between the dependent variable and the independent variables. The closer Multiple R approaches 1 or -1, the stronger the linear relationship (McClave and Benson, 1979), with a +1 or -1 indicating perfect prediction with no error.

Hypothesis Testing

Each hypothesis was tested using one of the following techniques at a given significance level (α). The significance level is the probability of rejecting the null hypothesis when it is true (type I error). The significance level should be the smallest probability that will be accepted as reasonable. If a type I error is very serious, the significance level should be set very low (.01 or .001). However, if a type II error (accepting the null hypothesis when it is false) is worse, the significance level should be higher (.05 or .10) (Nie et al., 1975).

F-ratio. The test to determine if all B's in the regression model are 0.0 is the Global-F or F-ratio. The F-ratio is also used in the ANOVA test to determine if two or more samples respond to a treatment in a similar manner. The F-ratio is computed differently for different tests, but it is always interpreted the same. If the F-ratio is greater than the F-table value, then reject the null hypothesis. If the F-ratio is less than the F-table value, then do not reject the null hypothesis.

Student's t-Test. This is a test to determine if the difference between two sample means is significant. The goal of the analysis is to determine if a difference between two samples is significant. If the significance level is greater than the SPSS calculated F 2-tail prob, reject the null hypothesis that the variances are equal. A nonparametric test for the equality of sample means would have to be conducted using separate variance analysis. If the significance level is less than the F 2-tail prob, do not reject the null hypothesis that the variances are equal. A parametric test for the equality of means would be conducted using pooled variance analysis.

Analysis of Variance, ANOVA. When a researcher wants to compare two or more populations to determine if they respond to a treatment in a similar manner, he/she will compare the ratio of within variance by between

group variance to see if at least one group's mean is different than the others. The F-ratio is computed using SPSS. If the F-ratio is less than the F-table value, then do not reject the null hypothesis that all samples responded in a similar manner. If the F-ratio is greater than the F-table value, then reject the null hypothesis that the samples responded in a similar manner. The researcher would then test to determine which sample responded differently from the others. The test used when the sample sizes are unequal is the Modified LSD (least squares difference) test calculated using SPSS. In this test a range for each sample's mean is calculated at the 0.05 significance level. A homogeneous subset is one whose highest and lowest means do not differ by more than the shortest significant range calculated for that subset. If any mean is significantly different from the others, it will not be included in that subset.

CHAPTER III

DATA ANALYSIS RESULTS

Introduction

The material presented in Chapter II provided the operational definitions and methodology used in the data analysis. This chapter presents the results of the data analysis in terms of the research objectives and hypotheses in Chapter I.

Each research objective and hypothesis is restated below, followed first by a brief description of the statistical test used to accomplish the analysis and then the analysis results. All hypothesis testing was based on the assumptions that the sampled population was normally distributed and that the samples were random and independent. The SPSS was used for all computations. The statistical printouts for all research objectives and hypotheses are located in Appendix F.

Objective 1

The goal of this objective was to develop a global policy equation for predictive purposes.

Test

Multiple regression was used to develop two global policy equations. In the first equation, the responses to

Section I of the survey were the dependent variables and the profile values for that section were the independent variables. The second global equation was developed in the same manner using Section II responses and profiles.

Results: Policy Equation
(Section I)

The following equation represents the cadets' policy for commitment (C) as related to varying levels of flight pay (FP), year bonus begins (BYR), and bonus amount (BAMT). The Multiple R was .4041 and the R-Square was .1633.

$$C = 2.6003 + .0128(FP) - .0821(BYR) + .0005(BAMT)$$

Results: Policy Equation
(Section II)

The following equation represents the cadets' policy for attractiveness (A) as related to varying levels of flight pay (FP) and commitment (C). The Multiple R was .7402 and the R-Square was .5479.

$$A = 4.8063 + .0059(FP) - .2908(C)$$

Hypothesis 1

There is no relationship between the maximum active duty service commitment the cadets were willing to accept and (a) flight pay, (b) year bonus begins, or (c) bonus amount.

Test. Correlation coefficients (r) were computed using the responses to Section I of the survey as the dependent variable. The profile values for flight pay, year bonus begins, and bonus amount from Section I of the survey were the independent variables. The statistical test is shown in Table 11.

TABLE 11

CORRELATION

H_o: dependent variable is not correlated with the independent variable

H_a: dependent variable is correlated with the independent variable

Test statistic: $$r_{CALC} = \frac{SS_{xy}}{\sqrt{SS_{xx}\ SS_{yy}}}$$

Rejection region: $/r_{CALC}/ > r_{\alpha,n-2,\text{number of variables}}$

where: $r_{.05,375,3} = .127$ $r_{.01,375,3} = .157$ (Section I)

$r_{.05,604,2} = .083$ $r_{.01,604,2} = .108$ (Section II)

Results: Flight Pay. Since $r_{CALC}(.32647)$ is greater than both r_α values, the above hypothesis was rejected.

Results: Year Bonus Begins. Since $r_{CALC}(.11868)$ is less than both r_α values, the above hypothesis was not rejected.

Results: Bonus Amount. Since r_{CALC}(.02517) is less than both r_{α} values, the above hypothesis was not rejected.

Hypothesis 2

There is no relationship between the attractiveness of an Air Force contract and (a) flight pay or (b) commitment.

Test. Correlation coefficients (r) were calculated using the responses to Section II of the survey as the dependent variable. The profile values for flight pay and commitment from Section II of the survey were the independent variables. The statistical test is shown in Table 11.

Results: Flight Pay. Since r_{CALC}(.58995) is greater than both r_{α} values, the above hypothesis was rejected.

Results: Commitment. Since r_{CALC}(-.44251) is greater than both r_{α} values, the above hypothesis was rejected.

Objective 2a

The goal of this objective was to capture the policies of Air Force ROTC cadets concerning flight pay

and commitment so as to determine the relationships for each demographic group.

Hypothesis 3

For a given combination of flight pay and active duty service commitment, there is no difference in perceived job attractiveness (a) between prior military and non-prior military cadets, (b) between male and female cadets, (c) between married and single cadets, (d) among cadets from different grographic areas of the United States, or (e) between white and non-white cadets.

Test. A t-Test comparing each group's responses to the other's responses was performed for all these hypotheses except 3d. A Oneway ANOVA was performed on Hypothesis 3d to determine if a difference existed among the geographic areas. The responses to Section II of the survey served as the basis for all comparisons. The statistical tests are shown in Tables 12 and 13.

TABLE 12

t-TEST

H_o: $\sigma_1^2 = \sigma_2^2$	H_o: $\mu_1 = \mu_2$
H_a: $\sigma_1^2 \neq \sigma_2^2$	H_a $\mu_1 \neq \mu_2$

Test statistic: 2 tail probability value

Rejection region: α > 2-tail probability value

where: $\alpha = .10$; $\alpha = .05$

TABLE 13

ONEWAY ANOVA

H_o: $\mu_1 = \mu_2 = \ldots = \mu_k$

H_a: At least two treatment means differ from each other

Test statistic: $F_{CALC} = \frac{\text{mean square for treatments}}{\text{mean square for error}}$

Rejection region: $/F_{CALC}/ > F_{\alpha,(k-1),(n-k)}$

where: $F_{.05,2,373, \text{ and } 604} = 3.00$

Results: Prior and Non-Prior Military. Since the 2-tail probabilities for variance (.668) and mean (.216) were greater than an α of .10 and .05, the above hypothesis was not rejected.

Results: Male and Female. Since the 2-tail probabilities for variance (.872) and mean (.947) were greater than an α of .10 and .05, the above hypothesis was not rejected.

Results: Married and Single. The 2-tail probability for variance (.293) was greater than an α of .10 and .05. However, the 2-tail probability for mean (.010) was less than an α of .10 and .05. Therefore, the above hypothesis was rejected.

Results: Geographic Areas. Since F_{CALC}(3.798) was greater than F_{α}, the above hypothesis was rejected. Two different subsets were formed. One subset included areas WE, MW, and OV. The other subset included areas WE, MW, SE, and NE. A listing of colleges and universities comprising each area is contained in Appendix D.

Results: White and Non-White. The 2-tail probability for variance (.643) was greater than an α of .10 and .05. However, the 2-tail probability for mean (.045) was less than an α of .10 and .05. Therefore, the above hypothesis was rejected.

Objective 2b

The goal of this objective was to capture the policies of Air Force ROTC cadets concerning flight pay and commitment so as to determine the effects on the quality and length of the queue as pay and commitment vary.

Test

Hypothesis 4 addressed the issue of quality of the queue. The final issue, that of queue length, was resolved by using the SPSS command CROSSTABS. First, three different scenarios were developed by holding year bonus begins and bonus amount to three fixed levels. The amount of flight pay was then varied within each of the scenarios. Next, each cadet's policy equation was computed by

multiple regression. Finally, the number of years of commitment each cadet was willing to accept for these scenarios was determined by inserting the predetermined independent variable amounts into each cadet's policy equation. The CROSSTABS command then grouped the cadets as to commitment versus pay. The results of the three scenarios are shown in Appendix E.

Hypothesis 4

The quality of cadets desiring to enter the Air Force pilot career field remains constant as flight pay and commitment vary.

Test. Quality of cadet can be defined by many variables and in many combinations. Three different ways of defining quality were chosen to analyze this hypothesis. First, the cadets were grouped as to top, middle, or bottom third of the total based on a ranking of their score on the pilot portion of the AFOQT. Second, the verbal and math scores on the AFOQT were combined for each cadet. The cadets were then grouped as to top, middle, or bottom third of the total. Finally, cadets were grouped as to academic major and flying experience. Engineering and science majors were categorized as hard degrees while all others were categorized as soft degrees. Cadets with any type of civilian aeronautical license or rating were categorized as flyers while all others were categorized as

non-flyers. A cross-matching of categories then produced three groups: cadets with hard degrees who fly; cadets with either hard degrees or who fly, but not both; and, cadets with soft degrees who do not fly.

A Oneway ANOVA was performed on each of the three ways of defining quality to determine if a differnce existed between or among the groups. The responses to Section I of the survey served as the basis for all comparisons. The statistical test is shown in Table 13.

Results: Pilot AFOQT Score. Since $F_{CALC}(1.271)$ was less than F_{α}, the above hypothesis was not rejected.

Results: Verbal and Math AFOQT Scores. Since $F_{CALC}(.118)$ was less than F_{α}, the above hypothesis was not rejected.

Results: Pilot's License and Degree. Since $F_{CALC}(.081)$ was less than F_{α}, the above hypothesis was not rejected.

Objective 2c

The goal of this objective was to capture the policies of Air Force ROTC cadets concerning flight pay and commitment so as to determine the effects of their perceptions of rewards and costs on their policies.

Hypothesis 5

The perceived level of actual pay for Air Force pilots has no effect on the cadets' policy towards pay and commitment.

Test. The cadets were categorized into two groups based on their responses to Item 162 of the survey. Those who answered correctly ($35,000) were placed in one group and all others were placed in another group. A t-test comparing each group's responses to both Sections I and II of the survey was performed to determine if a difference existed between the two groups. The statistical test is shown in Table 12.

Results: Air Force Pay (Section I). Since the 2-tail probabilities for variance (.623) and mean (.108) were greater than an α of .10 and .05, the above hypothesis was not rejected.

Results: Air Force Pay (Section II). Since the 2-tail probabilities for variance (.812) and mean (.471) were greater than an α of .10 and .05, the above hypothesis was not rejected.

Hypothesis 6

The perceived level of actual commitment for Air Force pilots has no effect on the cadets' policy towards pay and commitment.

Test. The cadets were categorized into two groups based on their responses to Item 165 of the survey. Those who answered correctly (6 years) were placed in one group and all others were placed in another group. A t-Test comparing each group's responses to both Sections I and II of the survey was performed to determine if a difference existed between the two groups. The statistical test is shown in Table 12.

Results: Commitment (Section I). The 2-tail probability for variance (.718) was greater than an α of .10 and .05. However, the 2-tail probability for mean (.011) was less than an α of .10 and .05. Therefore, the above hypothesis was rejected.

Results: Commitment (Section II). The 2-tail probability for variance (.832) was greater than an α of .10 and .05. However, the 2-tail probability for mean (.011) was less than an α of .10 and .05. Therefore, the above hypothesis was rejected.

Hypothesis 7

The perceived attractiveness of an Air Force flying career is not related to the length of commitment a cadet would be willing to accept.

Test. Correlation coefficients (r) were computed using the mean commitment for each cadet's responses in Section I as the dependent variable. The responses to Item 161 of the survey were the independent variables. The statistical test is shown in Table 11.

Results: Attractiveness. Since r_{CALC}(.08051) was less than both r_{α} values, the above hypothesis was not rejected.

CHAPTER IV

DISCUSSION, CONCLUSION, AND RECOMMENDATION

Introduction

This research effort sought to determine what the cost would be to the Air Force of extending the initial active duty service commitment for persons entering the pilot career field. The Air Force Pilot Career Field Survey, developed by the authors, was used as the data base for all conclusions. A combination of several statistical procedures was used to determine significant differences and relationships of the sampled population.

This chapter offers some interpretations of the data analyses. First, the findings of the data analyses are discussed with regard to the research objectives. Then, conclusions are presented which highlight the practical implications of the research findings. Finally, the chapter concludes with a recommendation for follow-on research.

Discussion

Both research objectives were accomplished by this research effort. As is true of most questions about human nature, no single best answer exists nor does any one answer always apply to all people in the population.

However, the sample size was large enough to allow inferences, or generalizations, to be made about the total population.

Objective 1

Since the survey had two decision-making sections it was possible to generate two global regression equations. As presented in Chapter III, the two global equations are:

$$C = 2.6003 + .0128(FP) - .0821(BYR) + .0005(BAMT)$$

$$A = 4.8063 + .0059(FP) - .2908(C)$$

Various amounts of each variable could be inserted in these equations to determine either a maximum number of years of commitment (Section I equation) or an attractiveness level for a proposed contract (Section II equation). Table 14 shows three levels of flight pay, year bonus begins, and bonus amount which were used in the first equation. The resulting numbers represent the maximum number of years of commitment the cadets would be willing to accept under those circumstances. It is interesting to note that 7.7 years of commitment would be offered for $400 per month in flight pay and no accompanying bonus. This very closely resembles the flight pay situation presently in existence which only requires a six-year commitment. The other bonus year and bonus amounts shown were

TABLE 14

MAXIMUM NUMBER OF YEARS OF COMMITMENT

Year Bonus Begins	Bonus Amount	Flight Pay		
		$200	$400	$600
0	0	5.2	7.7	10.3
6	$3600	6.5	9.0	11.6
6	$4800	7.1	9.6	12.2

intended to closely resemble those being proposed by the Air Force in 1981 (Hogle, 1981).

Table 15 shows three levels of flight pay and commitment which were used in the second equation. Various amounts of flight pay and commitment were introduced to the equation to determine the applicable attractiveness level perceived by the cadets. The scale of attractiveness, as presented in the survey, is shown in Table 16. By themselves, the numbers are difficult to interpret. For example, at $400 flight pay and eight years of commitment, the cadets' rating shows a 4.8 level of attractiveness. This becomes significant when compared to the average results of Item 148 of the survey. In this item, the cadets were asked to identify the minimum attractiveness rating they would accept in an Air Force contract. The result was an average value of 4.7 on the attractiveness scale. Since the 4.8 rating in Table 15 is higher

TABLE 15

ATTRACTIVENESS OF PROPOSED CONTRACT

	Flight Pay		
Commitment	$200	$400	$600
6 years	4.2	5.4	6.6
8 years	3.7	4.8	6.0
10 years	3.1	4.3	5.4

TABLE 16

ATTRACTIVENESS SCALE

Level of Attractiveness		Numerical Value
Unattractive	- Extremely	1
	- Very	2
	- Moderately	3
	- Slightly	4
Neutral	-	5
	- Slightly	6
	- Moderately	7
	- Very	8
Attractive	- Extremely	9

than the average 4.7 rating, the implication is that the cadets, on average, would accept $400 flight pay and 8 years commitment. This very closely resembles the $400 flight pay and 7.7 years commitment as determined by the first equation.

The results from Hypothesis 1 show that flight pay was significantly correlated with commitment. However, neither year bonus begins nor bonus amount showed any significant correlation to commitment. It cannot be stated with any certainty why these results were obtained, although it should be noted that a number of cadets' comments revealed a distrust or disbelief in any hint of a bonus. Many stated that they would rather see more flight pay than bonus because flight pay was more reliable.

The results from Hypothesis 2 showed that both flight pay and commitment were significantly correlated with attractiveness. Commitment had a negative correlation, which means that as commitment goes up, attractiveness goes down. This is as expected.

Objective 2a

Five different demographic groups were examined in Hypothesis 3 to determine the amount of homogeneity in the sampled population. It was determined that no significant difference existed between males and females or between

prior and non-prior military. Significant differences did exist, however, in the other three demographic groups.

In a test of differences between married versus single cadets, the married group had a significantly higher attractiveness rating (4.9) than did the single cadets (4.6). In other words, married cadets perceived any given combination of flight pay and commitment to be more attractive than did single cadets.

A significant difference was also found to exist between white and non-white cadets. In this group the white cadets had a significantly higher attractiveness rating (4.6) than did the non-white cadets (4.3).

In the final demographic group cadets from different areas of the United States were found to exist in two homogeneous subsets. The first subset consisted of cadets from the West (WE), the Midwest (MW), and Ohio Valley (OV). This group had mean attractiveness levels of 4.52, 4.47, and 4.36 respectively. The other subset consisted of cadets from the West (WE), Midwest (MW), Southeast (SE), and Northeast (NE). Their mean attractiveness levels were 4.52, 4.47, 4.74, and 4.77 respectively. This implies that cadets from the Ohio Valley had significantly lower attractiveness ratings than did those from the Southeast and Northeast.

The overall implication is that as commitment goes up, a larger proportion of dissatisfaction will be expressed by single, non-white, or Ohio Valley cadets.

Objective 2b

The results of Hypothesis 4 were important in that no significant differences existed among or between any of the groups based on quality. In other words, any variance in flight pay and/or commitment would result in no change in the relative composition of cadets.

The results of length of queue, shown in the first three tables in Appendix E, were not designed to be tested statistically. The amounts used for bonus amount and year bonus begins in the global equation were also used for the CROSSTABS in this analysis. Flight pay amounts were varied to cover a range which encompassed the actual amount existing now. The top number in each block represents the actual number of cadets who said they would accept exactly the years of commitment shown to the left of the column if given the amount of flight pay shown at the top of the column. The bottom number in each block represents the percent of cadets in each block out of the total number of cadets in that column. As explained in Chapter III, these results were obtained by inserting various amounts for flight pay, year bonus begins, and bonus amount into each cadet's individual regression equation. The resulting

value for commitment determined which block the cadet was placed in. Three different scenarios are provided for comparison purposes. It is apparent by looking at the CROSSTABS results that the number of people in the queue vary as flight pay and commitment vary. It cannot be stated statistically that the variance is significant.

The last table in Appendix E, Comparison: Length of Queue, was developed from the first three tables to highlight the changes in length of queue as commitment and flight pay vary. The percentages in the table represent the percent of the sampled group that would accept a commitment equal to or less than that shown on the left for each given amount of flight pay and bonus shown at the top. It was interesting to note that the percentage for 8 years commitment, $600 flight pay, and zero bonus (74.9 percent) was very close to the percentage for 8 years, $400 flight pay, and $4800 bonus (75.5 percent). While the percentages are similar, a difference of $2400 in annual outlays exists between the two groups.

Objective 2c

The results of Hypothesis 5 showed that the cadets' responses were not affected by their knowledge, or lack of knowledge, of the existing pay scale for a married pilot with 6 years of service. Therefore, prior knowledge of the actual amount of money one will earn makes no difference in

the years of commitment one will accept for a given amount of flight pay.

The results of Hypothesis 6 were just the opposite of those for Hypothesis 5. The cadets' responses were affected by prior knowledge of actual commitment. In Section I, those who knew the actual initial active duty commitment had a mean commitment response of 8.24 years as compared to 8.83 for the other group. In Section II, those with prior knowledge of actual commitment had a mean attractiveness rating of 4.60 as compared to 4.89 for the other group. It is interesting to note that 14.3 percent of the cadets analyzed in Section I and 13.9 percent of the cadets analyzed in Section II did not know the length of the actual initial active duty service commitment. All cadets surveyed had already signed their contract with the Air Force.

The results of Hypothesis 7 reveal that there was no difference in responses by cadets based on their perceptions of the attractiveness of an Air Force career.

Conclusion

The authors recognize that it is contrary to Air Force policy to raise the initial active duty service commitment for any service member without good reason. The Air Force has traditionally remained an all-volunteer branch of the military due, in part, to the success of its

recruiting and retention efforts. Therefore, changes in commitment, when made, are done only after careful consideration of the necessity for, and impact of, such a change. This was evidenced in the Officer Survey of March 1977 (AF/DPX, 1977).

The results and analysis of this research effort have hopefully contributed to a better understanding of the cost to the Air Force of increasing the initial active duty service commitment for pilots. This cost was presented both in terms of people and dollars and was based on the opinions, perceptions, and policies of Air Force ROTC cadets. The results show that as many as two years could be added to the present commitment at no significant cost to the Air Force. This supports the findings of the Officer Survey of 1977 (AF/DPX, 1977). However, this must be kept in proper context. These opinions may or may not be shared by other Air Force ROTC cadets in future years as economic conditions change. In addition, these results do not address the amount of improved stability and experience realized by the Air Force.

The authors do believe that the results of this research effort are representative of the entire Air Force ROTC cadet population in their junior or senior year of college. In addition, the conclusions drawn from the results are statistically sound. The decision for how these results will be used now rests with Air Force policy

makers who will consider the data along with other pertinent policy data and constraints.

Recommendation for Follow-on Research

Several comments from the respondents expressed concern that they did not yet know for certain what their future in the Air Force would be like. They stated that possibly a military member with several years in the Air Force should have been surveyed instead of college ROTC cadets. The authors are convinced that the opinions of the cadets were those that were desired and were valuable. However, a follow-on survey of this same population several years hence may prove to be very useful to the Air Force. The results of this research effort represents opinions and policies of the whole population of Air Force ROTC cadets in their junior and senior years. Thus, a survey of Air Force pilots in 1982 and 1983 year groups who were ROTC graduates would be from the same population. The results of both surveys could then be compared to determine if any changes in policy had taken place.

APPENDICES

APPENDIX A

AIR FORCE PILOT CAREER FIELD SURVEY

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE MANPOWER AND PERSONNEL CENTER
RANDOLPH AIR FORCE BASE, TX 78150

29 MAR 1982

REPLY TO ATTN OF: MPCHS

SUBJECT: Air Force Pilot Career Field Survey

TO:

1. The attached survey was prepared by a research team, at the Air Force Institute of Technology (AFIT), Wright-Patterson AFB OH. The purpose of this survey is to obtain your opinions about some aspects of the pilot career field.

2. While participation is strictly voluntary, your cooperation is greatly appreciated. Your responses are anonymous and will not be provided to your organization.

3. The overall combined results of approximately 1000 surveys from AFROTC units across the nation will be sent to your organization. In turn, your instructor will have the opportunity to present the overall summary results to you.

4. Headquarters USAF Survey Control Number 82-19 has been assigned to this survey.

ROGER F. STRAND, Colonel, USAF
Assistant for Retention

2 Atch
1. Privacy Act Statement
2. Survey

PRIVACY ACT STATEMENT

In accordance with paragraph 8, AFR 12-35, Air Force Privacy Act Program, the following information is provided:

a. Authority.

(1) 5 U.S.C. 301, Departmental Regulations; and/or

(2) 10 U.S.C., 8012, Secretary of the Air Force, Powers, Duties, Delegation by Compensation; and/or

(3) AFR 30-23, 22 Sep 76, Air Force Personnel Survey Program.

b. Principal purpose. This information will be used in research aimed at providing inputs to the solution of problems in Air Force personnel recruiting and retention.

c. Routine uses. Results of the research will be converted to statistical information for use in evaluating Air Force programs and policies.

d. Participation in this survey is entirely voluntary.

e. No adverse action of any kind may be taken against any individual who elects not to participate in any or all of this survey.

USAF SCN-82-19

AIR FORCE PILOT CAREER FIELD SURVEY

GENERAL INFORMATION

The Air Force's concern for its members cannot be overstated. The Air Force Manpower and Personnel Center is constantly searching for ways to enhance your Air Force career. Surveys of this nature often provide valuable feedback. This survey focuses on the pilot.

As much as one million dollars are spent training an individual pilot, depending on the particular aircraft he/she flies. Obviously, the Air Force would like to maximize the return on this investment.

Accordingly, we are asking for your cooperation in providing candid, honest opinions.

INSTRUCTIONS

1. This survey is divided into four sections: (I) and (II) Decision Making; (III) Background Information; and, (IV) Comments. You are requested to provide a response for each question. All statements in sections I, II, and III can be answered by darkening the letter on the answer sheet which corresponds to your response. If you do not find the exact reponse that reflects your opinion, use the one that is closest. Do not answer in the survey booklet; use the separate answer sheet. Space is provided at the end of the survey booklet for your comments.

2. The answer sheet is designed for machine scanning of your responses. Please use a Number 2 pencil only and observe the following requirements:

- Make heavy black marks that fill the spaces,
- Erase cleanly any answer you wish to change,
- Make no stray markings of any kind on the answer sheet,
- DO NOT STAPLE, TEAR OR FOLD THE ANSWER SHEET.

3. Please carefully read the following list of terms which are defined as they will be used in this survey:

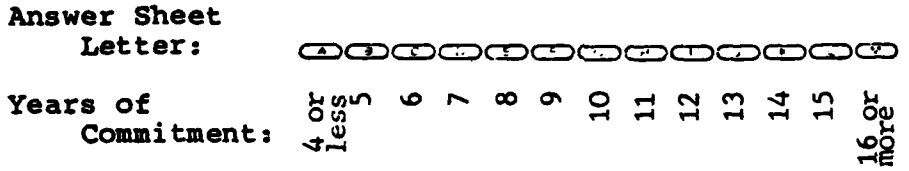
ACTIVE DUTY SERVICE COMMITMENT: The number of years a pilot is obligated to serve on active duty upon completion of Undergraduate Pilot Training (UPT).

FLIGHT PAY: A monthly pay entitlement, separate from normal pay and allowances, authorized for persons on flight status. Receipt of flight pay begins during flying training and continues throughout one's career.

BONUS: An annual incentive pay, separate from normal pay and allowances and flight pay, authorized for persons in certain designated career fields. A bonus for pilots would begin a certain number of years AFTER UPT and continue throughout one's career.

4. Section I consists of a list of 90 different "profiles" or combinations of varying levels of flight pay, year bonus begins, and bonus amount. After reading each profile, decide on the maximum active duty service commitment you would be willing to accept given those conditions. Darken the appropriate letter on your answer sheet using the scale below.

ACTIVE DUTY SERVICE COMMITMENT SCALE:



Remember, officers enter active duty with a four (4) year commitment. Flying traing commitments are served concurrently with the initial service commitment.

EXAMPLE: Consider the following profile:

Number	Flight Pay	Year Bonus Begins	Bonus Amount
1	474	6	2173

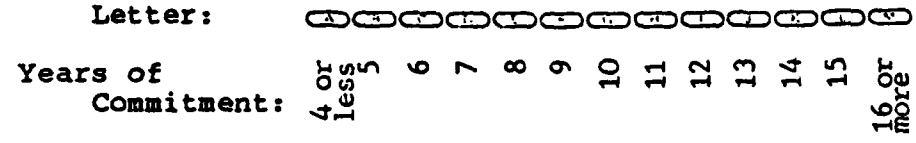
This means that you are offered $474 per month flight pay, effective upon commencing flying training. In addition, beginning in the 6th year after completion of flight training you are offered $2173 per year bonus. If you decided that 12 years (see above scale) was the maximum commitment acceptable, you would darken the letter - I (see sample answer sheet below) on your answer sheet.

Sample answer sheet: 

5. It is important that you understand these instructions completely. In the following five examples, darken the number in the sample answer sheet which, based on the scale, indicates the maximum commitment acceptable. If you have any questions after working the following examples, ask your instructor for assistance.

EXAMPLES:

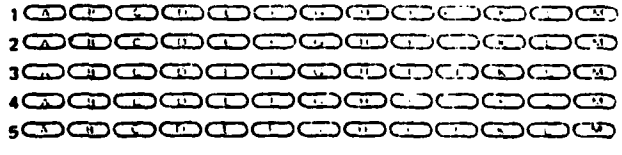
ACTIVE DUTY SERVICE COMMITMENT SCALE:



Sample profiles:

Number	Flight Pay	Year Bonus Begins	Bonus Amount
1	287	11	4066
2	406	12	5635
3	331	7	1902
4	253	9	2585
5	592	8	1197

Sample answer sheet: (Mark practice answers below)



6. Any questions? If not, you are ready to complete the survey. Remember: - Mark your answer sheet as soon as you have made a decision about each profile,

- Consider each profile to be separate and distinct from all others,

- DO NOT change an answer once you have proceeded to the next profile. Stick with your first choice.

THE RESULTS OF THIS RESEARCH PROJECT will in NO WAY affect your selection or assignment in the Air Force. HONEST responses are EXTREMELY IMPORTANT for our research purposes.

I. DECISION MAKING

ACTIVE DUTY SERVICE COMMITMENT SCALE

Answer Sheet Letter:	A	B	C	D	E	F	G	H	I	J	K	L	M
Years of Commitment:	4 or less	5	6	7	8	9	10	11	12	13	14	15	16 or more

Number	Flight Pay	Year Bonus Begins	Bonus Amount
1	424	8	1656
2	377	9	5355
3	352	5	1413
4	294	12	7209
5	371	8	4469
6	267	11	7408
7	430	9	4112
8	662	12	3263
9	198	10	5960
10	560	10	2024
11	354	9	3699
12	243	6	2565
13	566	10	6050
14	373	11	6335
15	353	7	2781
16	580	6	2891
17	440	11	5596

Number	Flight Pay	Year Bonus Begins	Bonus Amount

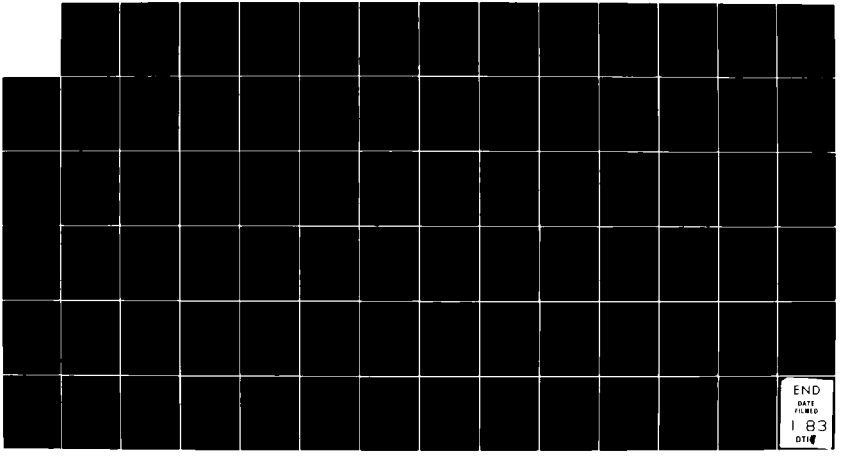
ACTIVE DUTY SERVICE COMMITMENT SCALE

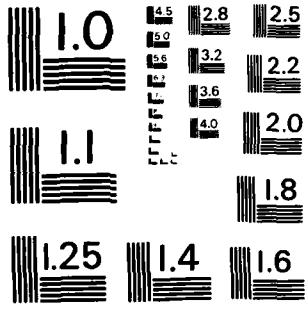
Answer Sheet Letter:	A	B	C	D	E	F	G	H	I	J	K	L	M
Years of Commitment:	4 or less	5	6	7	8	9	10	11	12	13	14	15	16 or more

Number	Flight Pay	Year Bonus Begins	Bonus Amount
18	419	10	2853
19	253	9	3312
20	356	7	3653
21	658	4	1858
22	339	9	3146
23	554	11	3503
24	341	10	4265
25	415	9	5649
26	511	9	1539
27	307	7	5778
28	443	8	2501
29	505	8	3545
30	180	10	7826
31	514	10	2972
32	513	10	3414
33	423	9	3375
34	258	8	5380
35	139	8	5808

Number	Flight Pay	Year Bonus Begins	Bonus Amount

AD-A122 999 EFFECTS OF FLIGHT PAY AND COMMITMENT ON AIR FORCE PILOT 2/2
APPLICANTS(U) AIR FORCE INST OF TECH WRIGHT-PATTERSON
AFB OH SCHOOL OF SYST.. J D MANIFORD ET AL. SEP 82
UNCLASSIFIED AFIT-LSSR-16-82 F/G 5/9 NL





MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

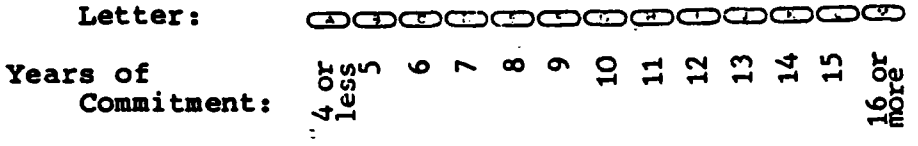
ACTIVE DUTY SERVICE COMMITMENT SCALE

Answer Sheet Letter:	A	B	C	D	E	F	G	H	I	J	K	L	M
Years of Commitment:	4 or less	5	6	7	8	9	10	11	12	13	14	15	16 or more

Number	Flight Pay	Year Bonus Begins	Bonus Amount
36	322	8	5981
37	655	9	1344
38	168	9	6620
39	229	7	2510
40	325	8	4382
41	389	10	4677
42	540	9	1467
43	280	8	2242
44	456	11	4263
45	412	9	4184
46	421	10	6394
47	317	8	2146
48	460	9	4516
49	367	8	4750
50	98	8	5496
51	345	6	3710
52	239	8	3340
53	367	11	4485

Number	Flight Pay	Year Bonus Begins	Bonus Amount

ACTIVE DUTY SERVICE COMMITMENT SCALE



Number	Flight Pay	Year Bonus Begins	Bonus Amount
54	409	11	3660
55	585	10	3744
56	401	10	5845
57	143	10	6562
58	435	9	2244
59	565	14	5735
60	474	9	1273
61	463	7	4203
62	480	6	1461
63	252	9	7331
64	459	10	2597
65	314	11	7335
66	386	7	4909
67	295	12	5871
68	362	7	3907
69	222	11	7508
70	252	7	3417
71	474	7	443

Number	Flight Pay	Year Bonus Begins	Bonus Amount

ACTIVE DUTY SERVICE COMMITMENT SCALE

Answer Sheet Letter:	A	B	C	D	E	F	G	H	I	J	K	L	M
Years of Commitment:	4 or less	5	6	7	8	9	10	11	12	13	14	15	16 or more

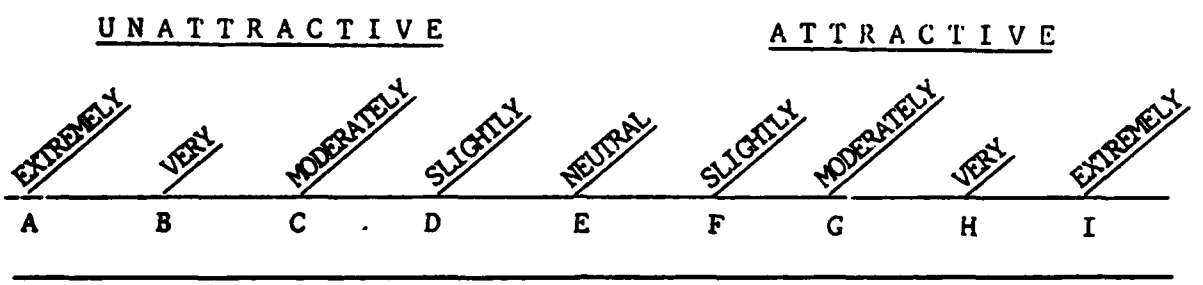
Number	Flight Pay	Year Bonus Begins	Bonus Amount
72	393	8	4101
73	373	10	5165
74	184	8	5429
75	326	8	2853
76	457	10	2706
77	332	7	6932
78	516	12	6646
79	189	9	5503
80	502	8	1401
81	379	6	1873
82	223	7	7012
83	246	10	6476
84	478	8	2483
85	322	9	6965
86	342	8	6885
87	228	10	8577
88	288	14	9934
89	162	14	9339
90	360	9	4634

Number	Flight Pay	Year Bonus Begins	Bonus Amount

II. DECISION MAKING

1. The following 57 profiles differ somewhat from those you have just completed. They consist of a series of varying levels of flight pay with a corresponding number of years of active duty service commitment. An annual bonus is not a consideration in this section.

Using the scale below, darken the appropriate letter on your answer sheet which indicates how attractive each profile is to you.



On the answer sheet

Mark - A - if the profile is 1 - EXTREMELY UNATTRACTIVE
Mark - B - if the profile is 2 - VERY UNATTRACTIVE
Mark - C - if the profile is 3 - MODERATELY UNATTRACTIVE
Mark - D - if the profile is 4 - SLIGHTLY UNATTRACTIVE
Mark - E - if the profile is 5 - NEUTRAL (neither attractive nor unattractive)
Mark - F - if the profile is 6 - SLIGHTLY ATTRACTIVE
Mark - G - if the profile is 7 - MODERATELY ATTRACTIVE
Mark - H - if the profile is 8 - VERY ATTRACTIVE
Mark - I - if the profile is 9 - EXTREMELY ATTRACTIVE

EXAMPLE: Consider the following same profile:

Number	Flight Pay	Commitment
101	397	12

This means you are offered $397 per month flight pay and incur a 12 year active duty service commitment upon completion of UPT (Undergraduate Pilot Training. If you decided that this was MODERATELY ATTRACTIVE, you would darken in the letter G on the answer sheet (see sample answer sheet below).

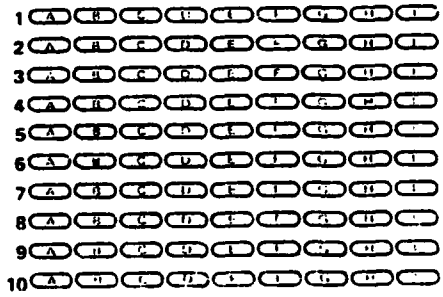
Sample answer sheet: 

2. Please DO NOT change an answer once you move on to the next profile.

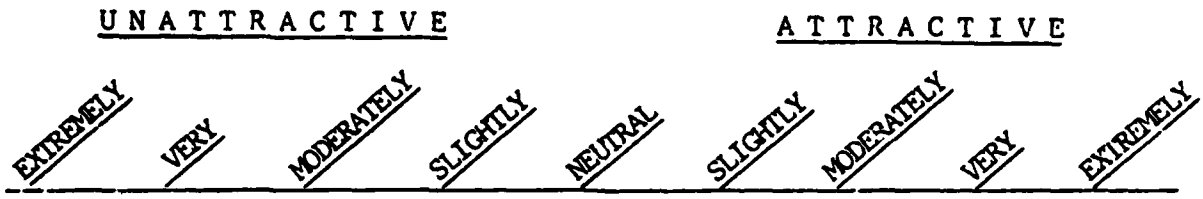
3. Remember officers enter active duty with a 4-year commitment. Flying training commitments are served concurrently with the initial service commitment.

4. Please take time to practice this decision-making exercise on the 10 items given below. Respond to all items using the reproduced portion of the answer sheet below. Do not refer back to this exercise once you begin items 91 and beyond.

Number	Flight Pay	Commitment
1	100	15
2	500	16
3	900	12
4	200	7
5	900	13
6	750	13
7	100	5
8	450	11
9	450	4
10	650	7

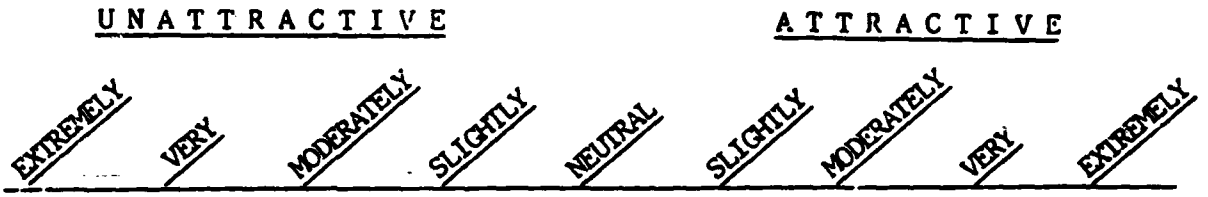


Number	Flight Pay	Commitment

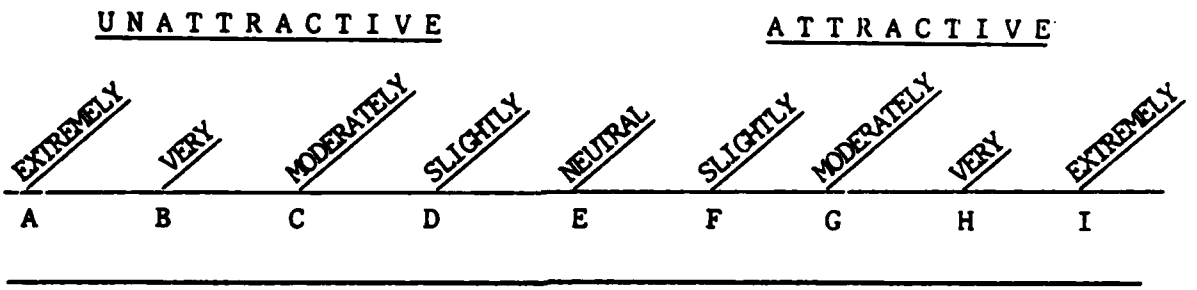


Number	Flight Pay	Commitment
91	200	16
92	300	10
93	400	4
94	650	16
95	250	4
96	950	11
97	500	16
98	200	6
99	850	4
100	450	15
101	500	6
102	100	14
103	500	11
104	200	11
105	750	5
106	300	5
107	550	4
108	550	14
109	600	5

Number	Flight Pay	Commitment



Number	Flight Pay	Commitment
110	800	11
111	600	10
112	450	5
113	650	6
114	1000	14
115	150	10
116	300	15
117	850	9
118	100	9
119	150	15
120	700	4
121	700	14
122	950	6
123	650	11
124	850	14
125	1000	9
126	950	16
127	900	15
128	150	5



Number	Flight Pay	Commitment
129	600	15
130	900	5
131	100	4
132	900	10
133	350	11
134	250	9
135	750	15
136	350	6
137	350	16
138	750	10
139	400	9
140	550	9
141	400	14
142	800	6
143	250	14
144	1000	4
145	800	16
146	700	9
147	450	10

III. BACKGROUND

148. What is your minimum attractiveness rating cutoff for accepting an Air Force contract? (i.e., In section II of this survey, what is the least level of attractiveness that you would accept?)

A. 1 - EXTREMELY UNATTRACTIVE
B. 2 - VERY UNATTRACTIVE
C. 3 - MODERATELY ATTRACTIVE
D. 4 - SLIGHTLY UNATTRACTIVE
E. 5 - NEITHER UNATTRACTIVE OR ATTRACTIVE
F. 6 - SLIGHTLY ATTRACTIVE
G. 7 - MODERATELY ATTRACTIVE
H. 8 - VERY ATTRACTIVE
I. 9 - EXTREMELY ATTRACTIVE

149. How much do you agree with the following statement?: Flying is fun.

A. VERY STRONGLY AGREE
B. STRONGLY AGREE
C. AGREE
D. MILDLY AGREE
E. NEITHER AGREE NOR DISAGREE
F. MILDLY DISAGREE
G. DISAGREE
H. STRONGLY DISAGREE
I. VERY STRONGLY DISAGREE

150. What is your sex?

A. Female
B. Male

151. What is your present academic grade level?

A. Junior (Class of '83)
B. Senior (Class of '82)

152. What is your race?

A. American Indian or Alaskan Native
B. Asian or Pacific Islander
C. Black
D. Hispanic
E. White
F. Other

153. What is your marital status?

A. Single
B. Married, spouse not a member of the USAF
C. Married, spouse on active duty in USAF
D. Married, spouse is cadet in ROTC

154. How many dependents do you support?

A. 0
B. 1
C. 2
D. 3
E. 4
F. 5
G. 6 or more

155. Do you have any prior active military service?

A. No
B. Yes, less than 1 year
C. Yes, 1 to 2 years
D. Yes, 2 to 3 years
E. Yes, 3 to 4 years
F. Yes, 4 to 5 years
G. Yes, 5 to 6 years
H. Yes, 6 to 7 years
I. Yes, 7 years or more

156. What type degree program are you pursuing?

A. Engineering (all types)
B. Sciences (Biology, Computers, Math, etc.)
C. Business and Administration (Accounting, etc.)
D. Education
E. Liberal Arts (Languages, Political Science, etc.)
F. Other

157. Do you presently hold any type of civilian pilot license?

A. No
B. Yes, private
C. Yes, commercial
D. Yes, airline transport rating
E. Yes, more than one of the above

158. Do you plan to eventually fly for the airlines?

A. Yes
B. No
C. Und[illegible]ed

159. Over the next twenty years, how would you compare your expected military income to what you might experience in a civilian career?

A. Civilian income much higher
B. Civilian income somewhat higher
C. About the same
D. Military income somewhat higher
E. Military income much higher
F. Don't know

160. What is your impression of the prevailing national attitude toward the military services?

A. Strongly antimilitary
B. Moderately antimilitary
C. Slightly antimilitary
D. Neither anti nor promilitary
E. Slightly promilitary
F. Moderately promilitary
G. Strongly promilitary

161. How attractive is an Air Force flying career to you?

A. Extremely unattractive
B. Very unattractive
C. Moderately unattractive
D. Slightly unattractive
E. Neither attractive nor unattractive
F. Slightly attractive
G. Moderately attractive
H. Very attractive
I. Extremely attractive

162. How much do you think an Air Force Captain who is a married pilot with 6 years active duty is paid annually (include total pay, allowances and flight pay)?

A. Uncertain
B. $15,000
C. $20,000
D. $25,000
E. $30,000
F. $35,000
G. $40,000
H. $45,000
I. $50,000

163. What do you think the chances are that you will remain in the Air Force past your initial obligation for UPT (Undergraduate Pilot Training)?

A. About 10% or less
B. About 20% or less
C. About 30% or less
D. About 40% or less
E. About 50% or less
F. About 60% or less
G. About 70% or less
H. About 80% or less
I. About 90% or less

164. What do you think the chances are that you will remain in the Air Force for at least 20 years?

A. About 10% or less
B. About 20% or less
C. About 30% or less
D. About 40% or less
E. About 50% or less
F. About 60% or less
G. About 70% or less
H. About 80% or less
I. About 90% or less

165. To the best of your knowledge, what is the actual active duty service commitment incurred upon completing Undergraduate Pilot Training?

A. Uncertain
B. 3 years
C. 4 years
D. 5 years
E. 6 years
F. 7 years
G. 8 years

IV. COMMENTS

Please provide any comments you desire:

THANK YOU FOR YOUR COOPERATION

APPENDIX B

INSTRUCTIONS TO PAS

REPLY TO
ATTN OF: AFIT/LS (Major Stone/1Lt Haniford, AV785-6569)

SUBJECT: Air Force Pilot Career Field Survey

TO: Professor of Aerospace Studies

1. The enclosed questionnaire was prepared by a research team at the Air Force Institute of Technology (AFIT), Wright-Patterson AFB, OH. The information collected will be used by the Air Force Military Personnel Center (AFMPC/HS), Randolph AFB, TX, to aid in the analysis of a pilot retention problem. The survey results will be published in a graduate thesis at AFIT.

2. This survey is presently being administered at 62 other AFROTC detachments across the nation. Due to this large number of participants, an advance courtesy call was not considered practical. For this, we apologize.

3. This survey is specifically designed to determine the relationship between pay and commitment. The methodology employed is called policy capturing. Policy capturing is a method of quantitatively representing a decision preference scheme of an individual or group of individuals. For example, by gathering a person's feelings toward a number of varying profiles, one can predict how that person would respond to any new profile.

4. Your assistance in administering this survey is greatly appreciated. The following instructions should explain this undertaking.

(a) The survey is to be administered only to Juniors and Seniors who have been selected for the pilot career field. According to AFROTC/SDR, Maxwell AFB, AL, there are _____ such individuals in your program.

(b) It is highly desirable that the survey be administered to the students collectively, if at all possible. This precludes collaboration and maximizes the number of returned surveys. Remember, participation is strictly voluntary. However, the validity of the results may be degraded if the responses are not truly those of the individuals taking the survey.

(c) In order to determine the quality of cadets taking the survey, it is necessary to know each person's total AFOQT score and cumulative grade point average. Since some students may not remember these numbers, it is desirable for you to have them available or advise the students ahead of time that the numbers will be needed.

(d) Administering the survey should take no more than one hour.

(e) After distributing the survey instruments and answer sheets:

(1) Stress that there should be no stray marks on the answer sheet, nor should it be folded, stapled or torn.

(2) Ask the students to enter their AFOQT score, cumulative grade point average, and state identifier as indicated on the attachment.

(3) Direct the students' attention to the cover letter and privacy act statement on the survey instrument.

(4) Read through the GENERAL INFORMATION and INSTRUCTIONS (on pages 1-5) with the students. Use the transparency samples after reading page 3 instructions. Then ask the students to work the examples on page 4.

(5) When the instructions are thoroughly understood, ask the students to complete the survey. It is not necessary to discuss the additional instructions located in Section II.

(f) When the survey has been completed, place all material in the folder provided and return mail it to AFIT. Your prompt administration and return of the survey information is greatly appreciated.

5. If you have any questions, please contact either Major Stone of 1Lt Haniford at AFIT/LS, AV 785-6569. Thank you for your cooperation.

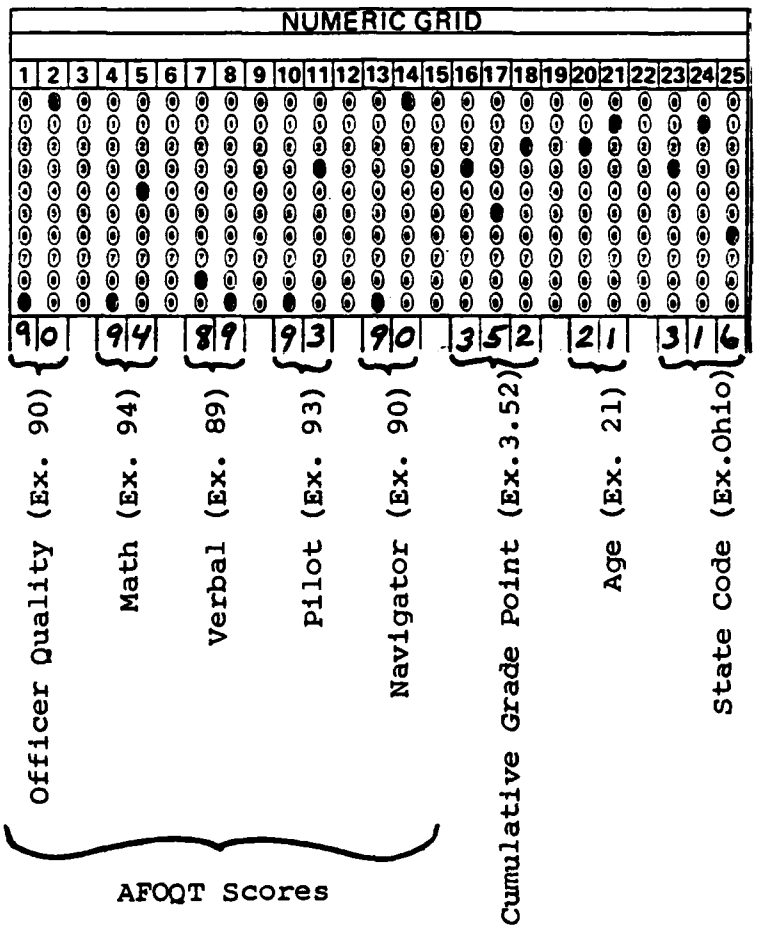
Before beginning the survey, ask the students to write the following information in the indicated blocks of the numeric grid on right side of the front of the answer sheet.

Blocks 1 - 14	AFOQT score
Blocks 16 - 18	Cumulative grade point average (omit decimal points)
Blocks 20 - 21	Age at your most recent birthday
Blocks 23 - 25	State identifier code from the list of states and identifiers below for the state in which your college/university is located.

State/Identifier	State/Identifier
Alabama/411	Nebraska/215
Arizona/111	New Hampshire/517
Arkansas/412	New Jersey/521
California/112	New Mexico/116
Colorado/113	New York/522
Connecticut/511	North Carolina/516
District of Columbia/512	North Dakota/214
Florida/413	Ohio/316
Georgia/414	Oklahoma/216
Hawaii/114	Oregon/117
Illinois/311	Pennsylvania/523
Indiana/312	Puerto Rico/417
Iowa/211	South Carolina/421
Kansas/212	South Dakota/217
Kentucky/313	Tennessee/317
Louisiana/415	Texas/221
Maine/514	Utah/121
Maryland/515	Vermont/525
Massachusetts/513	Virginia/524
Mighigan/314	Washington/122
Minnesota/213	Wisconsin/222
Mississippi/416	West Virginia/321
Missouri/315	Wyoming/123
Montana/115	

After writing the requested information in the appropriate blocks, completely darken the oval containing the corresponding number in the column above each space.

NUMERIC GRID EXAMPLE



APPENDIX C

DEMOGRAPHIC RESULTS

Section III of the survey instrument consisted of Items 148 through 165 which provided a demographic profile of the respondents. The items, and responses to the items, are presented in the following discussion and tables. Separate columns are shown for the total number of surveys returned (748), the surveys selected for analysis of Section I (377), and the surveys selected for analysis of Section II (606). The sum of responses to each item may not be equal to the total number of surveys in each group because some survey answer sheets were not completely filled in.

Item 148. What is your minimum attractiveness rating cutoff for accepting an Air Force contract? (i.e., In Section II of this survey, what is the least level of attractiveness that you would accept?)

MINIMUM ATTRACTIVENESS RATING CUTOFF

	Frequency		
Category	Total	Section I	Section II
Extremely unattractive	68	35	46
Very unattractive	41	17	31
Moderately unattractive	98	45	77
Slightly unattractive	134	70	104
Neither attractive nor unattractive	149	75	124
Slightly attractive	126	70	101
Moderately attractive	98	55	91
Very attractive	23	8	21
Extremely attractive	3	0	3

Item 149. How much do you agree with the following statement? Flying is fun.

FLYING IS FUN

Category	Frequency		
	Total	Section I	Section II
Very strongly agree	464	242	378
Strongly agree	175	85	141
Agree	71	32	60
Mildly agree	15	9	11
Neither agree nor disagree	8	2	7
Mildly disagree	3	1	2
Disagree	1	0	0
Strongly disagree	0	0	0
Very strongly disagree	10	6	7

Item 150. What is your sex?

SEX

Category	Frequency		
	Total	Section I	Section II
Female	37	18	29
Male	709	359	577

Item 151. What is your present academic grade level?

GRADE LEVEL

Category	Frequency		
	Total	Section I	Section II
Junior (Class of '83)	426	204	346
Senior (Class of '82)	318	173	260

Item 152. What is your race?

RACE

Category	Frequency		
	Total	Section I	Section II
American Indian or Alaskan Native	8	3	4
Asian or Pacific Islander	13	6	11
Black	15	5	13
Hispanic	17	9	12
White	684	350	558
Other	6	3	4

Item 153. What is your marital status?

MARITAL STATUS

Category	Frequency		
	Total	Section I	Section II
Single	661	334	538
Married, spouse not a member of the USAF	81	42	66
Married, spouse on active duty in USAF	0	0	0
Married, spouse is cadet in ROTC	2	1	1

Item 154. How many dependents do you support?

DEPENDENTS

Category	Frequency		
	Total	Section I	Section II
0	603	297	490
1	110	63	88
2	0	15	20
3	25	1	6
4	7	1	2
5	2	0	0
6 or more	0	0	0

Item 155. Do you have any prior active military service?

PRIOR ACTIVE MILITARY SERVICE

Category	Frequency		
	Total	Section I	Section II
No	683	346	555
Yes, less than 1 year	16	5	9
Yes, 1 to 2 years	13	6	12
Yes, 2 to 3 years	14	10	11
Yes, 3 to 4 years	17	7	15
Yes, 4 to 5 years	3	2	3
Yes, 5 to 6 years	2	1	1
Yes, 6 to 7 years	0	0	0
Yes, 7 years or more	0	0	0

Item 156. What type degree program are you pursuing?

DEGREE PROGRAM

Category	Frequency		
	Total	Section I	Section II
Engineering (all types)	254	134	204
Sciences	147	72	124
Business and Administration	165	79	131
Education	13	7	10
Liberal Arts	129	66	108
Other	39	19	29

Item 157. Do you presently hold any type of civilian pilot license?

CIVILIAN PILOT LICENSE

Category	Frequency		
	Total	Section I	Section II
No	628	313	513
Yes, private	106	59	84
Yes, commercial	8	4	6
Yes, airline transport rating	1	0	1
Yes, more than one of the above	4	1	2

Item 158. Do you plan to eventually fly for the airlines?

FLY FOR AIRLINES

Category	Frequency		
	Total	Section I	Section II
Yes	93	41	73
No	218	107	165
Undecided	435	229	367

Item 159. Over the next twenty years, how would you compare your expected military income to what you might experience in a civilian career?

COMPARISON OF EXPECTED INCOME

Category	Frequency		
	Total	Section I	Section II
Civilian income much higher	253	128	192
Civlian income somewhat higher	327	173	279
About the same	88	43	68
Military income somewhat higher	54	23	47
Military income much higher	9	5	7
Don't know	15	4	12

Item 160. What is your impression of the prevailing national attitude toward the military services?

NATIONAL ATTITUDE TOWARD MILITARY SERVICES

Category	Frequency		
	Total	Section I	Section II
Strongly antimilitary	2	1	2
Moderately antimilitary	50	24	44
Slightly antimilitary	203	109	165
Neither anti nor promilitary	118	53	87
Slightly promilitary	245	121	212
Moderately promilitary	114	62	88
Strongly promilitary	10	5	5

Item 161. How attractive is an Air Force flying career to you?

AIR FORCE FLYING CAREER

Category	Frequency		
	Total	Section I	Section II
Extremely unattractive	58	21	45
Very unattractive	31	13	16
Moderately unattractive	15	9	10
Slightly unattractive	6	2	3
Neither attractive nor unattractive	2	1	2
Slightly attractive	19	11	13
Moderately attractive	75	33	64
Very attractive	188	102	157
Extremely attractive	352	183	294

Item 162. How much do you think an Air Force Captain who is a married pilot with 6 years active duty is paid annually (include total pay, allowances, and flight pay)?

CAPTAINS' ANNUAL SALARY

	Frequency		
Category	Total	Section I	Section II
Uncertain	19	5	14
$15,000	2	1	1
$20,000	32	17	23
$25,000	229	114	189
$30,000	265	140	215
$35,000	174	90	145
$40,000	18	5	14
$45,000	4	2	2
$50,000	4	2	2

Item 163. What do you think the chances are that you will remain in the Air Force past your initial obligation for UPT (Undergraduate Pilot Training)?

REMAIN PAST INITIAL OBLIGATION

Category	Frequency		
	Total	Section I	Section II
About 10% of less	12	6	9
About 20% or less	9	5	6
About 30% or less	17	6	9
About 40% or less	18	9	14
About 50% or less	175	83	138
About 60% or less	89	38	75
About 70% or less	151	82	126
About 80% or less	96	54	83
About 90% or less	178	92	144

Item 164. What do you think the chances are that you will remain in the Air Force for at least 20 years?

TWENTY YEARS IN THE AIR FORCE

Category	Frequency		
	Total	Section I	Section II
About 10% or less	43	20	31
About 20% or less	47	24	38
About 30% or less	70	36	60
About 40% or less	55	24	44
About 50% or less	215	113	166
About 60% or less	91	40	80
About 70% or less	90	50	74
About 80% or less	52	32	45
About 90% or less	82	36	66

Item 165. To the best of your knowledge, what is the actual active duty service commitment incurred upon completing Undergraduate Pilot Training?

ACTIVE DUTY SERVICE COMMITMENT

Category	Frequency		
	Total	Section I	Section II
Uncertain	4	2	2
3 years	3	0	0
4 years	22	8	14
5 years	36	21	30
6 years	636	323	522
7 years	40	19	33
8 years	3	1	2

In addition to the demographic results, the respondents were asked to provide their AFOQT scores, grade point average, age, and geographical area their college or university was located in. The responses are summarized in the tables that follow.

RESPONDENTS' AGE

Category	Frequency		
	Total	Section I	Section II
18	1	1	1
19	3	1	3
20	162	79	138
21	304	151	245
22	171	92	136
23	42	23	29
24	24	10	22
25	19	11	16
26	9	3	7

GRADE POINT AVERAGE (BASED ON 4.00)

Category	Frequency		
	Total	Section I	Section II
Below 2.00	24	8	19
2.00 to 2.49	238	115	198
2.50 to 2.99	270	142	217
3.00 to 3.49	156	81	120
3.50 to 4.00	48	27	43

GEOGRAPHIC AREA

Category	Frequency		
	Total	Section I	Section II
WE	102	51	90
MW	198	77	131
OV	120	56	81
SE	187	101	172
NE	141	92	132

AFOQT SCORE--OFFICER QUALITY

Category	Frequency		
	Total	Section I	Section II
80 to 100	161	89	133
55 to 75	319	169	259
30 to 50	232	106	189
0 to 25	36	12	25

AFOQT SCORE--MATH

Category	Frequency		
	Total	Section I	Section II
80 to 100	191	101	152
55 to 75	317	171	266
30 to 50	210	95	174
0 to 25	30	7	14

AFOQT SCORE--VERBAL

Category	Frequency		
	Total	Section I	Section II
80 to 100	175	86	141
55 to 75	260	137	216
30 to 50	248	126	200
0 to 25	65	27	49

AFOQT SCORE--PILOT

Category	Frequency		
	Total	Section I	Section II
80 to 100	202	103	160
55 to 75	301	162	251
30 to 50	210	97	169
0 to 25	35	14	26

AFOQT SCORE--NAVIGATOR

Category	Frequency		
	Total	Section I	Section II
80 to 100	465	244	380
55 to 75	221	108	181
30 to 50	51	20	39
0 to 25	11	4	6

APPENDIX D

GEOGRAPHICAL AREAS

HQ/AFROTC has established five geographical areas of the United States, designated as WE, MW, OV, SE, and NE, into which all of the AFROTC detachments are divided. The following tables indicate the names of colleges/ universities which received the Air Force Pilot Career Field Survey and an indication of those who responded to the survey. An additional column indicates whether the institution was public or private.

NE--NORTHEAST UNITED STATES

Institution	Responded	Public/ Private
University of Connecticut	yes	public
Howard University	yes	private
University of Maryland	yes	public
University of Massachusetts	no	public
University of New Hampshire	yes	public
Rutgers University	yes	public
Rensselaer Polytechnical Institute	yes	private
North Carolina State University	yes	public
Pennsylvania State University	yes	public
Norwich University	yes	private
Virginia Polytech Institute	yes	public
Virginia Military Institute	yes	public
University of Virginia	yes	public
University of Maine	yes	public

SE--SOUTHEAST UNITED STATES

Institution	Responded	Public/ Private
Auburn University	yes	public
University of Arkansas	yes	public
University of Florida	yes	public
Embry-Riddle Aeronautical University	yes	private
University of Central Florida	yes	public
University of Georgia	no	public
Goergia Institute of Technology	yes	public
Louisiana Tech University	yes	public
Mississippi State University	yes	public
University of Puerto Rico, Rio Piedras	yes	public
The Citadel	yes	public
Clemson University	yes	public

MW--MIDWEST UNITED STATES

Institution	Responded	Public/ Private
Iowa State University	yes	public
Kansas State University	yes	public
University of Minnesota	yes	public
University of Nebraska, Lincoln	yes	public
North Dakota State University	yes	public
Oklahoma State University	yes	public
South Dakota State University	yes	public
Texas A&M University	yes	public
Texas Tech University	yes	public
North Texas State University	yes	public
University of Wisconsin, Superior	no	public

OV--OHIO VALLEY

Institution	Responded	Public/ Private
University of Illinois	yes	public
Southern Illinois University	yes	public
Indiana University	yes	public
Purdue University	yes	public
University of Kentucky	yes	public
University of Michigan	yes	public
Michigan Tech University	no	public
University of Missouri	yes	public
Ohio State University	yes	public
University of Cincinnati	yes	public
Tennessee State University	no	public
University of Tennessee	yes	public
West Virginia University	no	public

WE--WEST UNITED STATES

Institution	Responded	Public/ Private
University of Arizona	yes	public
Arizona State University	yes	public
University of California, Los Angeles	yes	public
University of Southern California	yes	private
University of Colorado	yes	public
University of Hawaii	yes	public
Montana State University	no	public
New Mexico State University	yes	public
Oregon State University	yes	public
Brigham Young University	no	private
Washington State	no	public
University of Washington	no	public
University of Wyoming	yes	public

APPENDIX E

CROSSTABS: LENGTH OF QUEUE

CROSSTABS: LENGTH OF QUEUE(BYR=0 BAMT=$0)

Y	COUNT / COL PCT	FP 200	300	400	500	600
-20 TO 4.5	4	147	79	42	30	22
		39.0	21.0	11.1	8.0	5.8
4.6 TO 5.5	5	72	61	37	20	14
		19.1	16.2	9.8	5.3	3.7
5.6 TO 6.5	6	67	59	59	36	21
		17.8	15.6	15.6	9.5	5.6
6.6 TO 7.5	7	37	67	54	52	39
		9.8	17.8	14.3	13.8	10.3
7.6 TO 8.5	8	25	42	50	43	44
		6.6	11.1	13.3	11.4	11.7
8.6 TO 9.5	9	14	23	43	42	34
		3.7	6.1	11.4	11.1	9.0
9.6 TO 10.5	10	7	23	32	44	30
		1.9	6.1	8.5	11.7	8.0
10.6 TO 11.5	11	1	9	21	28	46
		.3	2.4	5.6	7.4	12.2
11.6 TO 12.5	12	1	6	15	23	23
		.3	1.6	4.0	6.1	6.1
12.6 TO 13.5	13	0	1	13	21	27
		0	.3	3.4	5.6	7.2
13.6 TO 14.5	14	2	1	1	11	22
		.5	.3	.3	2.9	5.8
14.6 TO 15.5	15	1	2	4	14	18
		.3	.5	1.1	3.7	4.8
15.6 TO 99.0	16	3	4	6	13	37
		.8	1.1	1.6	3.4	9.8
	COLUMN TOTAL	377	377	377	377	377
		33.3	33.3	33.3	50.0	50.0

CROSSTABS: LENGTH OF QUEUE(BYR=6 BAMT=$3600)

Y		FP 200	300	400	500	600
	4	42	7	4	4	5
-20 TO 4.5		11.1	1.9	1.1	1.1	1.3
	5	95	36	11	3	2
4.6 TO 5.5		25.2	9.5	2.9	.8	.5
	6	80	67	44	22	12
5.6 TO 6.5		21.2	17.8	11.7	5.8	3.2
	7	65	82	48	38	20
6.6 TO 7.5		17.2	21.8	12.7	10.1	5.3
	8	41	70	60	48	39
7.6 TO 8.5		10.9	18.6	15.9	12.7	10.3
	9	29	48	57	39	44
8.6 TO 9.5		7.7	12.7	15.1	10.3	11.7
	10	10	29	62	54	31
9.6 TO 10.5		2.7	7.7	16.4	14.3	8.2
	11	6	26	38	49	40
10.6 TO 11.5		1.6	6.9	10.1	13.0	10.6
	12	2	4	23	45	43
11.6 TO 12.5		.5	1.1	6.1	11.9	11.4
	13	3	3	21	29	35
12.6 TO 13.5		.8	.8	5.6	7.7	9.3
	14	1	2	5	19	35
13.6 TO 14.5		.3	.5	1.3	5.0	9.3
	15	1	0	1	19	24
14.6 TO 15.5		.3	0	.3	5.0	6.4
	16	2	3	3	8	47
15.6 TO 99.0		.5	.8	.8	2.1	12.5
	COLUMN	377	377	377	377	377
	TOTAL	33.3	33.3	33.3	50.0	50.0

CROSSTABS: LENGTH OF QUEUE(BYR=6 BAMT=$4800)

Y		FP 200	300	400	500	600
-20 TO 4.5	4	34	5	3	4	4
		9.0	1.3	.8	1.1	1.1
4.6 TO 5.5	5	59	25	11	3	2
		15.6	6.6	2.9	.8	.5
5.6 TO 6.5	6	85	60	34	14	12
		22.5	15.9	9.0	3.7	3.2
6.6 TO 7.5	7	64	63	44	38	17
		17.0	16.7	11.7	10.1	4.5
7.6 TO 8.5	8	53	65	42	44	36
		14.1	17.2	11.1	11.7	9.5
8.6 TO 9.5	9	35	52	54	34	37
		9.3	13.8	14.3	9.0	9.8
9.6 TO 10.5	10	18	45	60	35	27
		4.8	11.9	15.9	9.3	7.2
10.6 TO 11.5	11	14	29	46	48	32
		3.7	7.7	12.2	12.7	8.5
11.6 TO 12.5	12	6	19	30	43	41
		1.6	5.0	8.0	11.4	10.9
12.6 TO 13.5	13	2	6	25	38	29
		.5	1.6	6.6	10.1	7.7
13.6 TO 14.5	14	3	3	18	32	40
		.8	.8	4.8	8.5	10.6
14.6 TO 15.5	15	1	1	5	15	28
		.3	.3	1.3	4.0	7.4
15.6 TO 93.0	16	3	4	5	29	72
		.8	1.1	1.3	7.7	19.1
	COLUMN	377	377	377	377	377
	TOTAL	33.3	33.3	33.3	50.0	50.0

COMPARISON: LENGTH OF QUEUE

	Annual Bonus Amount			
	0		$3600	$4800
Flight Pay / Commitment	$ 600	$ 400	$ 400	$ 400
6	90.8%	79.1%	96.0%	96.2%
7	85.2%	63.5%	84.3%	87.2%
8	74.9%	49.2%	71.6%	75.5%

APPENDIX F

SPSS PRODUCTS

HYPOTHESIS 1, SECTION I RESPONSES

• MULTIPLE REGRESSION •

DEPENDENT VARIABLE.. ANS

MEAN RESPONSE 8.85172 STD. DEV. 3.23507

VARIABLE(S) ENTERED ON STEP NUMBER 1.. FP
BYR
BAMT

MULTIPLE R	.40408	ANALYSIS OF VARIANCE	DF	SUM OF SQUARES	MEAN SQUARE	F SIGNIFICANCE
R SQUARE	.16328	REGRESSION	3.	57815.64674	19271.88225	2200.590877 0
ADJUSTED R SQUARE	.16321	RESIDUAL	33830.	296269.41847	8.75751	
STD DEVIATION	2.95932	COEFF OF VARIABILITY	33.4 PCT			

---------- VARIABLES IN THE EQUATION ----------

VARIABLE	B	STD ERROR B	F SIGNIFICANCE	BETA ELASTICITY
FP	.12812883E-01	.16588395E-03	5966.0241 0	.4933071 .54097
BYR	-.82075994E-01	.10865613E-01	57.058958 .000	-.0473499 -.08324
BAMT	.49689236E-03	.11799158E-04	1773.4649 0	.3118302 .24861
(CONSTANT)	2.6002669	.97288623E-01	714.35114 0	

---------- VARIABLES NOT IN THE EQUATION ----------

VARIABLE	PARTIAL	TOLERANCE	F SIGNIFICANCE

ALL VARIABLES ARE IN THE EQUATION.

COEFFICIENTS AND CONFIDENCE INTERVALS.

VARIABLE	B	STD ERROR B	T	95.0 PCT CONFIDENCE INTERVAL
FP	.12812883E-01	.16588395E-03	77.240042	.12487745E-01, .13138021E-01
BYR	-.82075994E-01	.10865613E-01	-7.5537380	-.10337297 , -.60779021E-01
BAMT	.49689236E-03	.11799158E-04	42.112526	.47376560E-03, .52001911E-03
CONSTANT	2.6002669	.97288623E-01	26.727348	2.4095779 , 2.7909559

HYPOTHESIS 1, SECTION I RESPONSES

VARIABLE	MEAN	STANDARD DEV	CASES
ANS	8.8517	3.2351	33834
FP	373.6547	124.5529	33834
BYR	8.9768	1.8663	33834
BAMT	4428.8031	2030.2024	33834

CORRELATION COEFFICIENTS.

A VALUE OF 99.00000 IS PRINTED
IF A COEFFICIENT CANNOT BE COMPUTED.

FP	.32647		
BYR	.11868	.01657	
BAMT	.02517	-.53250	.50623
	ANS	FP	BYR

HYPOTHESIS 2, SECTION II RESPONSES

• MULTIPLE REGRESSION •

DEPENDENT VARIABLE.. A

MEAN RESPONSE 5.14289 STD. DEV. 2.70831

VARIABLE(S) ENTERED ON STEP NUMBER 1.. FP
C

MULTIPLE R	.74021	ANALYSIS OF VARIANCE	DF	SUM OF SQUARES	MEAN SQUARE	F SIGNIFICANCE
R SQUARE	.54791	REGRESSION	2.	138266.44514	69133.22257	20846.89916 0
ADJUSTED R SQUARE	.54789					
STD DEVIATION	1.82105	RESIDUAL	34402.	114085.12626	3.31624	
		COEFF OF VARIABILITY	35.4 PCT			

---------- VARIABLES IN THE EQUATION ----------

VARIABLE	B	STD ERROR B	F SIGNIFICANCE	BETA ELASTICITY
FP	.58699729E-02	.35861237E-04	26793.019 .000	.5933943 .62787
C	-.29075186	.23575942E-02	15209.218 .000	-.4470808 -.56243
(CONSTANT)	4.8063224	.32870685E-01	22459.977 .000	

---------- VARIABLES NOT IN THE EQUATION ----------

VARIABLE	PARTIAL	TOLERANCE	F SIGNIFICANCE

ALL VARIABLES ARE IN THE EQUATION.

COEFFICIENTS AND CONFIDENCE INTERVALS.

VARIABLE	B	STD ERROR B	T	95.0 PCT CONFIDENCE INTERVAL
FP	.59699729E-02	.35861237E-04	163.68573	.57996837E-02, .59402621E-02
C	-.29075186	.23575942E-02	-123.32566	-.29537242 , -.28613090
CONSTANT	4.8063224	.32870685E-01	149.86653	4.7419628 , 4.8691820

VARIANCE/COVARIANCE MATRIX OF THE UNNORMALIZED REGRESSION COEFFICIENTS.

	FP	C
FP	.00000	
C	-.00000	.00001

HYPOTHESIS 2, SECTION II RESPONSES

VARIABLE	MEAN	STANDARD DEV	CASES
A	5.1429	2.7083	34405
FP	550.1003	273.7826	34405
C	9.9484	4.1645	34405

CORRELATION COEFFICIENTS.

A VALUE OF 99.00000 IS PRINTED
IF A COEFFICIENT CANNOT BE COMPUTED.

FP	.58995	
C	-.44251	.00770
	A	FP

HYPOTHESIS 3a, SECTION II RESPONSES

T - T E S T

GROUP 1 - C11 EQ 1.
GROUP 2 - C11 EQ 2.

VARIABLE	NUMBER OF CASES	MEAN	STANDARD DEVIATION	STANDARD ERROR	F VALUE	2-TAIL PROB.	POOLED VARIANCE ESTIMATE T VALUE	POOLED VARIANCE ESTIMATE DEGREES OF FREEDOM	POOLED VARIANCE ESTIMATE 2-TAIL PROB.	SEPARATE VARIANCE ESTIMATE T VALUE	SEPARATE VARIANCE ESTIMATE DEGREES OF FREEDOM	SEPARATE VARIANCE ESTIMATE 2-TAIL PROB.
Y2												
GROUP 1	555	4.6288	.963	.041	1.08	.668	-1.24	604	.216	-1.20	58.84	.255
GROUP 2	51	4.8039	1.000	.140								

HYPOTHESIS 3b, SECTION II RESPONSES

T - T E S T

GROUP 1 - C16 EQ 1.
GROUP 2 - C16 EQ 2.

VARIABLE	NUMBER OF CASES	MEAN	STANDARD DEVIATION	STANDARD ERROR	F VALUE	2-TAIL PROB.	POOLED VARIANCE ESTIMATE T VALUE	DEGREES OF FREEDOM	2-TAIL PROB.	SEPARATE VARIANCE ESTIMATE T VALUE	DEGREES OF FREEDOM	2-TAIL PROB.
Y2												
GROUP 1	29	4.6552	.936	.174	1.07	.872	.07	604	.947	.07	31.07	.946
GROUP 2	577	4.6430	.969	.040								

HYPOTHESIS 3c, SECTION II RESPONSES

T-TEST

GROUP 1 - C13 EQ 1.
GROUP 2 - C13 EQ 2.

VARIABLE	NUMBER OF CASES	MEAN	STANDARD DEVIATION	STANDARD ERROR	F VALUE	2-TAIL PROB.	POOLED VARIANCE ESTIMATE T VALUE	DEGREES OF FREEDOM	2-TAIL PROB.	SEPARATE VARIANCE ESTIMATE T VALUE	DEGREES OF FREEDOM	2-TAIL PROB.
Y2												
GROUP 1	538	4.6078	.952	.041	1.20	.293	-2.57	604	.010	-2.40	81.78	.019
GROUP 2	68	4.9265	1.041	.126								

HYPOTHESIS 3d, SECTION II RESPONSES

- O N E W A Y -

VARIABLE Y
BY G

ANALYSIS OF VARIANCE

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	4	14.2747	3.5687	3.798	.0045
WITHIN GROUPS	601	564.6758	.9396		
TOTAL	605	578.9505			

GROUP	COUNT	MEAN	STANDARD DEVIATION	STANDARD ERROR	MINIMUM	MAXIMUM	95 PCT CONF INT FOR MEAN
GRP 1	90	4.5222	.9146	.0964	2.0000	6.0000	4.3307 TO 4.7137
GRP 2	131	4.4733	1.0825	.0876	2.0000	6.0000	4.3000 TO 4.6466
GRP 3	81	4.3580	1.0405	.1156	1.0000	6.0000	4.1277 TO 4.5883
GRP 4	172	4.7384	.9830	.0750	2.0000	7.0000	4.5904 TO 4.8863
GRP 5	132	4.7652	.9068	.0789	2.0000	7.0000	4.6090 TO 4.9213
TOTAL	606	4.6040			1.0000	7.0000	
	UNGROUPED DATA		.9782	.0397			4.5259 TO 4.6820
	FIXED EFFECTS MODEL		.9693	.0394			4.5266 TO 4.6813
	RANDOM EFFECTS MODEL		.1774	.0793			4.3937 TO 4.9242

RANDOM EFFECTS MODEL - ESTIM. OF BETWEEN COMPONENT VARIANCE .0221

TESTS FOR HOMOGENEITY OF VARIANCES

COCHRANS C = MAX.VARIANCE/SUM(VARIANCES) = .2297, P = .509 (APPROX.)
BARTLETT-BOX F = .724, P = .576
MAXIMUM VARIANCE / MINIMUM VARIANCE = 1.317

HYPOTHESIS 3c, SECTION II RESPONSES

T - T E S T

GROUP 1 - C13 EQ 1.
GROUP 2 - C13 EQ 2.

VARIABLE	NUMBER OF CASES	MEAN	STANDARD DEVIATION	STANDARD ERROR	F VALUE	2-TAIL PROB.	POOLED VARIANCE ESTIMATE T VALUE	DEGREES OF FREEDOM	2-TAIL PROB.	SEPARATE VARIANCE ESTIMATE T VALUE	DEGREES OF FREEDOM	2-TAIL PROB.
Y2												
GROUP 1	538	4.6078	.952	.041	1.20	.293	-2.57	604	.010	-2.40	81.78	.019
GROUP 2	68	4.9265	1.041	.126								

HYPOTHESIS 3d, SECTION II RESPONSES

ONEWAY

VARIABLE Y

MULTIPLE RANGE TEST

MODIFIED LSD PROCEDURE
RANGES FOR THE .050 LEVEL -

3.98 3.98 3.98 3.98

THE RANGES ABOVE ARE TABULAR VALUES.
THE VALUE ACTUALLY COMPARED WITH MEAN(J)-MEAN(I) IS,.
.6454 * RANGE * SQRT(1/N(I) + 1/N(J))

HOMOGENEOUS SUBSETS (SUBSETS OF GROUPS, WHOSE HIGHEST AND LOWEST MEANS DO NOT DIFFER BY MORE THAN THE SHORTEST SIGNFICANT RANGE FOR A SUBSET OF THAT SIZE)

SUBSET 1

GROUP	GRP 3	GRP 2	GRP 1
MEAN	4.3580	4.4733	4.5222

SUBSET 2

GROUP	GRP 2	GRP 1	GRP 4	GRP 5
MEAN	4.4733	4.5222	4.7384	4.7652

HYPOTHESIS 3e, SECTION II RESPONSES

T - T E S T

GROUP 1 - C14 EQ 1.
GROUP 2 - C14 EQ 2.

VARIABLE	NUMBER OF CASES	MEAN	STANDARD DEVIATION	STANDARD ERROR	F VALUE	2-TAIL PROB.	POOLED VARIANCE ESTIMATE T VALUE	POOLED VARIANCE ESTIMATE DEGREES OF FREEDOM	POOLED VARIANCE ESTIMATE 2-TAIL PROB.	SEPARATE VARIANCE ESTIMATE T VALUE	SEPARATE VARIANCE ESTIMATE DEGREES OF FREEDOM	SEPARATE VARIANCE ESTIMATE 2-TAIL PROB.
Y2												
GROUP 1	558	4.6667	.961	.041	1.09	.643	2.01	604	.045	1.94	54.69	.057
GROUP 2	48	4.3750	1.003	.145								

HYPOTHESIS 4a, SECTION I RESPONSES

ONEWAY

VARIABLE Y
BY P

ANALYSIS OF VARIANCE

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	2	10.9438	5.4719	1.271	.2817
WITHIN GROUPS	373	1605.4711	4.3042		
TOTAL	375	1616.4149			

GROUP	COUNT	MEAN	STANDARD DEVIATION	STANDARD ERROR	MINIMUM	MAXIMUM	95 PCT CONF INT FOR MEAN
GRP 1	141	8.1064	2.1899	.1844	4.0000	13.0000	7.7415 TO 8.4710
GRP 2	124	8.4839	2.0933	.1880	4.0000	13.0000	8.1119 TO 8.[illegible]
GRP 3	111	8.4234	1.8952	.1799	4.0000	13.0000	8.3669 TO 8.[illegible]
TOTAL	376	8.3245			4.0000	13.0000	
	UNGROUPED DATA		2.0762	.1071			8.1139 TO 8.5350
	FIXED EFFECTS MODEL		2.0747	.1070			8.1141 TO 8.5347
	RANDOM EFFECTS MODEL		.2093	.1208			7.8046 TO 8.8443

RANDOM EFFECTS MODEL - ESTIM. OF BETWEEN COMPONENT VARIANCE .0094

TESTS FOR HOMOGENEITY OF VARIANCES

COCHRANS C = MAX.VARIANCE/SUM(VARIANCES) = .3756, P = .337 (APPROX.)
BARTLETT-BOX F = 1.278, P = .279
MAXIMUM VARIANCE / MINIMUM VARIANCE = 1.335

HYPOTHESIS 4a, SECTION I RESPONSES

FILE NONAME (CREATION DATE = 07/23/82)

- O N E W A Y -

VARIABLE Y

MULTIPLE RANGE TEST

MODIFIED LSD PROCEDURE
RANGES FOR THE .050 LEVEL -

3.40 3.40

THE RANGES ABOVE ARE TABULAR VALUES.
THE VALUE ACTUALLY COMPARED WITH MEAN(J)-MEAN(I) IS..
1.4670 * RANGE * SQRT(1/N(I) + 1/N(J))

HOMOGENEOUS SUBSETS (SUBSETS OF GROUPS, WHOSE HIGHEST AND LOWEST MEANS DO NOT DIFFER BY MORE THAN THE SHORTEST SIGNFICANT RANGE FOR A SUBSET OF THAT SIZE)

SUBSET 1

GROUP	GRP 1	GRP 3	GRP 2
MEAN	8.1864	8.4234	8.4839

- -

HYPOTHESIS 4b, SECTION I RESPONSES

FILE NONAME (CREATION DATE = 07/23/82)

- O N E W A Y -

VARIABLE Y
BY Q

ANALYSIS OF VARIANCE

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	2	1.0250	.5125	.118	.8884
WITHIN GROUPS	373	1615.3899	4.3308		
TOTAL	375	1616.4149			

GROUP	COUNT	MEAN	STANDARD DEVIATION	STANDARD ERROR	MINIMUM	MAXIMUM	95 PCT CONF INT FOR MEAN
GRP 1	127	8.3937	2.1424	.1901	4.0000	13.0000	8.0175 TO 8.769[illegible]
GRP 2	126	8.3095	2.1999	.1960	4.0000	13.0000	7.9217 TO 8.6[illegible]74
GRP 3	123	8.2683	1.8821	.1697	4.0000	13.0000	7.9324 TO [illegible].6042
TOTAL	376	8.3245			4.0000	13.0000	
UNGROUPED DATA			2.0762	.1071			8.1133 TO [illegible].5350
FIXED EFFECTS MODEL			2.0811	.1073			8.1134 TO [illegible].5355
RANDOM EFFECTS MODEL			.1859	.1073			7.8627 TO [illegible].7662

WARNING - BETWEEN COMPONENT VARIANCE ESTIMATE IS NEGATIVE. IT WAS REPLACED BY 0.0 IN COMPUTING ABOVE RANDOM EFFECTS MEASURES.

RANDOM EFFECTS MODEL - ESTIM. OF BETWEEN COMPONENT VARIANCE -.0305

TESTS FOR HOMOGENEITY OF VARIANCES

COCHRANS C = MAX.VARIANCE/SUM(VARIANCES) = .3731, P = .378 (APPROX.)
BARTLETT-BOX F = 1.656, P = .191
MAXIMUM VARIANCE / MINIMUM VARIANCE = 1.366

HYPOTHESIS 4b, SECTION I RESPONSES

ONEWAY

VARIABLE Y

MULTIPLE RANGE TEST

STUDENT-NEWMAN-KEULS PROCEDURE
RANGES FOR THE .050 LEVEL -

2.81 3.34

THE RANGES ABOVE ARE TABULAR VALUES.
THE VALUE ACTUALLY COMPARED WITH MEAN(J)-MEAN(I) IS..
1.0715 * RANGE * SQRT(1/N(I) + 1/N(J))

HOMOGENEOUS SUBSETS (SUBSETS OF GROUPS, WHOSE HIGHEST AND LOWEST MEANS DO NOT DIFFER BY MORE THAN THE SHORTEST SIGNFICANT RANGE FOR A SUBSET OF THAT SIZE)

SUBSET 1

GROUP	GRP 3	GRP 2	GRP 1
MEAN	8.2683	8.3095	8.3937

HYPOTHESIS 4c, SECTION I RESPONSES

- O N E W A Y -

VARIABLE Y
BY Q

ANALYSIS OF VARIANCE

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	2	.6979	.3490	.081	.9225
WITHIN GROUPS	374	1618.5169	4.3276		
TOTAL	376	1619.2149			

GROUP	COUNT	MEAN	STANDARD DEVIATION	STANDARD ERROR	MINIMUM	MAXIMUM	95 PCT CONF INT FOR MEAN
GRP 1	206	8.3107	1.9805	.1380	4.0000	13.0000	8.0386 TO 8.5827
GRP 2	32	8.4688	2.3689	.4188	5.0000	13.0000	7.6147 TO 9.3229
GRP 3	139	8.3237	2.1543	.1827	4.0000	13.0000	7.9624 TO 8.6850
TOTAL	377	8.3289			4.0000	13.0000	
UNGROUPED DATA			2.0752	.1069			8.1186 TO 8.5391
FIXED EFFECTS MODEL			2.0803	.1071			8.1192 TO 8.5396
RANDOM EFFECTS MODEL			.1856	.1071			7.9679 TO 8.7899

WARNING - BETWEEN COMPONENT VARIANCE ESTIMATE IS NEGATIVE. IT WAS REPLACED BY 0.0 IN COMPUTING ABOVE RANDOM EFFECTS MEASURES.

RANDOM EFFECTS MODEL - ESTIM. OF BETWEEN COMPONENT VARIANCE -.0378

TESTS FOR HOMOGENEITY OF VARIANCES

COCHRANS C = MAX.VARIANCE/SUM(VARIANCES) = .3959, P = .111 (APPROX.)
BARTLETT-BOX F = 1.215, P = .297
MAXIMUM VARIANCE / MINIMUM VARIANCE = 1.431

HYPOTHESIS 4c, SECTION I RESPONSES

ONEWAY

VARIABLE V

MULTIPLE RANGE TEST

STUDENT-NEWMAN-KEULS PROCEDURE
RANGES FOR THE .050 LEVEL -

2.81 3.34

THE RANGES ABOVE ARE TABULAR VALUES.
THE VALUE ACTUALLY COMPARED WITH MEAN(J)-MEAN(I) IS..
1.4710 * RANGE * SQRT(1/N(I) + 1/N(J))

HOMOGENEOUS SUBSETS (SUBSETS OF GROUPS, WHOSE HIGHEST AND LOWEST MEANS DO NOT DIFFER BY MORE THAN THE SHORTEST SIGNFICANT RANGE FOR A SUBSET OF THAT SIZE)

SUBSET 1

GROUP	GRP 1	GRP 3	GRP 2
MEAN	8.3187	8.3237	8.4688

HYPOTHESIS 5, SECTION I RESPONSES

T - T E S T

GROUP 1 - C4 EQ 1.
GROUP 2 - C4 EQ 2.

VARIABLE	NUMBER OF CASES	MEAN	STANDARD DEVIATION	STANDARD ERROR	F VALUE	2-TAIL PROB.	POOLED VARIANCE ESTIMATE T VALUE	POOLED VARIANCE ESTIMATE DEGREES OF FREEDOM	POOLED VARIANCE ESTIMATE 2-TAIL PROB.	SEPARATE VARIANCE ESTIMATE T VALUE	SEPARATE VARIANCE ESTIMATE DEGREES OF FREEDOM	SEPARATE VARIANCE ESTIMATE 2-TAIL PROB.
V1												
GROUP 1	98	8.0222	2.000	.211	1.09	.623	-1.61	375	.108	-1.65	154.41	.101
GROUP 2	287	8.4251	2.092	.124								

HYPOTHESIS 5, SECTION II RESPONSES

T - T E S T

GROUP 1 - C4 EQ 1.
GROUP 2 - C4 EQ 2.

VARIABLE	NUMBER OF CASES	MEAN	STANDARD DEVIATION	STANDARD ERROR	F VALUE	2-TAIL PROB.	POOLED VARIANCE ESTIMATE T VALUE	POOLED VARIANCE ESTIMATE DEGREES OF FREEDOM	POOLED VARIANCE ESTIMATE 2-TAIL PROB.	SEPARATE VARIANCE ESTIMATE T VALUE	SEPARATE VARIANCE ESTIMATE DEGREES OF FREEDOM	SEPARATE VARIANCE ESTIMATE 2-TAIL PROB.
Y2												
GROUP 1	145	4.5931	.954	.079	1.04	.812	-.72	604	.471	-.73	295.00	.463
GROUP 2	461	4.6594	.971	.045								

HYPOTHESIS 6, SECTION I RESPONSES

T - T E S T

GROUP 1 - C1 EQ 1.
GROUP 2 - C1 EQ 2.

VARIABLE	NUMBER OF CASES	MEAN	STANDARD DEVIATION	STANDARD ERROR	F VALUE	2-TAIL PROB.	POOLED VARIANCE ESTIMATE T VALUE	POOLED VARIANCE ESTIMATE DEGREES OF FREEDOM	POOLED VARIANCE ESTIMATE 2-TAIL PROB.	SEPARATE VARIANCE ESTIMATE T VALUE	SEPARATE VARIANCE ESTIMATE DEGREES OF FREEDOM	SEPARATE VARIANCE ESTIMATE 2-TAIL PROB.
Y1												
GROUP 1	323	8.2446	2.058	.115	1.07	.718	-1.94	375	.054	-1.87	70.62	.065
GROUP 2	54	8.8333	2.126	.289								

HYPOTHESIS 6, SECTION II RESPONSES

T - T E S T

GROUP 1 - C1 EQ 1.
GROUP 2 - C1 EQ 2.

VARIABLE	NUMBER OF CASES	MEAN	STANDARD DEVIATION	STANDARD ERROR	F VALUE	2-TAIL PROB.	POOLED VARIANCE ESTIMATE T VALUE	DEGREES OF FREEDOM	2-TAIL PROB.	SEPARATE VARIANCE ESTIMATE T VALUE	DEGREES OF FREEDOM	2-TAIL PROB.
Y2												
GROUP 1	522	4.6034	.965	.042	1.04	.832	-2.56	604	.011	-2.60	112.71	.011
GROUP 2	84	4.8929	.944	.103								

HYPOTHESIS 7, SECTION I RESPONSES

• MULTIPLE REGRESSION •

DEPENDENT VARIABLE.. Y

MEAN RESPONSE 8.32891 STD. DEV. 2.07519

VARIABLE(S) ENTERED ON STEP NUMBER 1.. C5

MULTIPLE R	.08051	ANALYSIS OF VARIANCE	DF	SUM OF SQUARES	MEAN SQUARE	F SIGNIFICANCE
R SQUARE	.00648	REGRESSION	1.	10.49598	10.49598	2.44666 .119
ADJUSTED R SQUARE	.00383	RESIDUAL	375.	1608.71888	4.28992	
STD DEVIATION	2.07121	COEFF OF VARIABILITY	24.9 PCT			

---------- VARIABLES IN THE EQUATION ----------

VARIABLE	B	STD ERROR B	F SIGNIFICANCE	BETA ELASTICITY
C5	.71117610E-01	.45466355E-01	2.4466623 .119	.0805117 .06448
(CONSTANT)	7.7918519	.35953842	469.66777 0	

---------- VARIABLES NOT IN THE EQUATION ----------

VARIABLE	PARTIAL	TOLERANCE	F SIGNIFICANCE

ALL VARIABLES ARE IN THE EQUATION.

COEFFICIENTS AND CONFIDENCE INTERVALS.

VARIABLE	B	STD ERROR B	T	95.0 PCT CONFIDENCE INTERVAL
C5	.71117610E-01	.45466355E-01	1.5641810	-.18283346E-01, .16051457
CONSTANT	7.7918519	.35953842	21.671820	7.0848878 , 8.4988160

VARIANCE/COVARIANCE MATRIX OF THE UNNORMALIZED REGRESSION COEFFICIENTS.

C5 .00207

C5

HYPOTHESIS 7, SECTION I RESPONSES

VARIABLE	MEAN	STANDARD DEV	CASES
Y	8.3289	2.0752	377
C5	7.5517	2.3493	377

CORRELATION COEFFICIENTS.

A VALUE OF 99.00000 IS PRINTED
IF A COEFFICIENT CANNOT BE COMPUTED.

	Y
C5	.05051

APPENDIX G

RESPONDENTS' COMMENTS

Section IV of the survey was an open-ended request for comments. The authors felt it would be both interesting and helpful to give the respondents a chance to voice their opinion about the survey, the Air Force, or any related subject. The comments ranged from humorous to thought-provoking.

After reading and analyzing the content of the comments, it became apparent that they fell naturally into three specific groups and one miscellaneous group. The groups were: desire to fly; pro bonus and/or flight pay increases; against the survey; and, other miscellaneous comments. A representative sample of the comments is presented below.

Desire to Fly

"To me the flight pay and bonus is nice, but I just want to fly for the Air Force."

"Please consider the fact that all I want to do is fly."

"One of the most important factors that will determine how long I say in the A.F. will be how much and what I get to fly."

"The patriotic and professional element in me compels me to fly for the Air Force."

Pro Bonus and/or Flight Pay Increases

"I would rather have higher flight pay and smaller bonuses because flight pay is a certainty, whereas bonuses incurred 7 years or more down the road may never be realized."

"I feel that if the military intends to keep quality personnel they are going to have to pay them the equivalent of their civilian counterparts."

"Bonuses are nice but I am in favor of higher monthly flight pay rates."

Against the Survey

"I felt this was a bad questionnaire. Instead of a monthly pay scale, a yearly amount should have been provided."

"I think this survey is quite useless. At this point in time, it is hard to determine how many years I will stay in."

"Too long and tedious!"

"It is difficult to assign an intelligent, specific answer to these questions."

Other Miscellaneous Comments

"I think more emphasis should be put on retention after a reasonable initial commitment than on trying to commit people to a major part of their career."

"Depending on my success at UPT and my liking for the Air Force, I fully intend to make the A.F. at least a 20 year commitment."

"If we were joining the A.F. for money, no one would join."

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